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The Downside Collection of Orchids.

FIRST SALE, TUESDAY, WEDNESDAY, THURSDAY, and FRIDAY NEXT.

HIGHLY IMPORTANT EIGHT DAYS' SALE of the whole of this renowned Collection, including many plants matchless in point of rarity, and the whole remarkable for culture and condition, embracing unquestionably the most valuable and extensive Collection of

ESTABLISHED ORCHIDS

that has ever been submitted to Public Competition. MESSRS. PROTHEROE AND MORRIS are favoured with instructions from Wm. Lee, Esq. (who is selling the Estate of Downside, and relinquishing the cultivation of Orchids), to SELL by AUCTION, on the Premises, Downside, Leatherhead, about one mile from either of the Leatherhead Railway Stations, the whole of this extremely valuable Collection of

ESTABLISHED ORCHIDS.

The FIRST SALE will take place On TUESDAY, WEDNESDAY, THURSDAY, and FRIDAY NEXT, July 11, 12, and 13, 1888, at half-past 12 o'clock precisely each day, in consequence of the large number of Lots.

A list of the principal plants included in this First Sale appeared in the *Gardeners' Chronicle* of Saturday last.

A Descriptive Advertisement of the entire Sale will be found on the next page.

Catalogues for both Sales are now ready, and may be obtained of Mr. WOLFORD, the Head Gardener, on the Premises; and of the Auctioneers, Estate Agents and Valuers, 67 and 68, Cheapside, London, E.C.

N.B.—The SECOND PORTION will be SOLD on TUESDAY, WEDNESDAY, THURSDAY, and FRIDAY, July 24, 25, 26, and 27, 1888.

Monday, July 9.

SPECIAL SALE OF ORCHIDS.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. F. Sander to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on MONDAY NEXT, July 9, at half-past 12 o'clock precisely, a quantity of ESTABLISHED ORCHIDS. Amongst those offered for sale are the following:—

<i>Cattleya Gaskelliana</i> alba (true) with sheath	<i>Cypripedium Laurenceanum</i> (fine variety in flower)
" <i>Wagneri</i>	<i>Bollea Lalondei</i>
" <i>Reineckiana</i>	<i>Angraecum Sanderianum</i>
" <i>Rothschildiana</i>	<i>Dendrobium Ainsworthii</i>
" <i>aurea</i>	" <i>Leechianum</i>
" <i>imperialis</i>	" <i>mobile Sanderianum</i>
<i>Cypripedium Calurum</i>	<i>Masdevallia calura</i> (20 leaves)
" <i>Germinyanum</i>	" <i>acorchordiana</i>
" <i>Dominianum</i> , with eight growths and flower-spikes	" <i>Reichenbachiana</i>
" <i>to grandis</i>	" <i>Infrecta purpurea</i>
" <i>Selligerum majus</i>	<i>Utricularia montana</i> in flower
" <i>Thibautianum</i>	<i>Zygopetalum aromaticum</i> (3 growths)

Also good plants of *Cypripedium præstans*, *Catasetum Bungeorum*, and *Agnisia cyanea*, from L'Horticulture Internationale (Linden) of Brussels.

On view morning of Sale, and Catalogues had.

Havant.

FIRST ANNUAL SUMMER SALE.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. Ewing & Co. to SELL by AUCTION, on the Premises, the Sea View Nurseries, Havant, on WEDNESDAY, July 11, at 12 o'clock precisely, 5000 TEA, NOISSETTE, and other ROSES in pots; 2000 IVIES of the choicest green leaved and variegated kinds, 1000 AMPELOPSIS VEITCHII, and other VIRGINIA CREPERS; a large quantity of Hardy PASSION FLOWERS, including the new White Constance Elliott; Japanese and other HARDY EVERGREENS, choice flowering and foliaged TREES and SHRUBS, Hardy CLIMBING PLANTS, &c., all in pots suitable for immediate removal.

May be viewed any day prior to the Sale. Catalogues may be had on the Premises, at the principal Hotels in the district, and of the Auctioneers, 67 and 68, Cheapside, E.C., and Leytonstone.

Orchids in Flower.—Special Sale, July 31.

MESSRS. PROTHEROE AND MORRIS desire to announce that their NEXT SPECIAL SALE of ORCHIDS IN FLOWER will take place as above, for which they will be glad to RECEIVE NOTICE OF ENTRIES as early as possible.

67 and 68, Cheapside, London, E.C.

Friday, July 20.

Important SALE of the whole of the COLLECTION of ESTABLISHED ORCHIDS (excepting the Cool-house Orchids), by order of the Executors of the late H. Littleton, Esq., of Westwood House, Sydenham, without reserve.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY, July 20, at half-past 12 o'clock precisely, without reserve, the COLLECTION of ESTABLISHED ORCHIDS, formed by the late H. Littleton, Esq. (except the Cool-house Orchids), including fine specimen *Pescatorea Lehmanni*, several fine *Vandas*; about 200 *Cattleyas*, including *gigas*, *labiata*, *Mendelii*, *Mossii*, *Trianae*, and others; fine pieces of *Odontoglossum*, *Uro-Skinneri*, *Insleyi*, *Leopoldianum*, and *Londesboroughianum*; several large *Coleogyne cristata*, *Cypripedium venustum*, *vellosum*, *hirsutissimum*, *caudatum*, and others; fine piece of *Epidendrum primatocarpum*; specimen *Cymbidium eburneum* and *Parishii*; *Aërides* and *Dendrobies* in variety; a fine lot of *Cypripedium niveum*, and *Calanthe Veitchii* *Phalenopsis*; also twelve fine specimen *Eucharis amazonica*, in splendid health, and four *Panacraum* fragrans.

On view morning of Sale, and Catalogues had.

Monday, July 23.—Special Sales of Orchids.

MESSRS. PROTHEROE AND MORRIS beg to give notice that they will SELL, by order of Mr. F. Sander, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on the above date, large quantities of Imported and Established ORCHIDS.

Further particulars will be announced.

Friday, August 17.

The remaining portion of the valuable Collection of Established ORCHIDS, formed by F. A. Philbrick, Esq., Q.C., of Oldfield, Bickley.

MESSRS. PROTHEROE AND MORRIS beg to give notice that they will SELL the above by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY, August 17.

Further particulars will appear.

The Remaining Portion of the Valuable Collection of ORCHIDS formed by the late JOHN DAY, Esq., of Tottenham.

MR. J. C. STEVENS begs to announce that he has been favoured with instructions from the Executors of the late John Day, Esq., to SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY, July 18, at half-past 12 o'clock precisely, the Remaining Portion of his valuable COLLECTION of ORCHIDS, comprising—

<i>Odontoglossum Andersonianum</i> lobatum	<i>Cattleya Trianae</i> , superb forms
" <i>Wilckeianum</i>	<i>Angraecum caudatum</i>
" <i>Ruckerianum</i>	<i>Odontoglossum Alexandrae</i>
<i>Cattleya Warneri</i> , superb forms	" <i>Pescatorei</i>
	<i>Thyrsotis elegans</i> , with 7 fronds—very rare

A choice collection of *Cypripediums*, &c.

On view morning of Sale, and Catalogues had.

Unique and Valuable Water-colour Drawings of ORCHIDS.

MR. J. C. STEVENS has been favoured with instructions from the Executors of the late John Day, Esq., of High Cross, Tottenham, to include in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY, July 18, the Unique and Valuable Collection of Life-size WATER-COLOUR DRAWINGS of ORCHIDS, by Durham, contained in 22 bound volumes, together with 44 loose Drawings, and 5 framed, ditto.

On view morning of Sale, and Catalogues had.

Valuable and Extensive Herbarium.

MR. J. C. STEVENS has been favoured with instructions from the Executors of the late John Day, Esq., of High Cross, Tottenham, to include in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY, July 18, his splendid HERBARIUM, contained in seven well made Pine Cabinets, comprising specimens of Ferns of nearly every known variety.

On view morning of Sale, and Catalogues had.

Special Sale of Orchids in Flower and Bud.

MR. J. C. STEVENS begs to announce that his next SALES of ORCHIDS in FLOWER and BUD will take place at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY and THURSDAY, July 18 and 19, and he will be glad if Gentlemen desirous of entering Plants for this Sale will send particulars not later than Thursday Next.

Masonic Hall, Lincoln.

IMPORTANT SALE of the well-known COLLECTION of PLANTS formed by Mr. Hayland Greenham, of Metheringham Heath, near Lincoln.

MESSRS. RICHARD HALL AND GEORGE TICKERS will SELL by AUCTION, at the Masonic Hall aforesaid, on FRIDAY, July 13, 1888, the whole of the valuable COLLECTION of GREENHOUSE and other PLANTS, consisting of several grand specimens of *Eucharis amazonica*, in perfect health; a magnificent *Cycas revoluta*, fine specimens of *Adiantum farleyense*, *Yucca*, *Dracenas*, two plants of the lovely *Hoya bella*, and various well-grown Palms, Ferns, Epiphyllums, and other Stove and Greenhouse Plants. The whole are in perfect health and splendid condition, and are admirably adapted for exhibition. The Gardener will show the Plants at Metheringham aforesaid till July 10; they will be removed to, and be on view at the Masonic Hall on the morning of Sale from 10 to 12. Sale to commence at 2 o'clock. Auction and Valuation Offices, Bank Street, Lincoln.

Scotland Nurseries, Tansley, Matlock.

MR. GEORGE MARSDEN will SELL by AUCTION at the "Old English" Hotel, Matlock Bridge, on MONDAY, July 16, 1888, at 5 o'clock in the afternoon, the old-established and widely known NURSERY, as founded by the late Mr. Joseph Smith, with the residence called Scotland House, and Workman's Cottage, Stables and Appurtenances, situate at Tansley, having a total area of 9a. 1r. 8p.

For further particulars, apply to the Auctioneer, Wirksworth; or at the Office of JOSEPH STONE, Solicitor, Wirksworth and Winstler.—June 20, 1888.

WANTED, TO RENT AT ONCE, on Lease, about AN ACRE of LAND, with Glass suitable for Market Growing. No stock required as advertiser has his own. Address, A., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

TO BE SOLD, a MARKET NURSERY, 2½ Acres, as a going concern. Glass, &c., in good condition. Rent low. All at Roses at speciality. Ten Miles from Covent Garden. Splendid opportunity. A. S., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

To the Seed Trade.

TO BE DISPOSED OF, a Retail BUSINESS, of many years' standing, situated in a main thoroughfare of the City of London. A good opportunity for a young man of ability and experience. Apply by letter only. X. Z. Z., Messrs. Moon & Gilks, 15, Lincoln's Inn Fields, W.C.

Florists, Nurserymen, and Others.

Suit Growers, or admirable chance to start a good local Business. TO BE SOLD, most compact PREMISES, on the Main Road, rising Suburb, about 5 miles from Marble Arch, containing eight-roomed Residence, large Greenhouse, Forcing Pit, the whole standing in about half an acre of Ground. Lease 37 years at a Ground Rent. Price £900, which includes all Stock and Utensils. HERBERT DRAKE, 343, Harrow Road, Paddington, N.W.

Beautiful Gardens and Grounds.

A very fine Fernery fitted with Rocks and Choice Tree and other Ferns, Glasshouses, &c.

FOR SALE, Freehold, CLIVE HOUSE, Esher, facing Claremont, for many years the residence of the Honble. Mr. Justice Wills; 5½ or 10½ acres. Worthy the attention of any horticulturist who may wish to secure possession of a property with very complete adjuncts of the above description.

Messrs. LOFTS and WARNER, 130, Mount Street, Grosvenor Square, W.; or Messrs. DEBENHAM, TEWSON, FARMER and BRIDGEWATER, 80, Cheapside, E.C. (42,473.)

Nurserymen, Florists, and Gardeners.

FOR SALE (through dissolution of partnership), the BLACKHEATH NURSERIES, a going concern, in the centre of a wealthy residential neighbourhood, 7 miles from Covent Garden. The long Lease of a compact well-established Nursery of 2 acres, with Stand in Covent Garden Floral Market, 6 Greenhouses, 125 by 13 feet; and 1 House, 105 by 30 feet; all exceptionally well built and heated. A good jobbing business could be done.

Apply, R. J. SUTER, 6, Eastcombe Terrace, Blackheath.

To Florists and Small Capitalists

Seeking a pleasant and remunerative occupation.

THE LEASE and GOODWILL of a well-established BUSINESS, successfully carried on for over 50 years, the present owner retiring. Every investigation courted in personal application. Price £300. Stock at valuation.—W. A. CLINGO, Nurseryman and Florist, 18, Finchley Road, St. John's Wood, N.W.

TO LET, AT ONCE, an Old-established SEEDSMAN and FLORIST BUSINESS. Several good Greenhouses, all very compact. To a good grower of Plants, Cucumbers, and Tomatoes, with about £250 to invest, an unusual opportunity is offered.—J. F., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

TO BE LET, a TOWN MANSION, with large and singularly picturesque Gardens of 1½ acre, belted in with fine old Timber, affording shade and retirement. Lodge entrance, first-class Stabling, Glasshouses, full sized Billiard-room, full sized and secluded Tennis Lawn, and all accessories. House has been for many years in same occupation, and is in excellent repair. It is but seldom that a property of the kind can be secured, affording, as it does, adjuncts that are only obtainable in the country, although in this case within but little more than a mile from Regent Street.

Messrs. LUMLEY, 22, St. James Street, S.W.; or Messrs. DEBENHAM, TEWSON, FARMER and BRIDGEWATER, 80, Cheapside, E.C. (42,497.)

Durant's Arbour Estate, Ponder's End, Middlesex.

To NURSERYMEN, FLORISTS, and OTHERS.

TO BE LET, on Lease, for 21, 60, or 80 years, 1 to 50 acres of excellent MEADOW LAND, from £8 to £11 per acre, with the option of the purchase of the freehold within the first 9 years. No title or land tax. Apply to A. AND G. GULVER, Land Agents, &c., Ponder's End, N.B. Several Nurseries established on the estate.

Fifty Nurseries, Market Gardens, Florist and Seed

BUSINESSES to be DISPOSED OF.

MESSRS. PROTHEROE AND MORRIS' HORTICULTURAL REGISTER contains full particulars of the above, and can be obtained, gratis, at 67 and 68, Cheapside, London, E.C.

ORCHIDS.

THE LIVERPOOL HORTICULTURAL CO.

(JOHN COWAN), Limited,

Have just received large and fine importations of the following

ORCHIDS:—

CATTELEYA MENDELII.

" AMETHYSTOGLOSSA,

" GUTTATA LEOPOLDI,

LÆLIA PURPURATA,

MILTONIA CANDIDA GRANDIFLORA,

" SPECTABILIS MORELIANA,

SOPHRONITIS GRANDIFLORA, &c.

Full particulars on application.

THE VINEYARD AND NURSERIES, GARSTON, near LIVERPOOL.

PRIMULAS—PRIMULAS—PRIMULAS.—

Grand Premier Prize and Covent Garden strains. Fine large trusses, beautifully fringed flowers, and new colours. Good Plants, to bloom well, per dozen, 1s. 3d.; extra strong, 1s. 6d.; per 100, 9s. All carriage free.

CINERARIAS—CINERARIAS.—Bull's and

Cannell's celebrated Prize Strains, and most brilliant colours. Cannot be excelled. Good Plants to bloom well, per dozen, 1s. 3d.; extra strong, 1s. 6d.; per 100, 9s. All carriage free.

S. SHEPHERSON, Florist, Prospect House, Belper, Derbyshire.

THE DOWNSIDE COLLECTION of ORCHIDS.

HIGHLY IMPORTANT EIGHT DAYS' SALE

Of the Whole of this Renowned Collection,

Including many Plants matchless in point of rarity, the whole remarkable for Culture and Condition, embracing unquestionably the most valuable and extensive collection of

ESTABLISHED ORCHIDS

that has ever been submitted to Public Competition.

MESSRS. PROTHEROE & MORRIS are favoured with instructions from Wm. LEE, Esq. (who is selling the Estate of Downside, and relinquishing the cultivation of Orchids), to **SELL by AUCTION**, on the Premises, Downside, Leatherhead, about 1 mile from either of the Leatherhead Railway Stations,

THE WHOLE of this Most Valuable Collection of ESTABLISHED ORCHIDS.

THE FIRST SALE WILL TAKE PLACE ON TUESDAY, WEDNESDAY, THURSDAY & FRIDAY NEXT,
July 10, 11, 12, and 13, and the

SECOND SALE ON TUESDAY, WEDNESDAY, THURSDAY & FRIDAY, JULY 24, 25, 26 & 27,

Commencing at half-past 12 o' Clock precisely each day, in consequence of the large number of lots.

Amongst the **CATTLEYA TRIANÆ SECTION** (mostly fine specimens). will be found:—

Cattleya Trianæ Leana, 4 plants of this superb variety.	C. Trianæ Victoria Regina
" " Osmani, 3 plants.	" " Russelliana
" " Dodgsoni, 3 plants	" " Vestal
" " Dayana	" " bellicosa
" " Emperor	" " marginata
" " Empress	" " magnifica
" " Emilie	" " Normani
" " Backhousiana	" " gigantea
" " Colemani	" " Williamsi
" " alba	" " lilacina
" " Orion	" " General Gordon
" " virginialis	" " Ruddigore
" " eboracensis	" " Mephistopheles
" " compacta	" " Cheloni
" " regina	" " beatifica
" " implicata major	" " Archduke
	" " Archduchess
	" " bella

and many others not yet named, which will be offered with their portraits painted by Macfarlane, the whole forming probably the grandest collection of fine varieties of the Trianæ section ever brought together, many of the plants, moreover, being of the largest size, with many strong leads,

Amongst the **HYBRID CATTLEYAS** will be found:—

Cattleya fausta	Cattleya Dominiana
" calumnata	" Germyni
" Mardelli	" Mastersoniæ
" exoniæ sis	

HYBRID LÆLIAS will include:—

Lælia Amesiana	Lælia bella
" Vetchiana	" flammea
" callistoglossa, a grand plant, with 16 great bulbs and 4 breaks	" Leana
	" Rivieri

The **HYBRID DENDROBIUMS** will include:—

Dendrobium Ainsworthi	Dendrobium splendidissimum
" Leechianum	" grandiflorum, the grandest of all, with 8 bulbs over 2 feet high, and 3 breaks
" splendidum	Dendrobium endocharis
" micans	" rhodostoma
" eucosmum var. leucop-terum	

The **HYBRID CYPRIPEDIUMS** will include:—

Cypripedium grande	Cypripedium cardinale
" amandum	" Sedeni, and its fine variety candidulum
" Arthurianum	" Crossianum
" albo purpureum	" conchiferum
" calurum	" Dominianum
" euryandrum	" Hartwegi
" lo	" Leeanum superbum
" Morganie	" politum
" Swannianum	" marmorophyllum
" Vervæneanum	" calophyllum
" selligerum majus	" tessellatum porphyreum
" Harrisonianum	" superciliale
" superbum, the special fine variety of Veitch	" vexillarium
" Ashburtonie	" onanthum
" microchilum	" superbum
" javanico-superbiens	" Schroderæ
" chloroneurum	" Wianianum

CATTLEYA SECTION.

Cattleya labiata (autumn flowering)	Cattleya Mendelii, many special varieties
" Skinneri	" elegantissima
" alba	" Selbornensis
" Percivaliana, special varieties	" Morganie
" alba, rare	" Jamesiana, rare
" delicatissima	" fiana
" Mossie alba	" imperialis and Sander-
" Reineckiana	" Hardyana
" Southgatei	" aurea
" rubra superba	" Williamsi, of the gutta-tum section

LÆLIA SECTION.

Lælia elegans alba	Lælia purpurata Williamsi
" Leana	" Warneri
" Stelzneriana	" Nellisi
" Dayana	" anceps Schroderæ
" prasiata	" Sanderiana
" Houtteana	" Dawsoni
" Hesperis	" Veitchii
" Wolstenholmiæ	" Williamsi
" Turneri	" Leana
" purpurata alba and rosea	" Hilliana
" Russelliana (a magnificent specimen)	" alba (true)
" Brysiana	" Percivaliana
" albo-lilacina (a splendid variety)	" Barkeri
	" Calvestrina
	" blanda

DENDROBIUM SECTION.

Dendrobium Phalenopsis	with 8 bulbs over 2 feet long, and 3 growths
" nobile nobilius, the well-known large plant,	Dendrobium arachnites

LYCASTE and CÆLOGYNE SECTION.

Cælogyne cristata alba	Cælogyne Massangeana
" Chatsworth variety	" Dayana
" Lemoineana	" Lowii
" Trentham variety	Lycaete Skinneri (fine varieties, true to name)
" maxima variety	
" All fine plants.	

MASDEVALLIA SECTION.

comprises a grand and complete collection of Masdevallias, many of the highest class, and some very rare.

ODONTOGLOSSUM SECTION.

There is a large and very choice collection of the finest varieties in large plants, true to name, which have been grown at Downside for several years, and are models of successful cultivation.

PHALÆNOPSIS SECTION.

Amongst the Phalænopsis are two plants of P. Brymeriana, also intermedia, Portei, one of the true variety Dayana, and several leucorrhoda and casta.

VANDA, AERIDES and ANGRÆCUM SECTION.

A grand assortment of these, all in splendid health.

MISCELLANEOUS.

Maxillaria Sanderiana, 5 plants (one in flower)	Saccolabium Heathii
Cypripedium Wallisi, 2 plants	" Harrisonianum or giganteum album
" Wallisi, 3 plants	

Messrs. P. & M. desire to mention that no Plants will be Sold Privately, but that the whole will be submitted to Public Competition.

The plants may be viewed any day prior to the Sale on presentation of Catalogue, or Card to View. Catalogues of both portions are now ready, and may be obtained of Mr. WOOLFORD, the Head Gardener, on the Premises; or of the Auctioneers, at their Central Auction Rooms and Estate Offices, 67 and 68, Cheapside, London, E.C.

GARDENERS' ORPHAN FUND.

A Public

DINNER

AND GREAT

Gathering of Gardeners

WILL BE HELD ON THE OCCASION OF THE

FIRST ANNIVERSARY AND ELECTION,

ON

FRIDAY, JULY 13, 1888, at 5 P.M.,

AT THE

Cannon Street Hotel.

Sir JULIAN GOLDSMID, Bart., M.P.,
IN THE CHAIR.Tickets 5s. each, to be had of the Hon. Sec.,
Mr. A. F. BARRON, Royal Horticultural
Society's Gardens, Chiswick.THE GARDENERS'
ORPHAN FUND.

DONATIONS and SUBSCRIPTIONS

WILL BE THANKFULLY RECEIVED BY

A. F. BARRON, Hon. Sec.,

Royal Horticultural Society's Gardens,
Chiswick, London, W.SIMPLE INSTRUCTIONS by which an
abundance can be insured of delicious MUSHROOMS.

See Seed LIST, Free.

RICHARD SMITH AND CO., Seed Merchants and Nursery-
men, Worcester.

Carnations, Pinks, and Picotees, from Seeds.

The Flower of the Gods!!! (Dianthus: *dios*, divine, and *anthos*,
flower).WILLIAM BAYLOR HARTLAND is
offering for Summer Sowings his celebrated strain of
the above. His "White Rosette" Clove-scented Carnation is
richly perfumed, and snow-white in colour, resembling a
"Rosette," and possessing the valuable property of not splitting
in the calyx even in the hottest weather, and for buttonhole
work and general cutting purposes is unequalled.CARNATION, Yellow, Bizarre, and Self, 12 varieties, separate,
per collection, 4s.; mixed packets, 1s. and 2s. 6d."Yellow, Flake, 12 varieties, separate, per collection, 4s.;
mixed packets, 1s. and 2s. 6d."Hartland's White Rosette, Clove-scented, own savings,
per packet, 1s."Scarlet Grenadin, or floribunda coccinea, large packet,
2s. 6d.; per packet, 6d.: beautiful.

"Perpetual, or Tree, for pots, superb, per packet, 1s.

PICOTEE, Yellow and White Grounds, 12 superb varieties,
4s. 6d.; mixed, packet, 1s.PINK, very choicest, mixed. Some single forms will be found
included in this choice strain, and they are very beau-
tiful. Per packet, 1s."Mrs. SINKINS, selected from a lovely non-splitting form
of this well-known plant, and own saving, 1s. and
2s. 6d.**Hartland's Mixed Packets of Gloxinia, Primula, Cine-
raria, and Calceolaria, are unequalled for quality, 1s. 6d. and
2s. 6d. each.W. BAYLOR HARTLAND, F.R.H.S., Seedsman, 24, Patrick
Street, Cork.CLEARANCE SALE
OF STRONG HEALTHY PALMS.Latania borbonica, Scaevola elegans, Phoenix reclinata,
&c., 20 to 24 inches high, 16s. per dozen. Same kinds,
2 ft. 6 in. to 3 ft. high, 3s. to 5s. each. Handsome Palms
for decoration, 5 ft. 6 in. to 6 ft. high, 70s. per pair. Small
Palms, 10 to 12 in. high, 4s. per dozen.

Kentias, from 3s. to 21s. each.

Fine Dracaenas, from 2s. to 30s. each.

Over 50,000 Palms to select from.

B. OWEN, The Palm Gardens, Stamford Hill, N.
A Visit solicited.

ADIANTUM WALTONII (New Hybrid).—

This graceful Fern is now being sent out. For full de-
scription see *Gardeners' Chronicle* for June 23, 1888. Good
strong Plants with 5 to 7 fronds, 2s. 6d. each, 6 for 12s. 6d.;
smaller plants, 1s. 6d. each, 6 for 7s. 6d.Exors. of HENRY WALTON, Edge End Nursery, Brierfield,
Burnley, Lancashire.The Best Present for a Gardener.
VINES and VINE CULTURE.The most complete and exhaustive Treatise on
Grapes and their Culture ever published.

New Edition.

Price 5s., post-free 5s. 8d.

A. F. BARRON, Royal Horticultural Society, Chiswick.

All who are interested in Forests and Gardens should read the American Journal,

GARDEN AND FOREST,

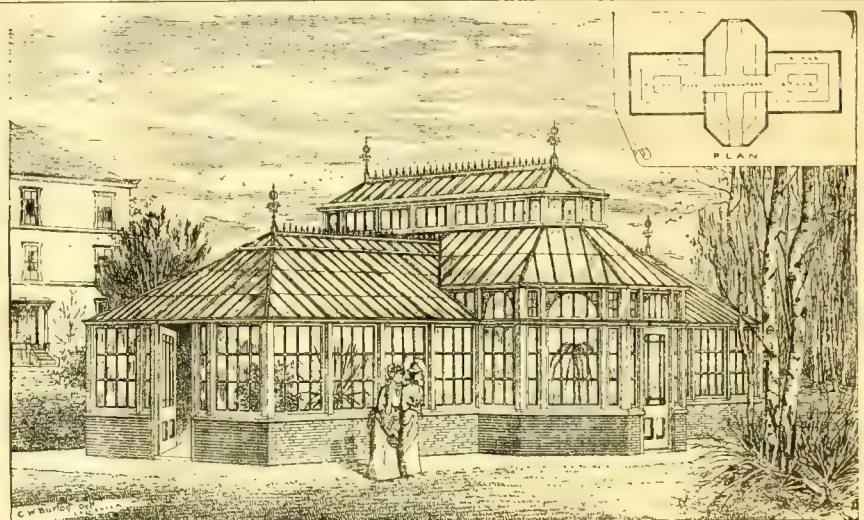
AN ILLUSTRATED WEEKLY JOURNAL OF HORTICULTURE,
LANDSCAPE ART AND FORESTRY.

Conducted by Professor C. S. SARGENT, of Harvard College, Mass.

Subscription 21s. per annum, including postage.

"It is as handsome a journal of its class as any one can wish to see. With its orderly arrangement, exquisitely neat appear-
ance, and the air of freshness pervading its pages it reminds us of nothing so much as a well-kept June garden. Its appearance
will be welcomed by a large class of men and women who love flowers, plants and trees, and want to know more about what they
see or fail to see in their own suburban gardens and in their rural walks. Upon all these fields *Garden and Forest* enters with a
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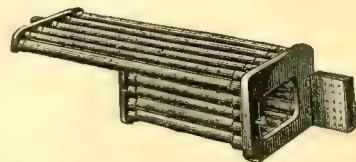
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THE

Gardeners' Chronicle.

SATURDAY, JULY 7, 1888.

**NOTES FROM FULHAM
PALACE.**

FEW places near London possess greater his-
toric interest than Fulham Palace, or are
more noted for remarkable or rare trees. The
Manor House of Fulham, or, as it is now called,
Fulham Palace, has been the summer residence
of the Bishop of London for more than eight
centuries. The principal entrance to the Palace
is through a fine avenue of aged Limes; and the
gardens, which are very old, have been famous
since the time of Bishop Grindall, who lived in
the time of Queen Elizabeth. It appears that
Grindall got himself into trouble by sending
some fine Grapes to the Queen, with whom they
disagreed, and the Bishop was accused of having
the plague in his house—an accusation which he
was able to disprove.

According to Fuller's *Worthies* it was Grin-
dall who first imported the Tamarisk into this
country. This tree, writes Fuller, "hath not
more affinity in sound with Tamarind than
sympathy in extraction, both originally Arabick
—general similitude in leaves and operation;
only Tamarind in England is an annual, dying at
the approach of winter, whilst Tamarisk lasteth
many years. It was first brought over by Bishop
Grindall out of Switzerland (where he was exiled
under Queen Mary), and planted in his garden
at Fulham, in this country, where the soil, being
moist and ferny, well complied with the nature of
this plant, which since is removed, and thriveth
well in many other places."

Bishop Compton has the well earned credit of
being the great gardener at Fulham Palace. He
was banished to Fulham by James II., and re-
mained in the place for two years, attending
diligently to his garden during that time. He
planted there many exotics and trees, then almost
unknown in England—a great Cork tree, a cha-
racteristic specimen, but now much decayed. In
passing I may observe that this is the stage
which many once fine examples have now
reached. This tree, which was at one time the

largest in England, and also a large *Ilex*, are traditionally said to have been planted by his hand. Bishop Blomfield planted a Cedar of Lebanon, which is now a fine tree, although much damaged by the great snowstorms of the winter of 1886-87.

One fact notably strikes the visitor: the thickness with which the trees are planted here. One Bishop having thinned them considerably, Lord Bacon wittily told him that, "Having cut down such a cloud of trees, he must be a good man to throw light on dark places!"

It may prove somewhat of interest, perhaps, to put on record here that Sir William Watson, who made a botanical survey of the ground about a hundred years ago, speaks of this garden in the following terms, in a report to the Royal Society:—"The famous botanical garden at Fulham, wherein Dr. Henry Compton, heretofore Bishop of London, planted a greater variety of curious exotic plants than had at any time been collected in any garden in England."

It is not at all surprising to find that Evelyn, with his intense love of gardening, was a visitor here. In his *Diary*, under date of October 11, 1681, he writes, "I went to Fulham, to visit the Bishop of London, in whose garden I saw the *Sedum arborescens* in flower, which was exceedingly beautiful."

Since the present Bishop, Dr. Temple, came into residence, great alterations and improvements in the grounds have been made by him, under the direction of his gardener and bailiff, Mr. A. J. Ballhatchet. To refer to only one portion of the grounds: On the north side of the Palace a great and much needed "clearance" has been made. A plantation of old *Acacias* has been dug up, and the ground sown with grass, which now forms part of the fine lawn, thus throwing into bolder relief this side of the Palace. A moat, exactly one mile in length, surrounds the grounds. This is filled from the River Thames whenever the tides permit, through a very old-fashioned sluice and gates. Last winter the moat was cleaned out—a gigantic task—and some 5000 loads of mud removed therefrom. This was spread, in order to get rid of it, in the best way, on the park field; its good effect will, doubtless, be seen there in due time.

A few brief notes on some of the most notable trees observed on a recent visit may fitly be added to this necessarily hurried description of a place so rich in arboricultural interest. A very fine *Gleditsia*—a representative of a race of ornamental hardy deciduous trees—was noted. Before a large limb came off some years ago it was considered to be the finest of its kind in the kingdom. *Platanus acerifolia* is represented by a magnificent, symmetrical specimen, some 80 feet in height; the girth of its trunk at base measuring 18 feet, and the spread of its branches forming a perfect circle, being 66 feet. English *Elms* abound, and are represented by some stately examples, one we measured being 23 feet 6 inches in girth at the base of the trunk, and from 60 to 70 feet in height. A Black Walnut (*Juglans nigra*), a noble specimen, but damaged by storms, some 24 feet in girth at the base of the trunk; and an idea of the timber contained in it may be estimated from the fact that £30 has been offered for it, and refused. *Ailantus glandulosa* is a fine example, though somewhat damaged by the storms of last winter. Flowering *Ashes* were noted as being very conspicuous. The old Oaks, as might be imagined in such a place, worthily represented. The columnar Oak, *Quercus fastigiata*, is well worthy of particular mention; but the Oaks, as a rule, have suffered by the storms. The Horse Chestnuts, of which there are many, are venerable trees. *Thuia gigantea* was noted as doing well here, and was represented by fine symmetrical examples. *Araucaria imbricata* and *Wellingtonia* do not grow well, the light sandy soil not suiting their requirements; and smoke and fogs have something to do with their unhealthiness.

The Mock Oranges, those useful and effective

flowering subjects, are much esteemed here, about a hundred fine bushes being distributed over the place. Very striking is the row of *Poplars* (common variety) planted by the moat, towering above every other form of tree growth—from 70 to 80 feet in height—trunks unusually large for this kind of tree. Unfortunately many of them are now decaying; a number of them are about of one age, and seem to have been planted by one particular Bishop. However, to replace those whose end is approaching, Mr. Ballhatchet has planted several young ones. The storms of recent winters have something to answer for, in that they uprooted a fine but aged example of the Judas Tree, *Cercis siliquastrum*.

A few words, by way of conclusion, on the indoor departments. As may be imagined in such a place, a great many subjects are grown for house decoration. These are done well, both foliage and flowering, consisting of the usual type of plants used for such work, fifteen houses being devoted to their culture. There are some old vineries; the early one—at the time of our visit—was in "cutting," and consisted chiefly of Black Hamburg, in capital condition. A second early vinery was showing a splendid crop of fruit, all thinned and swelling well; and a later house looking well for an excellent crop. *B.* [Several illustrations of the historic trees at Fulham Palace were given in our volume for 1879, vol. xi.]

NEW OR NOTEWORTHY PLANTS.

CYPRIPEDIUM NITIDISSIMUM ×, n. *hyb.*, *Angl.*
(SELENIPEDIUM NITIDISSIMUM.)

ARE you a determined foe to hybrids? Then try to see the grand novelty just raised by Mr. Norman C. Cookson, Oakwood, Wylam-on-Tyne. It is a *Cypripedium*, whose parents are *Cypripedium Warszewiczii* (*Selenipedium Warszewiczii caudatum* roseum, not *Cypripedium caudatum*, Lindl., in *Paxton's Flower Garden*, which is the genuine caudatum, a variety of which is my *Wallisii* as it appears), and *C. conchiferum*.

It has been compared with *Cypripedium grande*—the dimensions, indeed, are the same, but the leaf is much narrower, and the flower is, *me judice*, quite distinct. Sepals broader, lightest whitish-ochre with numerous yellowish ultimately brown (always?) nerves. Tails apparently longer, yellowish in the centre downwards, still they get narrower when they become brown. There are two marginal brown lines at the superior part, and very short fine hairs on the upper border. The lip is longish, and the lateral extensions over the sac are remarkably smaller than in *Cypripedium grande*. The growth itself is as if varnished, brown with a central green stripe in the middle, pallid underneath and with translucent spots towards the base. The involved lobes of the lip are sulphur coloured with fine cinnamon spots. This is very effective. The two extensions are blunt, low, brown, small, staminode triangular, brown, with indian-purple hairs behind. Apiculus of staminode very strong, bent underneath. The stalked ovaries are very much longer than the spathaceous acute bracts. The inflorescence at hand has two immense flowers and a bud. What may not an older plant show!

The leaf is 1½ foot long by 1½ inch wide, strongly keeled underneath on the mid-line. It is a great novelty. *H. G. Rehb. f.*

CATTELEYA LABIATA MOSSIE (Lindl.), var. PEETERSII (André)—CATTELEYA PEETERSII, André, *Rev. Hort.*, 1885, 271.

This is a grand thing! It is quite distinct from any of those striped *Mossies* which have appeared lately several times. The flower is of a very warm dark lilac-purple colour. The anterior disc of the lip has numerous confluent much darker lines. Light purple oblique lines run over the side lacinia. There is a small space of lightish yellow on each side between the lines of the anterior "disc." It flowered first in 1883. It was

exhibited in 1885 at Paris, when M. André described the plant. It arrived with C. Mossie. The leaves are quite distinct, very showy, hard, light green, with very dark green spots. The pseudobulbs even are now reddish. It was kindly sent me, as the name implies, by Mr. A. A. Peeters, 58, Chaussee de Forest, 58, St. Gilles, Bruxelles. *H. G. Rehb. f.*

PHALÆNOPSIS SUMATRANA var. KIMBALLIANA, n. var.

This is an unusually fine variety of *Phalænopsis sumatrana*. Sepals and petals rather broad, bright yellow, with red transverse bands. Lip light ochre-coloured; callus of the side lacinia (one on each side) orange, keel at the base of the mid lacinia well developed. Hairs on the anterior part of the lip uncommonly few. *P. fasciata* is similar, but very distinct in the details of the lip. A fresh importation of Mr. F. Sander, at whose wish it is dedicated—and with great pleasure on my part—to the really excellent American orchidist, Mr. W. J. Kimball, Rochester, New York. *H. G. Rehb. f.*

MEGACALINIUM SCABERULUM, Rolfe, n. sp.

Megacalinium is a curious little genus, in which the rachis is enlarged and much flattened laterally, the flowers being seated in a row on either side, the whole having a very singular appearance. The flowers are much like those of *Bulbophyllum*, in which it is sometimes merged, the lip oscillating up and down on a slender elastic base. Eleven species have been described, all but one from tropical Africa, the majority western, the single extra-tropical one being *M. Sandersoni*, Hook. f., from Natal. A second extra-tropical species has now appeared, having been imported from Pondoland, and grown by Mr. Tillett from whom the specimen was received.

It is a small plant with creeping rhizomes, tetragonal ovoid pseudobulbs, each with a pair of elliptical-oblong leaves, 2 inches or more long, and an erect inflorescence about twice this height. The peduncle bears about four sheathing bracts, the upper half being flattened, ¼ inch broad, dull whitish-green densely spotted and marbled with dusky purple, and with seven or eight flowers on either side, of a dull purple colour, the base of the sepals being whitish-green with purple spots. The sepals outside are minutely papillose, giving a roughish surface—hence the name. The dorsal sepal is narrowly lanceolate, linear, acute, fleshy, 4–4½ lin. long, the lateral sepals shorter, falcate, with broadly ovate base, and narrowly acuminate acute apex. The petals are falcate, reflexed, very narrowly linear acute, 2 lin. long. The shorter lip is sharply reflexed, the basal half broadly suborbicular, then rapidly narrowed into a broadly linear, obtuse apex. This upper half is strongly grooved inside, while a double keel outside extends to near the base. The very short column has a pair of broad fleshy wings which terminate as a pair of short obtuse teeth, besides which is another pair of triangular acute teeth at the apex of the column. Africa is not yet exhausted of its novelties. *R. A. Rolfe.*

CYPRIPEDIUM × ATYS, n. *hyb.*

Among the collection of hybrids of the late Dr. Harris, of Lamberhurst, Kent, a somewhat curious *Cypripedium* has recently flowered, which may be distinguished as above. The collection named has been acquired by Messrs. James Veitch & Sons, of Chelsea, but unfortunately the records of parentage, have either been lost or not kept with the plants. The flower presents but slight differences from *C. venustum*, and even these are very difficult to define—perhaps a little more colour towards the apex of the petals, and a few other slight modifications. But the leaves are altogether different from those of typical *venustum*, and very closely resemble *C. Hookera* or *C. Bullenianum*. It has therefore been considered as a probable hybrid between *C. venustum* and *C. Hookera*, which seems not unlikely. Its hybrid character is scarcely open to question, and the characters it presents agree more with those two species than with any other, as far as I am able to see. It is unfortunate that the parentage of so many

hybrids should be lost in this manner, although in many cases it is possible to give approximately correct guesses as to parentage. *R. A. Rolfe.*

THE BULB GARDENS OF HAARLEM.

(Continued from p. 686, vol. iii., 3rd ser.)

HARDY FLOWERS FROM C. G. VAN TUBERGEN, JUN., SWANENBURG.—I sent a few notes some time ago about the hardy plants in Messrs. Tubergen's nursery. Since that time they have sent me various gatherings of hardy flowers. They write, June 24:—"Hyacinths and Tulips are lifted, and the bulb gardens are very bare of flower, but the hardy plant garden is quite an oasis among the bulb gardens." I wondered at the time how it was that so many different classes of flowers could be successfully cultivated in their loose sandy soil; but I am now informed that specially prepared beds of suitable soil are made up for the various classes of plants, and the examples of hardy flowers sent show how well they are grown. Something like a hundred varieties of *Iris hispanica* (the small bulbous Spanish *Iris*), and also the large bulbous *Iris*, usually termed the English *Iris*, were sent. Most of the English *Iris* blooms came in the bud state, and they expand their exquisitely tinted petals in water as freely as they do on the plants, the colours being more delicate; they were very varied in colour—white, blush, lavender, rose, blue, purple, deepest violet-purple, and even crimson, streaked and blotched in endless variety. No Orchids are more delicately beautiful. Such flowers, that can be purchased at two or three shillings per dozen, should be planted in every garden. Nearly a hundred spikes of *Ixias*, the flowers of very large size, and the colours of the most varied kind, with the leaves of a deep green colour to the tips, testify how well they grow in the prepared soil.

Of *Lilium Thunbergianum* four very distinct varieties were sent; the prettiest one is Prince of Orange, apricot colour; an unnamed semi-double form was also very striking. *L. pomponium*, like a large form of *tenuifolium*, very elegant. *L. monadelphum Szovitzianum* (*Colchicum*)—this is one of the most handsome of garden Lilies, and produced as many as eight flowers on a spike. *L. columbianum* (the Oregon Lily) is a very pretty little species with rich orange flowers freely spotted. The ordinary *L. Martagon*, with a very long spike, and the pure white form, was also vigorous and very charming. Amongst the smallest flowered Lilies were the orange-scarlet *L. carniolicum*, *L. tenuifolium*, and *L. pulchellum*, quite scarlet; they are very charming at this season.

Brodiaea coccinea, of a rich magenta-crimson, with the segments of the mouth pale green, are in marked contrast to *B. congesta*, two flower-heads of which are also sent, the flowers of a pretty clear lilac colour.

Hardy Orchids are represented by varieties of *Orchis maculata*, slender spikes of delicate pale pink flowers of *Gymnadenia odoratissima*, and the curious *Listera ovata*, besides a noble growth of the best of all hardy Orchises, *Cypripedium spectabile*, with its lovely white and rose flowers. *Allium azureum*, a very pretty Siberian species, with quite globular heads of decided blue flowers. *Triteleia laxa maxima* is quite a large form of this species, and a good large head of it was sent. *Crinum longifolium album* has pure white flowers with a greenish centre—a striking plant. A long spike of the clear yellow *Eremurus Bungei* was also sent; it is a Persian species, and one of the finest hardy garden plants introduced in recent years. This genus of Liliaceous plants contains some of the most noble examples of hardy flowering plants we have at present in cultivation. *Eremurus spectabilis* has been in cultivation for many years—in fact, since 1800. It is figured in the *Botanical Magazine*, t. 4870, where it is stated to be a native of Altaic Siberia, the Caucasus, Kooristan, Tauria, Scinde, &c. *E. robustus* is a more

recent introduction, and is one of the most noble of the species, throwing up spikes of peach-coloured flowers 9 to 10 feet in height. It was first flowered in Europe in 1871, in the Moscow Botanic Garden. It is also well figured in the *Botanical Magazine*, t. 6726, and in *Gartenflora*, 769. A spike of its flowers has been grown 4 feet in length. They must all become popular garden plants when more plentiful. *J. Douglas.*

ROSES.

The buds to be used for budding are in the best condition just about the time that the flower-shoot from which the buds are taken is bearing a fully open flower. It is best to use buds from shoots which have produced flowers. The bark of the stock must part freely from the wood, so that the bud may be placed in position without undue pressure. Insert the buds on standards as near the base of the shoots as is practicable, leaving on the leaf-stalk, and removing before insertion any woody tissue there may be, but in so doing be careful not to injure the base of the bud. Bind round with worsted or matting, but this last I cannot recommend as the best. I prefer not to head back the newly-budded shoots on standards, but tie the points down to the old wood. Two or three weeks after budding they should be examined closely, and ties loosened where necessary. Summer pruning of the Banksian Rose may now be done. Cut off all shoots that have flowered, as well as all weak and spindly sprays. All the strongest shoots should be retained, nailed in or tied to wire and allowed to grow till the end of the season. Treated thus, and growing on a wall with a south aspect, the Banksian will flower freely every year, and yet to see it in this condition is the exception. *Rosa rugosa* is now flowering with me. It is a charming subject for growing in the front of shrubbery borders; the flowers, which are single and of a deep rosy-pink in colour, together with its handsome foliage, render it a very striking object when growing amongst other dwarf shrubs. In the autumn months, when in fruit, it is also a conspicuous object. As soon as Austrian Brier and Persian Yellow have done flowering, the old flower-shoots and other superfluous wood should be cut off, laying in only the strongest shoots, which require to be well ripened to flower well the succeeding year. Look over the beds of dwarf Roses, cutting out all Manetti suckers whenever they appear. Remove all seed-pods as soon as the petals fall.

If it be desired to work up a stock of plants on their own roots, cuttings may be put in towards the end of the month; these should be taken off with a heel, and inserted in a good sandy compost in 5-inch pots, well drained, placing them round the sides of the pots, about a dozen in each; well water them overhead, and stand them in a shady place for a few days, then put them into a Cucumber or Melon frame, where successional crops are being grown, and where the cuttings will have the benefit of a little bottom-heat, and if not too hot the pots may be plunged to the rims and kept shaded from bright sunshine till they are rooted, at which period shift them singly into 3-inch pots, keeping them in the same place for a time, and later on harden off in cold frames. *J. Horsfield, Heytesbury, Wilts.*

GLOIRE DE MARGOTTIN.

The *Revue Horticole* publishes in the number for June 1 a coloured plate of a new Rose called Gloire de Margottin. This Rose is said to have had one mother, viz., Gloire des Rosomanes, but several fathers, among whom Goubault (Tea) was predominant. We suppose this means simply that the male parent is not exactly known, unless the Rose be like "Cerberus, three gentlemen in one," each with its own father. The buds, according to the figure, are elegant, the flowers large, very double, brilliant crimson-red, which does not turn violet as the flower fades. Our contemporary speaks highly of it as a cut flower for market purposes. It does not look like an exhibition Rose.

MUSHROOMS.

DURING the month of June just ended the soil of many of our meadows and pastures has been in that condition of warmth and moisture most favourable to the growth of outdoor Mushrooms, consequently a larger quantity has been gathered than has been known at this time of year for many seasons past. We were told last week by a gentleman that from his park had been gathered, for several days in succession, 26 bushels of Mushrooms per day, and that these had realised in the London market 12s. per bushel.

We were further informed—and this has also been found the case—on the estate of Sir J. B. Lawes, at Rothamsted, that Mushrooms grow most plentifully in pastures where the cattle had received a liberal supply of cotton-cake as food. This description of food is known to result in an extremely rich manure, as is shown by the following figures, taken from a table compiled by Sir J. B. Lawes and Dr. Gilbert, showing the manure value of 1 ton of decorticated cotton-cake after consumption as cattle-food:—

Total remaining for Manure:—

Nitrogen	...	...	...	...	143.5 lb.
Phosphoric acid	...	...	...	...	24.5 "
Potash	...	...	...	...	10.9 "

Formerly a good deal of mystery was supposed to attach to the growth of Mushrooms. Thus Shelley says—

"Agarics, fungi, mildew, and mould,
All start like mist from the wet ground cold."

But it is now well known that even the lowest order of plants do not start into life without some predisposing cause, or without something or other has caused decay when they arise. And by the study of the phenomena connected with the growth of these plants modern investigations have made them perfectly amenable to certain rules of artificial culture.

Scientific research has further demonstrated the fact that Mushrooms are extremely nitrogenous bodies, and that they absorb immense quantities of both nitrogen and carbon in their growth, the source of which, until recent years, was supposed to be the atmosphere, but which is now proved to be the organic nitrogen of the soil itself; consequently the removal of the Mushrooms from a pasture is accompanied by a considerable reduction in the amount of the organic nitrogen and carbon in the soil. Further, it has been proved in the Rothamsted investigations that the action of the mycelium of the fungi is not only to reduce the carbon in a greater proportion than the nitrogen of the soil, but to do so in a much greater degree in proportion to the amount assimilated, a portion of the carbon being doubtless exhaled as carbonic acid. *John J. Willis, Harpenden, July.*

VEGETABLE PRODUCTS IN CENTRAL AFRICA.

THE following notes on vegetable products in Central Africa are gathered from a recent report furnished to the Foreign Office. Rubber, it is stated, is now found in very small quantities, and, indeed, can scarcely be considered worthy of mention. This is undoubtedly owing to the destructive method adopted by the natives of extracting the juice. Under proper treatment rubber might have become a profitable export. At Mount Zomba *Landolphia florida* was found in large quantities, but the plant is now almost exterminated. Rubber from this species sold in Africa last year for 1s. 6d. per pound. The cultivation of rubber-yielding plants by Europeans appears to be attracting attention, and it is stated that a plant of *Ficus elastica* that had been introduced into a private garden had grown so well that it was intended to propagate it extensively. Indigo grows wild all along the slopes of Mount Zomba. It forms a large bush, and is perennial. Its growth is luxuriant, and its cultivation and manufacture might possibly be undertaken with advantage.

Of the Kombe (*Strophanthus*), which has attracted so much attention in this country of late, it is stated that during last year over 1100 lb. were exported from the districts around Zomba, which realised in the London market 9s. per pound. The following description of the plant and its uses is given:—" *Strophanthus* is considered the most powerful poison the natives possess. It is found at a low level, and, as far as can be gathered from personal observation and native sources, is not to be had on the high land. The supplies hitherto obtained have been drawn from the right bank of the River Shire below the Murchison Rapids. There is apparently more than one species, or, at least variety, the distinguishing feature being a much smaller pod and fewer seeds. At present information relative to these other varieties is scant. The *Strophanthus* is a strong climbing plant, and is always found in the vicinity of high trees on which it supports itself. The stem varies in diameter, but has an average of a few inches. It lies on the ground in folds, the branches supporting themselves on the nearest trees. The young branches have a rod-habit, and are in appearance not unlike Elder. The fruit grows in pairs, and has a peculiar appearance, very like a pair of immense horns hanging to a slender twig. The fruit begins to ripen in July and lasts till the end of September. The natives are quite ignorant of its age or how old a plant may be before it bears fruit. The native method of preparing the poison is very simple. They first deprive the seeds of their hairy appendages, and then pound them in a mortar until they have reduced them to pulp; a little water is then added. This is done by using the bark of a tree containing a gummy substance, which helps to keep the poison on the arrow in the event of its striking against a bone. The poison thus prepared is spread upon the arrow, and allowed to dry. Game wounded by arrows poisoned with *Strophanthus* dies quickly; the flesh is eaten without evil effect. The only precaution taken is to squeeze the juice of the Baobab bark in the wound made by the arrow, and this counteracts the evil effect of the poison. Buffalo and all smaller game are killed by this poison."

Though fibres are much in use amongst the natives, it is said to be doubtful whether those of native preparation would command a profitable sale in the home market. In the highlands of Zomba *Sansevieria longiflora* grows abundantly, and Likanga fibre is obtained from it. At lower elevations, such as Lake Shirwa; and *Livingstonia*, another species, is found. The fibre which is obtained from the leaf might be used for coarse manufactures, but proper machinery would be required to perfectly crush the leaves and obtain the fibre. The Buaze fibre (*Securidaca longipedunculata*) is used by the natives for stringing beads and for making twine; and a fibre known as Ntingo, said to be from a Tiliaceous plant, is much used by the fishermen on Lake Nyassa for making nets.

On the subject of Coffee culture it is stated that, promising as it seemed to be two years ago, the result hitherto obtained has not realised the expectations of the planters, and though the quality of the Coffee grown at Zomba has been established beyond doubt, still more experience is required before it can with certainty be said whether the cultivation of Coffee in those districts of Africa will be successful or not. The crops grown last year, both in the Mandala and Zomba districts, were to a great extent rendered unsaleable by the berry becoming diseased just before attaining maturity. The same disease is said to be showing itself again this year, the cause of which is partly attributed to allowing the trees to bear too profusely. In Coffee culture the difficulty of obtaining labour presents a serious obstacle. At the season when the planter requires a large supply of labour to keep down weeds and plant out new ground, the natives are all employed making their own gardens, and will not do other work.

Proprietors of small plantations may, with their few permanent hands, tide over the difficulty till workers can be obtained, but the question of labour

forms a serious consideration, and will tell greatly against any foreign enterprise on a large scale being successfully carried out in this country. Another drawback to the prospects of Coffee planters is the heavy transit freights to the coast. Until competition brings about a lower rate of charges, a serious barrier is opposed to the development of European enterprise in these territories.

In favour of the cultivation of Coffee it may be stated, that land with suitable soil can be purchased cheaply. Though unlimited acreage of good soil may not be obtainable, still sufficiently large areas to justify planters in establishing plantations can readily be got. At present about 90 acres of land in the Zomba and Blantyre districts are under Coffee cultivation, a considerable portion being new plantation formed this year. Sugar-cane grows well in the Zomba district, and is rich in saccharine matter. It is successfully cultivated and manufactured by Messrs. Buchanan Brothers, who have erected a sugar-mill on their estate. At present it would not pay to export sugar from Zomba, and as yet it has only found a local market with the Europeans in these districts. The natives, though very fond of sugar, have not shown any desire to purchase the manufactured article.

A few Tea plants have been introduced, and grow fairly well; but as yet nothing definite can be said of the prospects of Tea plantations. In the highlands it is doubtful whether the cultivation would ever prove successful, and the uncertainty of labour would render it a very precarious undertaking.

Cinchona has been introduced and shows every prospect of its cultivation being a success, from the fact that plants three years' old are now 6 feet high. It remains to be seen whether the quality of the bark will justify the planters' investment of capital, and whether the state of the market will offer encouragement. A small plantation of 1000 plants has been formed this season at Zomba.

TREES AND SHRUBS.

CLEMATIS BALEARICA.

AMONG the excellent illustrations of the *Flora of Spain and the Balearic Islands*, in course of publication by Prof. Willkomm, t. 122, recently published, is devoted to an excellent figure of this very elegant Clematis, which, though long since introduced into our gardens is not seen so often as its beauty warrants. This may arise from its being slightly tender on cold soils and in exposed situations, when it does not flower freely, but the elegantly cut foliage and its deep green colour render it most desirable in suitable situations. Prof. Willkomm retains the name *balearica* but considers it as a form of *C. cirrosa* with more deeply divided leaves. In the same fascicle is figured a variety of *C. cirrosa* with the perianth segment thickly spotted with red. The plant is figured in the *Gardeners' Chronicle* in 1878, vol. ix., p. 501.

ZENOBIA PULVERULENTA.

Mr. Vertegans sends us blooms of this very beautiful hardy shrub. Though by no means new, it is not nearly so often grown as its merits warrant. The glaucous leaves and racemes of flowers, like those of Lily of the Valley on a large scale, are very ornamental. A figure of the plant will be found in our columns, July 28, 1883.

EMBOTHRIUM COCCINEUM.

In the grounds of Eastdon House, the residence of H. Waterfield, Esq., near Starcross, on the South Devon coast, with an eastern aspect, is growing one of the finest specimens of *Embothrium coccineum* I have ever seen. It is now about 12 feet high and the same in width, and for some time past has been full of bloom of a most exquisite vermilion colour. It has now stood eleven seasons outdoors perfectly healthy. The bed prepared for its reception, says Mr. Bach, the gardener, was half loam and peat. It seeds freely, but he has not been able to get any to germinate. P. P.

THE LEAVES OF TREES.

A feature common to the great majority of trees and shrubs, evergreen and deciduous, indigenous and exotic, representing, as they do, many families, is that the leaves borne on their stem and stronger branches are as large—generally larger—and, I believe, not less, but usually more numerous, than those borne on weaker shoots. This seems consistent with their more favoured position on the central and stronger sap channels; more favoured as to light, whereby they are presumably enabled, in accordance with the most modern physiological view, to assimilate while unfolding a greater quantity of nutrient matter, their ultimate size being determined by the amount. Briefly stated, the size of the leaves of such plants is, normally, in proportion to the volume of the shoot. But this rule is not unbroken. Nature would not be true to herself were she not occasionally phenomenal.

I have for many years, at intervals, been puzzling my brains to account physiologically for the comparatively small leaves borne on the stems or leader shoots of Firs (*Abies*), and, but in a less well-marked degree, of Spruces (*Picea*). The feature is, perhaps, best exemplified in the case of adolescent and doubtless also old trees of *Abies Lowiana*. Readers well acquainted with the tree will at once think of, if they cannot see, the long—up to 3 inches or more—rather broad, obtuse or emarginate leaves of the stronger branches. The stem leaves, on the contrary, are short, pointed, with the blade narrow, and in many cases irregular on the edges, or constricted, and all archedly incurved. These are excessively disproportionate to the leaves of all but the uppermost branches. The rule seems to be—the smaller the volume of the shoot, the greater the leaf surface. The smaller branches, wherever situated, are more or less overshadowed, seldom well favoured as to light. The volume of the stem-shoot would seem to be attained at the expense of the leaves. Either this, or the latter are exceedingly sensitive to light. A factor calculated to prejudicially affect the size of leaves is exposure, not so much to light—though this has a retarding effect—as to detrimental weather, as strong or chilly winds and rains; and it cannot be doubted that stem-leaves, in their elevated position, are specially subject to such influences. But the relative smallness of stem-leaves to those of the branches would seem to be generic; at least it may be said to be common—I will not say peculiar—to the genera *Abies* and *Picea*. This, however, in a specifically variable degree, the extreme culminating, as I have already remarked, in *Abies Lowiana*. *Geo. Syme, May 11.*

ORCHID NOTES AND GLEANINGS.

DENDROBIUM WARDIANUM.

AN illustration of a fine plant of this useful species is seen at fig. 1, which is a representation of the notable specimen exhibited at the Royal Horticultural Society's meeting on March 13 last at South Kensington. It was grown by Mr. East, gr. to F. Wigan, Esq., Clare Lane, East Sheen, and, when exhibited, was fully 4 feet in height, and, as may be seen, wonderfully full of flowers.

IONOPSIS PANICULATA.

This desirable species belongs to a small genus of epiphytal Orchids coming from Tropical America. The pseudobulbs are small; leaves lanceolate, about 4–6 inches long, from the axils of which erect flower-stalks issue bearing flowers. The colour of the flowers varies considerably in different plants, but is usually of a pretty bluish-white; the broad bilobed lip has a purple spot at its base. The flowers remain for a long time without fading, and, according to "Descourtiz" in Williams' *Orchid Manual*, they remain fresh in their native forests from September until the following May. Grown in small pans, suspended from the roof in the warm-house,

they do well. The species is to be seen in flower at the Vineyard Nurseries, Garston, F. Ashton.

BULBOPHYLLUM LOBBII.

With the exception of a few species the *Bulbophyllums* afford very few which are worthy the attention of the ordinary cultivator. The species under notice is perhaps the best; the flowers, which are solitary

HARDY PLANTS.

Callia palustris, FL.-PL.—Most persons are acquainted with the common Marsh Marigold, but not with the double form, which, however, is a plant deserving of a more extended cultivation in our gardens than it has at present. It is eminently adapted for growing at the base of rockeries, margins of

pagated by division, which should be done immediately after the flowering period or early in the autumn before the leaves die down.

MERENSIA SIBERICA.

This handsome hardy perennial is now flowering in the herbaceous border. As the specific name would lead one to infer, it is quite hardy, and on this account there need be no hesitation about growing it in northern counties or in exposed situations. The flowers are pale pink in a young state, changing to a beautiful porcelain-blue when fully expanded, and are produced on a loose, terminal, pendent cyme, which gives it a somewhat graceful appearance. The leaves are of a bluish-green tint, ovate, acuminate, the upper ones sessile, lower ones stalked: height of inflorescence about 15 inches, but in good soils would probably attain 2 feet, and as such would make a very good second or third-row plant in a mixed border. Although most at home in rather damp loamy soils it will do very well on a fairly well-drained south border, but in this case will have to be watered. The plant is easily increased by division either in spring or autumn.

ANEMONE VITIOLIA

at the present time is flowering profusely on the rockery here. The flowers are cross-shaped, about 1 inch across. Sepals white, forming a pleasing contrast to the pale lemon-coloured stamens, and are borne on stems about 15 inches high. It is scarcely adapted for rockeries on account of its creeping rootstocks, which spreads with much rapidity when in a favourable soil; but for planting along the sides of woodland walks, or in shady nooks and corners amongst hardy Ferns, nothing is more suitable, and in flowering it follows closely upon those earlier *A. apennina* and *A. ranunculoides*. A light well drained soil of poor character, with partial shade overhead, will be found to suit it.

A. SYLVESTRIS.

In this we have a species that ought to be grown on all rockeries where choice subjects are in request. The flowers are of a more pure white than the above named, and are more than twice the size, and the plant grows from 9 to 12 inches in height. It will be found useful for cutting purposes, being equal in appearance to *A. japonica alba*. A deep, rich, sandy loam is what it delights in, but will also grow well in a chalky soil, with a little peat added thereto, and may be increased by dividing the rootstock early in the spring.

HIERACIUM AURANTIACUM.

In this we have an extremely pretty Composite—one that ought to find a place in all collections of hardy plants, not only on account of its freedom in flowering, but by reason of its being so distinct amongst herbaceous subjects; and in addition to this it will be found not at all fastidious as to soil or situation. The flowers are of a deep orange-scarlet in colour, and are borne on stems from 12 to 18 inches high, in terminal fastigate panicles, with individual flowers about an inch in diameter, and which will be at their best from about the present time for some few weeks to come. Unlike many good things, it is not slow to increase, and may be freely raised from seed, and the old roots divided into single crowns, either in spring or autumn; indeed, after it has once become well established in a garden, the object will rather be to prevent undue increase, not that it will assume the character of a weed by any means.

TRADESCANTIA VIRGINICA ROSEA.

Although this has been in commerce some few years, it is, comparatively speaking, seldom met with in old gardens, and seems to be little known outside those places where the most select collections are grown. The flowers are of a beautiful rose colour, and in this respect only does it differ from the well-known *T. virginica*. It is equally free in flowering, and quite as useful in all other points, requiring similar treatment in regard to culture, and is increased by



FIG. 1. SPECIMEN PLANT OF DENDROBIUM WARDIANUM. (SEE P. 8.)

and produced on radical scapes, are large, with sepals and petals of a deep tawny-yellow; the upper lip is spotted at the back with purple. It thrives well in sphagnum in pan or basket suspended from the roof in the warm house, and whilst growing requires a considerable amount of moisture. A plant is now flowering in the Vineyard Nurseries, Garston, F. A.

ROYAL GARDENS, KEW.—A refreshment pavilion is to be forthwith erected in the Royal Gardens, Kew, near the Pagoda.

ornamental water, or in undrained pieces of ground where only semi-aquatic species will grow, and further it will be found useful for cutting. The flowers are of a deep yellow, very double, and are produced on branched stalks from 9 to 12 inches high, with deep green orbicular leaves. As to soil and climate it does not appear to be at all fastidious so long as it can enjoy plenty of moisture at the roots, although the latter does not seem to be indispensable to it at all times, as we have it growing here in the herbaceous borders, but not so luxuriantly. It is pro-

division. A peaty loam suits it best, but it will grow in any fairly good garden soil, attaining a height of 2 feet, and flowers from now till the end of the summer.

LYCHNIS DIURNA PLENA.

This is a double form of our common wild flower which has found its way into gardens. It is a double Rose Campion, and its great recommendation centres in its long period of flowering—May to July—and in its prolific flowering propensity and usefulness for cutting purposes. As a second-row plant—growing to a height of 2 feet—it will be found an acquisition. Propagated by division.

GERANIUM PLATYPETALUM.

Perhaps this is one of the most showy and attractive Geraniums that one could wish to meet with. In the herbaceous border here it certainly is a picture just now, and will continue to be so for another month or so. The plant grows about 2 feet high; the flowers are borne in profusion, and in general appearance resembles *G. pratense*. The colour is rich violet-blue, the inner surface of the petals being veined with dark purple lines. A well-drained and poor calcareous soil suits it very well, and the roots may be divided early in the spring; and before flowering the plants should be staked and tied, as else the wind will probably break them down.

CYNOGLOSSUM MONTANUM.

This, the Hound's-tongue, is a British plant, not unfrequently met with in its wild state, and worthy of cultivation in gardens. The flowers are borne on stems of from 15 to 18 inches high, and are produced in drooping or pendent racemes, and are of a deep bluish-purple tinge. It may be raised from seed sown early in the autumn or the following spring, and treated as ordinary biennials, and should be grown in a light, well-drained soil. *J. Horsfield, Heytesbury, Wilts.*

FOREST PRODUCE OF BORDEAUX.

The British Consul at Bordeaux, reporting on the forests of his consular district, says that the Pine forests cover about one-third of the Department of the Gironde, and consist almost entirely of the *pin maritime* (*Pinus Pinaster*), which have to a great extent been planted in recent times in the Landes district, the soil there being unadapted to any other kind of cultivation. The two chief products obtained from these forests, viz., wood and resin, have now become an important, and in some instances the sole source of revenue of the inhabitants of those districts.

In the parts distant from towns and other inhabited places it is the production of resin which is principally resorted to, whilst in others which are nearer to Bordeaux, or other ports of shipment, or to means of transportation, the production of pit props, railway sleepers, telegraph poles, and wood for fuel, forms the chief business.

The collection of resin affords a living to a large number of the very poorest persons, and the recent decline in the exportation of this article from Bordeaux—which about twenty years ago was very extensive—has, therefore, been a great misfortune to the inhabitants of some parts of the Landes districts. This decline has been caused by the annually increasing competition of the United States of America, which country, since the conclusion of the Civil War, has become the chief exporter of resin to London, Hamburg, and Antwerp, to the almost entire exclusion of Bordeaux, which used formerly to send considerable shipments to the ports mentioned.

PINE OIL.

A new kind of oil under this name is now made from the refuse of resin after the same has been employed in making turpentine. This Pine oil is used at Bordeaux in some private houses as a lighting material, and burns very brightly; it is cheaper

than refined petroleum, and free from explosive properties. The Pine trees do not appear to suffer from the extraction of the resin, providing it is done carefully; indeed, it is stated that the wood of such trees is better fitted for certain purposes, such as paper-making, and for making pyroigneous acids, than when the resin is not extracted.

Comparatively few other trees of any height besides Pines are to be met with in this Department excepting in private parks and gardens; amongst these kinds the Oak and Elm are the most common. Oaks are grown in considerable quantities all over the country for fuel in private houses at Bordeaux and elsewhere, for in spite of coal being less expensive, it is but little used for heating purposes. Small sized Acacias and one kind of Willow are grown largely for props for the Vines, and two other kinds of Willow, *Salix viminalis* and *S. vitellina*, are cultivated—the former for use in basket-making, and the latter for making barrel hoops. Both kinds are exported to the United Kingdom; barrel hoops from this district especially are much in demand in Scotch ports engaged in the herring trade.

MARKET GARDENING.

"THE CREWE," KENILWORTH.

OCCASIONAL brief paragraphs referring to Strawberries or Mushrooms have suggested to the public that Kenilworth is developing an important gardening industry. Probably few are aware, however, of the extent to which fruit and vegetables are grown for sale in this neighbourhood, or of the perfection to which market gardening has been brought. It is not too much to say, that in recent years, the market gardening business has been revolutionised, great skill and intelligence having been devoted to the raising of garden produce, and railway companies have, generally speaking, applied themselves to the task of conveying perishable commodities all over the country with greater rapidity than formerly. Probably the purchaser at Manchester of a pound of Mushrooms would be surprised to learn that but a few hours previously the edible was growing a hundred miles away; and a similar customer in Birmingham would be not a little startled were he told that but an hour previously his purchases were growing in fields near to the Castle ruins at Kenilworth.

Villiers Hill, on which "The Crewe" is situated, was formerly a part of the domains of the Earl of Clarendon, but it was a few years ago bought by Mr. C. F. Treplin, of Wootton Court—where, by the way, is one of the finest collections of Conifers to be seen in the Midlands. Situate about a mile from Kenilworth Station it is approached through a charming country road running into what is known as Glasshouse Lane, and from this lane an occupation road leads through a couple of fields, after passing the first of which the market garden ground is observed. Immediately on passing the second gate the cart-road is perceived to be lined with Mushroom hills. Remembering the character of some of the kinds of fungi which grow even in the Midlands the visitor may well be wary; but the field being freely spotted with these white domes suggests that, early in the season as it is, these must also be Mushrooms. Mr. Murdoch, the market garden manager, is an experienced horticulturist who has been with Mr. Treplin seventeen years, having laid out the grounds and plantation at Wootton Court, and the state of "The Crewe" gardens bears abundant testimony to his ability and good management.

Mushrooms are grown likewise in a long, low shed, in which, by means of a little heat afforded by a flue, a supply is obtained in the winter. The beds, which are raised to the height of several feet, were freely spotted with "buttons," though a large quantity had been picked during the day. Barns and other out-buildings are filled with numerous other beds in like condition and in almost every conceivable situation, even some old cowpens being utilised for Mushroom culture. In the greenhouses are to be seen some

Tomatos of splendid size and colour. In another house Cucumbers hang in plenty, and in the vineries the Vines give promise of an abundant supply of fruit. The cut flower business is an important department at "The Crewe," and among the subjects grown is a *Maréchal Niel* Rose, from which a thousand choice blooms were cut in Easter week.

While other farmers have been failing, financially speaking, in ordinary agricultural pursuits, Mr. Treplin has turned to fruit farming apparently with great success. Though the distance from the railway station is somewhat of a drawback, the situation of this flower, fruit, and Mushroom farm is almost all that could be desired, and the area of land under cultivation is being extended. The markets at Birmingham, Coventry, and Manchester draw from this source large supplies. Last week of Mushrooms alone an average of 100 lb. a day was sent off, with an extra 100 lb. on Saturday, and on Monday last over 270 lb. were consigned to different dealers, a large quantity being consigned to Manchester by the night trains. The Mushroom business is now at its full, being this year remarkably early—the atmospheric and other conditions having been so favourable as to have advanced the season for meadow Mushrooms by six or eight weeks.

Kenilworth has acquired a reputation recently for Strawberries, a tremendous quantity having for some years been sent to market. Of the 21 acres of gardens at "The Crewe" 8 acres are appropriated to Strawberry beds, and last year during the season as many as 1000 lb. a day on an average were picked. This year the general supply may not be so large—in fact, it is expected to be under an average year for quantity. Owing to the extraordinary drought of last year the plants did not ripen their crowns. There are consequently fewer flower-spikes, but it is some consolation to know that the quality will probably be all that could be desired; the plants look healthy and strong, and there are hopes of a fair crop of very fine fruit.

A plantation of Cherry trees, an acre in extent, was noted; as also a very fine plantation of Currant bushes. Plums and stone fruit generally is expected to be a comparative failure. In this connection, however, Mr. Murdoch has some cause for satisfaction, and he is not indisposed to refer to it. It is generally considered to be prudent to plant stone-fruit trees in low situations; Mr. Murdoch, however, some time ago planted trees on 30 acres of upland—the situation being considerably elevated. The idea was condemned—it was generally believed that he was making a great mistake, and it was prophesied that the Plum trees especially would never do any good. It is a remarkable fact, however, that this orchard has enjoyed an almost total immunity from blight, the trees having been slightly touched. On this hill the trees are laden with heavy crops of fruit, healthy, and bright-looking—a complete contrast to the state of the trees in sheltered situations. Large quantities of Cucumbers are grown at Kenilworth—one gardener making them a specialty. *From the "Coventry Herald and Free Press."*

NURSERY NOTES.

ORCHIDS AT MESSRS. HUGH LOW & CO.'S, CLAPTON.

THAT latest novelty, *Cypripedium bellatulum*, illustrated at p. 747 of our last volume, may, at the present time, be said to be the great attraction at the Clapton Nurseries, the plant being a lucky introduction of this firm. Six large houses are entirely filled with established *Cypripediums*, and four more are in the course of filling with more recently introduced species, such as *C. Godefroye*; but among the whole of the numerous kinds in flower none are so noticeable as *C. bellatulum*, a great quantity of which is in bloom, and among which some new and handsome varieties are to be found; one has already been certificated as *C. b. roseum*, and now there appear others with pale yellow ground, and one with ivory-

white flowers blotched with pale pink. As a new plant *C. bellatulum* is undoubtedly the plant of the year, as far as the present time. Among the *Cypripediums*, a houseful of *C. Lawrenceanum* gives a great show of bloom; a large quantity of *C. Sanderianum* exhibits that fine plant; and *C. Argus*, *C. cilolare*, *C. Stonei*, *C. Lowii*, *C. Veitchii*, *C. concolor* Regnierii, *C. Parishii*, and several forms of *C. barbatum*, of *C. b. nevium* is the best, are also in flower.

The *Cattleyas* and *Lælias* seem to improve in vigour and condition here every year. So many houses are filled with them, that it is no light matter to go the full round. Luckily for the visitor, the best of those which are in bloom are brought to the ends of the houses. The Mossia-house exhibits some fine forms, distinguished by their broad, open, and richly-coloured labellum. Some handsome forms in the way of *C. M. aurantiaca*, with orange-coloured throats; and *C. M. Reineckiana*, with white or pearly-tinted petals, are also very attractive. *Cattleya Mendelii* also give a grand display; some plants have pure white petals, with only a rose-coloured mark on the labellum; some white, with rich carmine lips; and some have large pale rose flowers, with large and frilled crimson labellums, like that of *C. M. Rothschildiana*. The variable *Cattleya Gaskelliana*, with its fine fragrant flowers, gives in a good importation varieties which resemble almost all others of the large-flowered *Cattleyas*. In all importations, however, the bulk of the varieties are pale, which makes the more intense-coloured forms of this section of more value than similar forms of *C. Trianae*. Messrs. Low have two superb varieties of *C. Gaskelliana* which closely resemble fine forms of *C. exoniensis* X, so richly coloured are their labellums; another is almost identical with a well-grown autumn-flowering *C. labiata*, and a fourth has large white flowers with the barest suspicion of a pearly tint over them—a very beautiful form. Other varieties appear with the mottled lip of *C. Mossiae*, and, indeed, innumerable other odd and pretty variations.

Many *C. gigas*, some *Lælia purpurata*, *Cattleya superba*, and other showy Brazilian plants, are in bloom in the intermediate-houses; and the *Odontoglossum*-houses have sufficient plants in bloom to show the excellent quality of *O. crispum* and *O. Pescatorei*, which have yielded such fine hybrids.

Vandas, *Aërides*, *Angraecums*, *Saccolabiums*, &c., are grown in great quantities; among them *Vanda Amesiana*, which has tall spikes of rosy flowers, almost identical in appearance to those of *Phalaenopsis Lowii*, may be said to be the best new plant. *Vanda teres*, *Saccolabium Blumei*, and others are in bloom; and among the houses of well-grown *Phalaenopsis* the new paper-white *P. gloriosa* stands out very distinctly among good sprays of *P. Sanderiana*, *P. amabilis*, *P. grandiflora*, *P. Schilleriana*, and *P. Luddemanniana superba*.

The *Dendrobe*-houses have hundreds of well-flowered plants of the charming *D. Bensonæ*, *D. Parishii*, *D. rhodopterygium*, *D. Dalhousieanum*, *D. cambridgeanum*, *D. suavissimum*, *D. hercoglossum*, *D. triadenium*, *D. crystallinum*, *D. transparens*, &c. The *Masdevallias* have a fine show of varieties of *M. Harryana*, exhibiting very fine forms, especially among the scarlet and crimson colours. With them *M. racemosa*, *M. ionocharis*, and other odd species are in bloom, and in other cool houses *Lycastes*, *Oncidium*s, *Sophronites*, &c., have many things in flower.

ORCHIDS AT MESSRS. VEITCH'S, CHELSEA.

The English raised hybrids become more numerous and interesting year by year, and seldom can one visit the nurseries without finding something to admire or something instructive. One of the most remarkable hybrid *Dendrobiums* is now in flower, viz., *D. porphyrogastrum* X. The sepals and petals are pale pink, the lip rose-purple. The flowers are not of a large size, considering it is a cross between *D. Huttoni* and *D. Dalhousieanum*. With it was another hybrid raised at Chelsea—*D. rhodostoma*, X

D. Huttoni X *D. sanguinolentum*. It is a very pretty thing, with white sepals and petals, and lip purplish tipped. The pretty *Thunia Veitchiana* was flowering very freely. It is quite an acquisition, combining, as it does, the characteristics of its parents—*T. Marshalliana* and *T. Bensonæ*. *Cypripedium Tautzianum* X was in flower. It is a distinct and pretty hybrid. The sepals are flushed with purple on a white ground. The lip is rosy-purple. It originated by crossing *C. barbatum* and *C. niveum*.

Many good varieties of *Cypripedium* were in flower, and it was observed that the best of them are hybrids raised in the nursery. *C. grande* X is the most striking of them. *C. Harrisianum superbum* is a fine form of this well-known hybrid; *C. supercilare ornatum* is quite distinct and handsome; *C. conchiferum* X is also a vigorous and striking hybrid; so also is *C. selligerum majus* X, a much superior form. In the *Cattleya*-house was found, although so late, a good display, comprising *C. Trianae Mendelii*, *C. Mossiae*, *C. Gaskelliana*, *C. gigas*, *C. Forbesii*, and *C. Schroderi*. The pretty little *Angraecum falcatum* was profusely covered with its pure white sweetly scented flowers. *Pholidota imbricata* is very curious, with its pendulous twisted spikes of brownish-coloured flowers. *Burlingtonia fragrans* is also very charming, the flowers sweet-scented, and pure white, the crest on the lip being yellow. *Broughtonia sanguinea* had also flowered freely, and amongst *Dendrobiums* one of the most lovely was *D. Bensonæ*, plants of which were flowering freely; its spikes of white flowers, which have a distinct blotch on the lip, are charming. Specimens of *D. Jamesianum* were very striking; *Cypripedium bellatulum* was observed in quantity and in good variety. For the last week in June we have rarely seen such a good display in these nurseries.

LIFTING AND STORING DAFFODILS.

I would like to say a few words upon this very important subject, at a time when those bulb growers who make Daffodils a specialty will be turning their thoughts in the direction of the subject of this note. It is no small matter—I speak from experience—and is as important as it is considerable.

Some little time since Mr. J. Walker, of Whitton, gave a very interesting paper on Daffodils generally, and in the course of his observations touched—though far too lightly—on the matter of lifting and storing them. As regards the lifting, I was under the impression, until I read Mr. Walker's remarks on the subject, that there was but one generally accepted opinion respecting them, viz., that they are best left undisturbed for several years. Nurserymen who grow these largely are compelled to set this dictum aside, and in many cases to lift their stocks annually, in order to secure a sufficiency of saleable bulbs. But if I read Mr. Walker's remarks aright I believe I am correct in concluding that his observations are intended to be for the well-being of the bulbs themselves, rather than the expense entailed by the operation. I confess, however, I cannot quite reconcile the following passages of the paper in question:—"It will be found that some varieties will require to be lifted every year, while others may remain in the same spot for a number of years, and do well;" and then follow the somewhat conflicting observation—"If it were not for the labour and expense it would entail, I would lift all my bulbs every year." It is to be regretted, in looking at the first quotation, that Mr. Walker, with his wide experience in these matters, had not named a few each of those kinds which are benefited by annual lifting, and also those that are benefited by being left alone. But taking into careful consideration Mr. Walker's reasons for not lifting annually, it reduces the weight of the first quotation to a minimum. In your issue of April 28, p. 524, Mr. Murphy, of Clonmel, in reference to this subject, asks, "Is the evidence in favour of lifting every year?" To which I reply, from an all-round point of view, Certainly not;

nor can I see that Mr. Walker's statement is sufficient proof that annual lifting is beneficial. The result of annually lifted stock is always different at a glance against those that have remained undisturbed for two or three years. There is a lack of vigour and natural boldness, and particularly is this noticeable in such things as *Ard Righ*, *spurius* varieties, the *bicolors* generally, *Emperor*, *obvallaris*, *ornatus*, *poeticus* pl., and many more. The kinds I have named I would never think of disturbing under three or four years at the least, and the last two will go on for some years longer, improving annually. We have had nothing finer this year than our *Horsfieldii*, which has not been disturbed for two seasons, while *Emperor* and *Empress* have produced magnificent blooms; the former still carrying foliage nearly 2½ feet long—a vigour to which annually planted stock is foreign: the same thing affecting in a corresponding degree a great number, if not all of them. Some weeks ago I took out a few "rogues" of *nobilis* and *obvallaris*, the former having been in the ground three years, and the latter four; the blossoms of the first-named were a credit to its title, and the latter I have never seen finer blooms; the stems, however, will furnish some idea of their great strength when left alone, many of these being upwards of 16 inches from the ground line to the point where the trumpet assumes a horizontal direction: against this our annually lifted stock of *N. obvallaris* rarely exceeds 10 inches high, the flowers being proportionately smaller. As a whole I think there are few which improve more by letting alone than the double sorts, and the invaluable *N. ornatus*. Two years since I planted a batch of the former which have not been disturbed since, the first season after planting they produced very few flowers, this year the number of blooms was increased considerably, still many went blind in the scape. This blindness will, I think, diminish annually, as I notice a good percentage came from the "breeders," and no doubt were from the offsets. I imagine the Continental growers dry this variety much in the sun, by the colour of the skins, and those who plant it largely from imported bulbs can tell how many blooms they get per 1000 bulbs in a very few seconds during the first two or three years. *Albicans*, the *cernuus* forms, *Sulphur* and *Orange Phoenix*, I would not hesitate leaving alone four or even five years—more if they had ample room when planted. Some years ago, when in charge of Mr. Latimer Clarke's garden at Sydenham—at which place a very extensive collection of hardy bulbs was then to be found—there existed some fine clumps of the best Daffodils, among other things; these had been planted many years in a prepared bed, and finer flowers I do not remember seeing of such as *Emperor*, *Empress*, and *bicolors* generally; *maximus* exceptionally fine, and near by *Iris cristata* bloomed regularly with remarkable freedom. On the whole, I fail to see what advantage it would be to lift annually, presuming the stock was not required for commercial purposes, while the labour item would be serious indeed.

In cases where lifting and planting are necessary, I would strongly urge upon all the necessity of early planting, as I feel convinced that the longer they are kept out of the soil the more they deteriorate. Only last week (June 15) we had a flower of *Emperor* expand from a bulb (one of five) planted in January; it was barely 6 inches high, the leaves about the same; surplus stock planted in November reached 10 inches high, whilst those left alone have attained a vigour of which this alone can boast. This experience points directly to deterioration as the result of lifting and keeping dry, and where deterioration follows the lifting in any bulbous plant, it certainly cannot add to its benefit.

Mr. Walker evidently has had experience in deterioration judging by his remarks on storing—evidence alone that a certain amount of stamina is lost by exposure to foreign conditions. I can give my fullest support to Mr. Walker's statement on storing, for nothing is more destructive than to place them in bulk and so cause them to sweat and become mildewed: no practice is deserving greater condemna-

tion, followed, as it is, by such disastrous consequences. Where shed-room is insufficient for placing them in after lifting (and where a few acres exist this invariably happens) it is a good plan to spread them upon a vacant piece of ground, and place some lights over them supported on pots or the like, and to cover the lights with bags or mats. Sheets of corrugated iron are very good for the purpose.

Thus placed, a current of air passes freely over them, and, being kept free from sun, their ripening will be all the more gradual—a state of things much to be desired; then by removing the covers and turning the bulbs twice weekly the business of drying may be effectually carried out. I am of opinion that scorching sun upon the bulbs as soon as they are out of the ground frequently causes them to go blind, and should be avoided. *E. Jenkins.*

FLORISTS' FLOWERS.

THE AZALEA.

WITH very little trouble these showy plants may be flowered for half the year, for the late flowering varieties will continue to flower, especially if the season be a late one, well into July. The earliest varieties ought now to have finished their growth, and as soon as the buds are set the plants should be placed out-of-doors and watered carefully. The main point to attend to is to get the plants started into vigorous growth as soon as they have passed out of bloom. This is done by placing them in a warm house, syringing the plants well daily, and shading from bright sunshine; they must not, however, be placed out-of-doors from a warm house without being gradually inured to the cooler atmosphere outside, but they should be taken into a greenhouse, the lights of which must be kept rather close for a few days, more air being admitted by degrees. If a house can be set apart for the plants they may be there treated to hothouse temperature till growth is formed, the temperature being subsequently altered to suit the plants.

The latest flowering plants may be grown on now in a moist atmosphere, but they will not require any artificial heat further than what may be obtained by shutting up the house early in the afternoon, and allowing the temperature to rise by sun-heat. When the house is shut up in the afternoon the shading should be removed at once, when the temperature will soon rise in hot summer weather to 85° or 90°, and if the plants are well syringed there will be no danger of their being injured by heat, for the moisture which condenses on the glass will prevent this.

THE AMARYLLIS.

These plants are still in active growth, and the careful cultivator will see that they are not injured by either too much or too little water. They are all the better for being kept in a stove at present, the house being shut up in the afternoon. Seedlings should now be growing freely, whether they are of one or two years old. Seeds which are now ripe should be sown at once, employing a little bottom-heat to start them, the seeds always vegetating best with the aid of the warmth and moisture obtained from fermenting materials. The heat should not be more than 80°, or the germ may be killed; in fact, I have seen seeds stewed by being sown in pots which were plunged over fermenting manure. That is an error which can easily be avoided by waiting until the violent heat subsides. The seeds soon vegetate, and after they have been above ground for ten days or so, the small plants may be pricked out, ten or twelve of them in a 6-inch pot. In hot weather, red-spider and thrips are very troublesome pests. Neither of them can be destroyed by fumigation, for tobacco-smoke does not destroy the spider, and the thrips fall down among the plunging material, soon to be up and feeding again amongst the leaves. Sponging the leaves with soft-soapy water seems to check them.

PELARGONIUMS.

There are few easily-grown plants better adapted to furnish the house with bright flowers at this season than the various types of the Pelargonium. We have in our greenhouse the best of the large-flowered show type, and a few of what are termed decorative. The last-named are the best for giving large quantities of flowers; and the others flower freely enough too, but the flowers are better formed, and of the richest and most varied colours. Then we have the small-flowered fancy type, the single and double zonals, and the Ivy-leaved Pelargoniums, both single and double forms. The double varieties of these are amongst the best of the recent novelties in the large genus Pelargonium. The large long-stalked trusses of rose, scarlet, purplish, and pink varieties are most useful for cutting and decoration in the house. These varieties may not be so graceful as some of the single ones, but they are very enduring, while the flowers of the single varieties soon fall to pieces. Besides these there is a mine of interest in the Cape species and their varieties. One which is most useful and free in flowering is *cucullatum* fl.-pl., with purplish double flowers lasting long in beauty; the good old Rollisson's Unique, tricolor, is a pretty little species, but it is rarely vigorous. The crimson species, *Schottii*, is very striking, as is also the *Echinatum* type. Those who once take up the culture of these Cape species do not care to give them up again. I have tried to cross some of them, but have not been very successful. Many persons leave the propagating of these plants until it is the time to cut down the whole collection in July and August; but the best plants are obtained from cuttings taken in May or June, and put in singly in 60's; they succeed best in this way. Success in growing them will depend upon the attention they receive; they should not be left in the small pots after they are well established, and care must be taken to keep them free from greenfly. Many persons looking through our collection of Pelargoniums say, "How do you manage to keep them so free from greenfly?" The only answer to this is, "Regular fumigations with tobacco up to the time the flowers begin to open." Afterwards it cannot be done, the tobacco smoke causing the blossoms to fall.

THE CHRYSANTHEMUM.

I allude to these because I have just now finished the final potting the whole of my collection. This should always be done by the middle of June, and if done much earlier the pots seem to get too full of roots, and the flowers do not possess high quality. This remark applies especially to pot plants, as they require to be kept steadily growing from very early in the year. The Chrysanthemum now receives great attention as an exhibition plant—greater, indeed, than it has ever previously received, and the Japanese varieties introduced have effected quite a revolution in the appearance of our exhibitions, and the quality of the flowers of the incurved section has improved; at any rate, their size has increased; yet I am obliged to confess that there is no improvement in the quality of the plants. They are either over-trained by having the shoots twisted into a form that it would be impossible for the plant to take naturally, or they are grown without any training at all, the most conspicuous part of the plants being the long naked stems. There is no reason why the plants should be trained into the form of a pancake, on the one hand, or be allowed to become long and lanky, on the other. To keep the leaves in a healthy green state on specimen plants up to the time they come into flower requires skilful, careful treatment, and it can only be done by using potting soil of a substantial holding kind and good quality—not too rich, as an excess of vigour is very undesirable. A steady, good firm growth is best, as then the plants may be stimulated after the buds set by the judicious use of manure-water. The system of training is of importance, and should be such that the plants preserve, as near as can be, their natural habit. If a plant is by nature of a tall-

growing habit, why should it be made to appear as a dwarf? The great point is to keep the foliage clean and healthy, else large well-formed flowers cannot result. One flower, large in size and well formed, is preferable to half a dozen below the medium size, which are the usual produce of plants which have lost half their leaves.

A species of aphid distinct from that usually found on Pelargoniums and allied plants attacks the young shoots and sadly cripples them. When the plants are in frames this pest can be killed by fumigation with tobacco-smoke—out-of-doors that is impossible; but the plants may be cleaned in two ways—they may be laid on their sides if they are too large to be dipped, and be syringed with soft-soapy water in which some tobacco-juice has been mixed, or the insect may be destroyed by dusting the tips of the shoots with tobacco-powder. The plants, whether specimens or not, should be placed in an open airy position, not a draughty one, but if possible where they are protected from the north and east winds. *J. Douglas.*

THE DELL, HYDE PARK.

[SEE SUPPLEMENTARY SHEET.]

AT one time the small park which abuts on the old Palace of Kensington contained much, if not all, that could be termed picturesque in that broad expanse of wood and glade called respectively Hyde Park and Kensington Gardens. At the present time, in so far as tree growth goes, and in the number, size, and age of the trees, and their disposition in natural looking groups and outlying specimens, the old gardens of Kensington afford the most satisfaction to the lover of sylvan scenery. Of late years, however, despite the havoc made by storms, considerable efforts have been made to add various features to the larger area—Hyde Park. Thus in the larger half of the Serpentine a projection has been formed and planted with shrubs and low trees—a doubtful experiment, as it destroys a fine bold sweep of water-washed bank, itself more effective than the now mutilated line. The kerb of granite round the Serpentine may have its utility, but it is an eyesore, and is less pleasing than a shore-line, water-fretted. The Dell, which we show in our Supplement this week, is a feature, very small certainly in extent, but one which is a great improvement on the bare steps of the overflow cascade from the Serpentine, bordered by equally bare rocks and common trees and shrubs.

In the early days of Her Majesty's reign, and for many years afterwards, the overflow water found its way by a muddy ditch to the mouth of a great tunnel, which conveyed the water under the high road at Albert Gate, and onward through Belgravia and Pimlico to the Thames. By widening the ditch and bordering it in a picturesque manner with masses of rock, shrubs, Iris, rushes, sedges, and other water-loving vegetation, its appearance has been quite altered, and what was once an ugly, swampy piece of ground has been made a "beauty spot." Water Lilies grow in the water, which is rarely stagnant, and water fowl add life to the scene.

In the summer time—when the view now given was taken—Musas, Cycads, Palms of various hardy species, and Dracenas, give a richer aspect to the vegetation which creeps up the sides of the embankment made across the valley to form the Serpentine.

FORESTRY.

"THE FOREST FLORA OF SOUTH AUSTRALIA."—The eighth part of this publication is before us, consisting of folio coloured plates, representative of the trees of the colony, with popular and technical descriptions, indications of use, &c. The plants figured in the present number are *Eucalyptus pyramiformis*, with large and beautiful pink flowers; *Acacia melanoxylon*, a handsome species, called Blackwood in South Australia, but Lightwood in Tasmania—a delightful illustration of the value of popular names; *Calli-*

stemon coccineus, a highly ornamental "bottle-brush," formerly more often seen in our conservatories than at present; *Exocarpus aphyllus*, and *Casuarina quadrivalvis*. The work is issued by Mr. Brown, the Conservator of South Australian Forests, and is very creditable to his industry and knowledge.

"*Forest Flora of Cochín China*."—M. Pierre's colossal undertaking has reached its 176th large folio plate; but that brings us no further than *Bombax* in *Malvaceæ*. The plates are crowded with detail, and the botanical descriptions are very carefully elaborated.

THE ALPINE GARDEN.

NOTES ON ALPINES.

Ranunculus pyrenaica.—In a recent number of the *Gardeners' Chronicle* Mr. Wolley Dod speaks of this pretty alpine. I have plants of this collected by myself in the Pyrenees, in various aspects. Have any of your correspondents been struck by the fact that this plant, when apparently absolutely dead from drought, has a singular power of recovery? Some of my plants, in a dry rockwork with due south exposure, during the last exceptionally warm dry summer, were shrivelled up, looking like bits of dry green flannel, and I gave them up for dead. Since the winter they have (like the *Anastatica*) swelled out and assumed their normal form of a spreading rosette of leaves, and they, moreover, bloomed early—in May—and with flowers of good size and form. Another plant I have planted in what I may call a miniature cave with a northerly exposure and moist soil, has now a rosette of leaves a foot across and has bloomed well although a month later than the plants in a drier and more sunny site.

Haberlea rhodopensis.—I do not find that this plant increases fast, in fact it is of extremely slow growth with me. My single plant bore three spikes of its pretty flowers last year, but this year I have not one.

After *Primula nivalis*, with its spotlessly white, dense heads of flowers, the gems this season have been, I think—

Edraianthus pumilio and its still more lovely congener, *E. serpyllifolius*, both of which seem to have enjoyed the prolonged drought. *E. dalmaticus* is not yet in bloom.

Ourisia coccinea has bloomed with me for the first time, and is a worthy rival of *Heuchera sanguinea*.

Campanula Allioni and *C. pulla*, *Æthionema coridifolium*, *Potentilla nitida*, *Rosa pyrenaica*, *Arnica montana*, *Erigeron aurantiacum*, and a host of Saxifragas make the rock garden at this season an intense pleasure to those who, like myself, appreciate the beauties of Nature rather than those of purely artificial gardening.

PRIMULA RUSAL.

In this we have quite a gem, resembling *P. Parryi*, but smaller. The stem is slightly puberulent; the leaves rather fleshy, oblanceolate, 2–5 inches long, and serrate. The flower-stalk is a span high, two to six flowered; the calyx mealy and reddish; the corolla deep-crimson-purple, with a distinct lemon-yellow eye. This plant, like *P. Parryi* and *P. suffrutescens*, loves a spot where the light is subdued by the margin of running water, or it will succeed fairly in an ordinary bog bed. *J. T.*

PLANTS AND THEIR CULTURE.

SPARMANNIA AFRICANA.—Plants which were cut back as they went out of bloom and have since broken into growth, will be benefited by being turned out of their pots, and as much of the old soil and roots removed as can be done with safety, repotting them in a loamy compost, putting them for a short time afterwards in a cool house; and if slight shade in bright weather and a moist atmosphere can be afforded them, this treatment will accelerate their progress, and as soon as a little new growth is made more air must be gradually given so as to prepare

them for exposure out-of-doors. Here they will make closer jointed shoots than when grown indoors during the summer. Young plants spring-struck should be attended to in the way of shifting, and when large enough be placed out-of-doors. The small plants are very hardy, and effective for arranging with small groups of plants, or for standing on the side stages of the greenhouse.

Eupatoriums.—Cuttings of these winter bloomers already rooted should be potted up, subsequently pinching the points out until the required bushy habit is obtained. If there be any deficiency of stock more cuttings may be still put in, and with the usual attention to shading, &c., they will soon root. A cool frame is a capital appliance in which to grow *E. riparium* and *E. Weinmannianum*, but *E. ianthinum* and *E. atro-rubens* do better where they can be accommodated with a few degrees more heat. The last two mentioned species are frequently seen under the name of *Hebeclinum*.

Eranthemums.—These plants may be conveniently divided into two groups—one grown for their foliage, the other for their flowers. It is of the latter I wish to speak. Perhaps no species is better known than pulchellum, the plant with flowers of a rich blue colour, and appearing in the winter. Young stock should be potted on, and placed in a light and airy house, with an intermediate temperature. One of the most continuous flowering species is the pure white eboracense; it has a compact and neatly branching habit, and if large pieces are put in as cuttings, they commence flowering soon after they become rooted, and are more or less in flower throughout the year. *E. Cooperi* is a neat-growing species, with prettily marked flowers; but perhaps the showiest species is *E. cinnabarinum*, which has long panicles of vermilion-coloured flowers, and which are produced in spring and early summer. This species, after flowering, should be pruned hard back; any of the shoots so cut off, which are suitable, may be put in as cuttings, and as soon as the old plants break they may be turned out of the pot, the ball reduced, and repotted. *E. Andersoni* and *E. hypocrateriforme* are likewise worthy of being grown for variety. All the species like an intermediate temperature, with a considerable amount of ventilation, and a rather free, light soil, frequently syringing them during their growth. *F. Ross, Pendell Court.*

FRUITS UNDER GLASS.

MELONS.—Maintain a dry, warm atmosphere in the house where the fruits are colouring. In dull weather this will have to be done by artificial heat; 75° to 80° is a suitable temperature during the day-time with air, and also at night. Plants which are swelling a heavy crop of fruit should be assisted with some weak stimulant each time that they are watered, but heavy waterings with strong manure-water should be avoided, as it tends to produce over-large fruit and loss of flavour. Continue to make fresh sowings once a fortnight.

Cucumbers in full bearing may be occasionally watered with weak manure-water, but a top-dressing with loam, leaf-mould, and well rotted manure, with an occasional slight sprinkling of Thomson's manure will do just as well to preserve the plants in vigour. Avoid cropping heavily, and sow seeds for a late autumn supply—this had better be done in some structure where artificial heat is available.

Pines.—Plants which are ripening their fruit should now receive more air, and the atmosphere be kept drier. Damp the paths and walls once a day, but do not syringe the plants overhead. Pay every attention to plants swelling their fruit, and do not allow them to become dry at the root, or, on the other hand, to be over-watered. Syringe slightly overhead at shutting-up-time all such plants, and well moisten all surfaces twice daily. If the day be very warm, damp down with a watering-pot and rose about 1 P.M.; allow the temperature to run up to 95° after the house has been closed for the day, but ventilate slightly by the top ventilators after 6 P.M. for the night. Remove all the gills from the base and crown of the fruits, and reduce the number of suckers on each plant to two. The plants which were rested during the past month should now have the temperature raised to induce them to start into fruit; water sparingly until such time as signs of starting are observed, but do not allow them to become so dry as was recommended for earlier started plants.

Succession plants which were potted in spring will have made good progress, and if all has gone well, their pots will be well filled with roots. Every care must be taken to keep them in a healthy moist state at the root, as the slightest check from over-dryness will cause them to start prematurely into fruit. Gently dew over the growing stock every afternoon, when the house is shut up, letting the temperature range from 70° to 75°, and but little artificial heat will be required to keep up this temperature, unless it be during dull days or cool nights, to keep up a circulation of air. When it is necessary to apply fire-heat, see that the heat in the apparatus has been turned off ere the sun falls on the house the next day.

Suckers potted in the spring will now be ready for shifting into their fruiting pots, and as they are potted they should be plunged in their proper division. This should have been thoroughly syringed all over with a strong mixture of petroleum and water, the wood and glass well scrubbed with a brush and soft-soap afterwards, and the walls washed with freshly slaked lime-wash into which some flowers of sulphur have been put. In placing the plants, 2 feet from centre to centre will be the proper distance apart for Queens, Enville's, and other moderate growers.

Suckers.—Towards the end of the month suckers may be put in from the general stock on the stools from which the early Pines have been cut. Although this is usually done it is preferable to be constantly putting a few suckers in as they become large enough. In potting suckers remove a few of the scaly leaves from the bottom sufficiently high to set free the embryo roots, which are of brown colour—but no higher. The bed into which these are to be plunged should receive some additional fermenting material to raise the bottom-heat to 90°, the inside having been cleaned previously. The suckers should be slightly damped overhead with a fine-rose watering-pot at shutting-up time, and shaded during the warmest part of the day if the weather is bright. *W. M. Baillie, Luton Hoo Gardens.*

THE HARDY FRUIT GARDEN.

THINNING. When Apricots, Peaches, and Nectarines have finished stoning the fruits should be finally thinned. Apricots, generally speaking, are rather a precarious crop, and when the flowers do set well many people are induced to allow the trees to carry too many fruits, exhausting the trees, and which then require the next season or two to recover. Leave the fruits a trifle closer together than is the rule with Peaches. Remove all badly situated fruits, and also those that are in contact with the wall nails, or else remove the nails, otherwise they will cause gumming. The large early Apricot always repays for being liberally thinned, and if the trees are kept well watered the fruits produced are equal in size to those of a Peach. After the thinning is completed give the borders a thorough soaking of water, to assist the fruits in swelling off, but when heavy rains have fallen this will not be necessary. Should the walls have fixed glass copings the border must be watered in any event.

Peaches and Nectarines must also be well thinned out, leaving the remaining ones well placed, exposed to the sun, and as evenly distributed over the tree as possible. The remarks as to the watering of Apricot borders apply here.

Netting.—The mid-season Strawberries, red and white Currants, and the later varieties of sweet Cherries should be netted over. Where Gooseberries and Currants are in demand late in the season as dessert fruits, spread some long straw or litter under the trees to prevent the fruit from being splashed with mud. A few trees should always be grown on a north wall for dessert fruits. On a north aspect Currants will hang in good condition till late in November. *A. Ward, Stoke Edith Gardens, Hereford.*

CARNATION R. H. ELLIOT.—Messrs. LAING & MATHER, Kelso, send us blooms of their new Carnation, which flowers freely at Kelso both in and out-of-doors. The flowers sent to us are fragrant, of good size, even petal, and very double. The ground-colour is a pale ochrey-yellow, freely striped with rose-coloured stripes, and the calyx is not split. We should give it a good place as a border Carnation.

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APPOINTMENTS FOR THE ENSUING WEEK.

MEETINGS.

- MONDAY, JULY 9—Chambre Syndicale of Ghent.
TUESDAY, JULY 10—Royal Horticultural Society: Science, Fruit, and Floral Committees.
THURSDAY, JULY 12—Edinburgh Botanic Society.

SHOWS.

- TUESDAY, JULY 10—Hewich, Twickenham, Gloucester, and Oxford.
WEDNESDAY, JULY 11—Glasgow and West of Scotland, Ealing, York Florists', Bedford, and Tunbridge Wells.
THURSDAY, JULY 12—Chiswick, Winchester, Birmingham, and Carlton in-Worship.
FRIDAY, JULY 13—New Brighton, Manchester, and Eltham.

SALES.

- MONDAY, JULY 9—Established Orchids, at Protheroe & Morris' Rooms.
TUESDAY, JULY 10—First portion of the Downside Collection of Orchids, on the premises, Downside, Leatherhead, by Messrs. Protheroe & Morris.
WEDNESDAY, JULY 11—Nursery Stock, at Messrs. Ewing & Co.'s Sea View Nurseries, Hants, by Messrs. Protheroe & Morris.

Why flowers are what they are.

THE majority—probably a large majority—of flower-lovers are content to admire flowers as they are, without troubling themselves with speculations as to the reason why and how the flowers have assumed the shapes in which we now see them. TOPSY's answer, "Spect they growed," represents the attitude of such folk. It is not necessary to point out how much such people lose, but it is, nevertheless, a matter for regret that so much intellectual pleasure, to say nothing of potential practical utility, is thus allowed to run to waste. Happily the waste has been very materially checked since the advent of the Darwinian era. Botany, which to many seemed a mere dry-as-dust sort of business, disfigured by a barbarous terminology and a sesquipedalian nomenclature, has been shown in its true light as a study which while capable of yielding the most refined pleasure, supplies excellent mental discipline and illustrates and explains many of the most profound phenomena of existence.

From such a point of view must be considered the Rev. GEORGE HENSLOW's recent work*, which is devoted to the con-

sideration of how and why flowers present the diversities of structure and appearance which give us so much delight. Mr. HENSLOW's natural aptitudes for the work he has undertaken have been very materially aided by the facilities offered him in his post as Secretary to the Scientific Committee of the Royal Horticultural Society. This work, then, may in a measure be set to the credit of the Society to which Mr. HENSLOW has for many years contributed efficient aid. The causes which have been influential in making flowers what they are, are referable to two in particular—hereditary endowment and external influence. No one can impugn the statement, that plants, like other living beings, are, in a large measure, what they are because their predecessors and progenitors were so also; a child inherits, in very varying extent, the characteristics of his father and of his mother, they of their predecessors, and so on: and so also with plants.

In addition to these hereditary endowments plants are subjected to external conditions—they are, like the rest of us, dependent on circumstances—on the "environment," as it is now the custom to call the aggregate effect of the circumstances. But in their time the parents must have been submitted to varying circumstances, and so on till the very beginning of things—a period utterly beyond human ken. Some suggestion, however, of things as they were in the beginning and their subsequent course is offered in the progress of each individual living organism, plant, or animal, in its passage from a speck of protoplasm (itself a highly complex unit), to the fully developed state.

And so it comes to pass that the thorough investigation of the life history of any one plant or animal, pursued with all the niceties of research which modern chemistry, modern microscopes, and other instruments afford, throws light upon the course of events and the history of living beings generally, from the most remote to the present time, and shows how they have been influenced and modified according to circumstances.

In the work before us, Professor HENSLOW passes in review the chief variations in the form of the flower in the so-called flowering plants, arranging them according to the number of their parts, their mutual relations, their isolation or association, their form, their colour, and so forth. All this has, of course, been done before, and may be read in any text-book. The novelty of Professor HENSLOW's treatise consists in the explanations he affords of these phenomena, and in the suggestions he offers as to the causes producing them. Whether the reader agree with the author's conclusions, or whether he dissent from them, is a matter of relatively little importance. It is of the greatest value to have the phenomena presented to us so clearly in a new light, and their discussion from a new point of view, can hardly fail to be of great value to botanical science, while it will afford an infinite source of interest to the reader. Given the organism, and accepted the idea of its tendency to change, Mr. HENSLOW sets himself to the task of inquiring what caused it to change. He is not content with saying that the tendency is innate; that it changes because it is an attribute of the creature to change, or any such meaningless formula, but he endeavours to penetrate the reason why. This reason he finds in the "environment." PALEY's notion, we all know, was, that these wonderful and "purposeful" structures were "designed," and designed, no doubt, they were, but in a much broader and wider sense than ever PALEY dreamt of. PALEY's

views were of necessity limited and contracted. His notions do not go beyond the idea of a watchmaker with the materials made to his hand and ignore the source of both the watchmaker and of the agencies and materials which the watchmaker must employ or by which he must be influenced. Mr. HENSLOW, as PALEY would have done, revolts from the idea that these structures could be the ultimate result of any number of accidental and apparently at first purposeless variations, and looks to the "environment" as affording a better clue to the source of variations. Of course the "environment" is as much the work of Supreme Intelligence as the creature; and Mr. HENSLOW attaches a wider significance to the "environment" than DARWIN, or, at least, than some of his followers did, and by so doing he will no doubt disarm the opposition, which otherwise might be raised to his views. The general idea is that the form of flowers, or at least of such as are fertilised by insects, is due to a process of selection operating in this wise: A flower varies in some minute particulars—why, is not explained; one or more of these variations prove to be beneficial to the plant by facilitating the visits of insects, and thus by insuring more perfect fertilisation; the tendency to vary in that particular direction is enhanced as time goes on, and the relation between insect and flower becomes more and more intimate. Mr. HENSLOW's view is different. For him, the insect itself brought about the variation, in the first instance, and the variation has been perpetuated ever since by the repeated action of the insect. Still we do not arrive at the cause of the tendency to vary. The insect is supposed to set this tendency in action, but it can hardly be surmised that it originated the tendency. Willows, on Darwinian principles, should be wind-fertilised, but assuredly they are largely visited by insects, although these insects have not yet, by their weight or other agency, caused any modification of the flower, so far as we know, nor have they—if the Willow be assumed, for the sake of argument, to be a degenerate form of some previously more complex plant—succeeded in arresting its degradation.

We heartily commend Mr. HENSLOW's book to the notice of our readers, as containing an excellent summary of our knowledge of the conformation of flowers as illustrated by their perfect condition, their mode of growth and development from the initial stages, and their intimate anatomical structure, as well as by their comparative relations. The last sentence in the book we may quote in full, as condensing the author's contention into a sentence:—

"Having once attracted insects to come regularly [for pollen or honey], then a multitudinous series of differentiations would follow. The corolla would, in all probability, be the first to issue out of the bracts, as being the next whorl to the stamens: and as a result of stimulus; other changes already described under the principles of variation, would follow by degrees or in different combinations, but in every case they would be due to the responsive action of the protoplasm, in consequence of the irritations set up by the weights, pressures, thrusts, tensions, &c., of the insect visitors.

"Thus, then, do I believe the whole floral world to have originated."

ROYAL HORTICULTURAL SOCIETY.—Mr. C. J. GRAHAME, Assistant Secretary, sends us the following announcement:—"By direction of the Marquis of SALISBURY, Sir JAMES FERGUSSON, Bart., M.P., writes to inform the Royal Horticultural Society that his Lordship has heard from the Austro-Hungarian

* *The Origin of Floral Structures through Insect and other Agencies.* KEGAN PAUL, TRUSCH & CO.



THE DELL, HYDE PARK, LONDON.

Ambassador that the Austrian Pomological Society is arranging a National Exhibition of Fruit to be held at Vienna under the patronage of H.I.H. the Archduke CHARLES LOUIS, from September 29 to October 7. Two sections of this exhibition will have an international character, namely, the section for fruit drying apparatus and that for machines and instruments used in cultivating and harvesting of fruit. Applications for space must be sent in on or before July 15, addressed to K. K. Oesterreichischen Pomologen-Verein, Leschwald, Graz." The Royal Horticultural Society daily expect to receive the programme of the Exhibition."

THE SCIENTIFIC COMMITTEE.—Two subjects of great interest and importance were brought before the last meeting, as will be seen in another column. Professor CHURCH detailed the results of his analyses in search of aluminium in plants, which he finds in Lycopodium, but not in Selaginella; so that the two genera are separated chemically, as well as morphologically. Moreover, while aluminium exists in the terrestrial species of Lycopods it is absent in those which grow removed from the soil upon trees. Some Tree Ferns are found to contain a very large percentage of aluminium in their ashes. Another remarkable communication was that of Mr. Plowright, in which he sent for exhibition the results of certain experiments on the "heteroicism" of certain fungi, in virtue of which the same species of fungus is found to exist in two totally different forms, on two totally different plants; so that if the life-history were not known it would be impossible to consider the two forms of fungus (*Ecidium* or *Cluster-cup* and *Puccinia* or *smut fungus*) as stages of the same plant. So long as the statement rested on observation only it was open to question, but when the matter is practically demonstrated, as in these cases, there is no room for further scepticism.

"KEW BULLETIN."—The June number contains articles on the manufacture of quinine in India, on a particular form of Job's Tears (*Coix lachryma*), in which the seeds are elongated and cylindrical, instead of spherical, as usual. The grain is not likely to be of economic value as a source of food, but seems destined to be used as an ornament instead of glass beads. Other articles are devoted to Rhea fibre, and to the establishment of a botanical station at Lagos.

THE GARDENERS' ORPHAN FUND.—The usual monthly meeting of the committee took place at the Caledonian Hotel, Adelphi, W.C., on the 29th ult., Mr. GEORGE DEAL presiding, there being, as is usual, a good attendance of members of the committee. The Honorary Secretary reported that the sum of £60 18s. had been paid in during the past week, and the balance at the bank was £597 9s. A letter was read from Mr. JOHN FRASER, resigning the office of Auditor, stating that he should be engaged at Chester for some days which would prevent him from auditing the accounts for the forthcoming Annual General Meeting. Mr. FRASER's resignation was accepted, and Mr. C. H. SHARMAN was requested to act in his place. The Honorary Secretary reported that he had obtained returns of sums collected by the eighty local secretaries up to the end of June, the aggregate amount being £380 13s. 8d., which was regarded as an extremely satisfactory result. The highest sum returned by any one local secretary was that from Mr. G. W. CUMMINS, local secretary for the Carshalton district, which amounts to £33 4s. The aggregate expenses of the local secretaries are surprisingly small. The remainder of the sitting was occupied with details of the forthcoming Annual General Meeting, Election, and Dinner.

ELECTION.—There seems to be some misconception in the minds of subscribers to the above fund as to the number of candidates they can vote for at the coming election. Some five shilling subscribers are under the impression they can give but one vote to any one candidate, instead of being able to give one vote each to any six of the ten candidates. Or if

any subscriber is desirous of securing the return of any particular candidate, he can give one vote to that one, and refrain from voting for any other; but no subscriber of five shillings can give six votes to any one candidate, as votes are not cumulative, as in the case of School Board elections. For a ten shilling subscription two votes each can be given to any six candidates, and each additional five shillings carries an additional vote.

HONOUR TO BRITISH HORTICULTURE.—Prince DE CHIMAN, Belgian Minister of Foreign Affairs, has forwarded, by order of H.M. the King of the BELGIANS, the insignia of Chevalier of the Order of Leopold to Dr. MAXWELL T. MASTERS, Editor of the *Gardeners' Chronicle*, and Vice-President of the Jury at the International Exhibition of Ghent, in April, 1888.

CONFERENCE OF FRUIT GROWERS.—Arrangements are being made for a Conference of Fruit Growers to be held at the Crystal Palace, Sydenham, on September 7 and 8, 1888, in conjunction with the great fruit show to be held on those dates. The object is to concentrate attention upon the importance of extending and improving the culture of fruit in this country, and to elucidate by the means of papers contributed by practical men, and by discussion, the most profitable methods of developing this industry. It is proposed that the questions to be discussed shall include the profitable culture of fruits for market and home supply, the packing, carriage, and sale of fruits, their economic importance and utilisation. The Directors of the Crystal Palace Company will afford every facility for the proposed Conference, and assist the promoters in rendering it of national utility. All communications should be addressed to Mr. WILLIAM EARLEY, Ilford; or to Mr. LEWIS CASTLE, Hotham House, South Wimbledon, who have consented to act as Honorary Secretaries to the Conference. The following committee has been formed to carry out the project, and a fuller programme will be published shortly:—

Committee.

(Members to whose names an asterisk is prefixed will constitute the Executive Committee, with power to add to their number.)

- W. Allan, Gunton Park Gardens, Norwich.
- J. Austen, Witley Court Gardens, Stourport.
- J. Bannerman, Blithfield Park Gardens, Rugeley.
- *E. J. Baillie, Woodbine, Upton Park, Chester.
- R. N. Brotherstone, Tynningham Gardens, Preston-kirk.
- H. Bennet, Shepperton, Walton-on-Thames.
- *G. Bunyard, Maidstone.
- R. E. O'Callaghan, 18, St. Bride Street, E.C.
- Stephen Castle, West Lynn Vineyard, King's Lynn.
- *J. Cheal, Crawley.
- W. Child, Croom Court Gardens, Severn Stoke, Worcester.
- A. Christie, Warwick Castle Gardens, Warwick.
- H. J. Clayton, Grimston Park, Tadcaster.
- W. Coleman, Eastnor Castle Gardens, Ledbury.
- W. Cole, Feltham.
- T. Coomber, The Hendre, Monmouth.
- J. Cranston, Hereford.
- G. W. Cummins, Grange Gardens, Carshalton.
- H. Cutbush, Highgate.
- E. W. Dance, Gosfield Hall, Halstead.
- J. Day, Galloway House, Garieston.
- *A. Dean, Bedford.
- R. Dean, Ealing.
- J. Dean, Titsey Park, Godstone.
- W. A. Dickson, Chester.
- W. H. Divers, Ketton Hall Gardens, Stourport.
- M. Dunn, Dalkeith Park Gardens, N.B.
- W. F. Emptage, Hawkswick Hall, St. Albans.
- P. W. Fairgrieve, Dunkeld House, Dunkeld, N.B.
- Farrance, Chadwell Heath.
- *S. Ford, Leonard's Lee Gardens, Horsham.
- Gleeson, Clumber Gardens, Workop.
- E. Gilman, Ingestre Hall Gardens, Stafford.
- J. H. Goodacre, Elvaston Castle Gardens, Derby.
- *J. Goldsmith, Kelsey Manor, Beckenham.
- *G. Gordon, 1, Stile Villas, Wellesley Road, Gunnersbury.
- E. Hall, Bolton Hall Gardens, Bedale.
- *W. G. Head, Crystal Palace.
- *J. Hudson, Gunnersbury House Gardens, Acton.

- W. Iggulden, Marston House Gardens, Frome.
- W. Ingram, Belvoir Castle Gardens, Grantham.
- W. J. Jeffries, Cirencester.
- *John Laing, Forest Hill.
- J. McIndoe, Hutton Hall Gardens, Gainsborough, Yorks.
- E. Molyneux, Swanmore Park Gardens, Bishop's Waltham.
- J. C. Mundell, Moor Park Gardens, Rickmansworth.
- R. Parker, Impney Gardens, Droitwich.
- William Paul, Waltham Cross.
- A. H. Pearson, Chilwell.
- C. Penny, Sandringham Gardens.
- *T. Francis Rivers, Sawbridgeworth.
- *C. Ross, Welford Park Gardens, Newbury.
- J. Sheppard, Wolverston Park Gardens, Ipswich.
- J. Smith, Mentmore Gardens, Leighton Buzzard.
- William Thompson & Sons, Clovenfords.
- J. C. Wheeler & Sons, Gloucester.
- C. Whitehead, J.P., Barming House, Maidstone.
- W. H. Wiskar, Borough Market.
- R. Veitch & Sons, Exeter.
- J. Udale, Elford Hall Gardens, Tamworth.

BOTANICAL MAGAZINE.—The July number of this veteran publication contains coloured figures and descriptions of the following plants:—

Macrotomia Benthani, t. 7003.—described as a stately plant, native of Western Himalaya. It is a hairy Echium-like herbaceous plant, with broadly lanceolate, ribbed hairy leaves and dense cylindrical spikes of numerous regular purplish flowers, each flower about an inch long.—Kew.

Asphodelus acaulis, t. 7004.—An Algerian species with tufted long linear leaves, and numerous flowers in a terminal corymb, each flower about 1½ inch long, pale pink.—Kew.

Illicium verum, Hook. f., t. 7005.—The Star Anise of China has up to this time been considered to be the seed-vessel of *I. anisatum*, Linn., *alias I. religiosum*, Siebold and Zuccarini; but is now shown to belong to a different species, to which Sir Joseph Hooker gives the name *I. verum*. Star Anise is used as a spice, and is employed to flavour liqueurs, such as Anisette.

Calogyne graminifolia, Parish and Rehb. f., t. 7006.—A species with ribbed pseudobulbs, linear leaves, racemose inflorescence, with starry white flowers, linear lanceolate segments, and a narrow lip, yellow, with reddish-brown stripes, and recurved at the tip.—Kew.

Cyperorchis elegans, t. 7007.—A Himalayan Orchid, without pseudobulbs, with distichous linear leaves and dense terminal stalked, many-flowered racemes. Each flower is about 1½ inch long, yellow, cylindric, with linear lanceolate segments, slightly spreading at the tips; lip three-lobed, lateral lobes erect, median lobe scarcely longer, retuse, disc of lip marked with two raised keels.—Kew.

THE "BOTANISCHE ZEITUNG."—Professor Count SOLMS-LAUBACH, who succeeds the lamented DE BARY in his Professorship at Strasburg, will also in future conduct the journal above mentioned.

VINE MILDEW (PERONOSPORA).—This must not be confounded with the Oidium which attacks the Vines, and which is kept in check by sulphur, the fungus in the present case being a mould closely allied to that causing the Potato disease. Sulphate of copper (blue vitriol) has been found very efficacious in combating it, or, rather, in preventing the germination of the spores (conidia). M. COIGNET, in the *Vigne Americaine*, recommends the use of a fine powder containing copper sulphate as preferable to liquid solutions, which necessitate nicety of manipulation, troublesome water-carriage and powerful spray pumps which readily get out of order—inconveniences which do not apply to the distribution of fine powder by means of bellows. M. COIGNET's powder consists of precipitated sulphate of lime (gypsum), which is made to take up 10 per cent. of a solution of copper-sulphate. The result is a powder infinitesimally finely divided, in which part of the copper is reduced to the state of oxide, which acts slowly, and part remains as sulphate, which acts quickly. We trust that our experimenters will try the effect of copper sulphate

in checking the Potato disease should it reappear. As the fungus is, to a great extent, concealed within the tissues of the tuber, haulm, or leaf, no application of this sort could be expected to kill the fungus outright; but its spread and diffusion might be checked as it is in the case of the Vine. To those who might raise an objection as to the possible injurious effect of the copper on human beings, it may be said that in the case of the Vine no poisonous properties have been noted in the Grape juice, which contains infinitesimally small proportions, or none at all, of copper. In the case of the Potato there would be no fear of poisoning from the tubers, and if it be said that chickens or pigs might receive injury from eating the haulm, it may be urged in reply that these animals should under no circumstances whatever be allowed to eat diseased haulm, and thus propagate the disease.

ROYAL BOTANIC SOCIETY.—Last Wednesday evening the annual Evening Fête of this Society passed off successfully; as, although the weather had been threatening and showery during the day, the evening was quite fine. About 10,000 visitors attended, and Messrs. L. D. BERRY & SON'S illuminations were as satisfactory as usual. Exhibits of table decorations were varied and numerous, and many fine bouquets, and arrangements of flowers for personal adornment, attracted much notice. Mr. W. PAUL, Waltham Cross, sent a fine bank of cut and pot Roses, and show Pelargoniums came from Mr. C. TURNER, Slough. Messrs. J. WATERER & SONS' Rhododendrons made a fine display; and Mrs. SOUTHAM showed specimens of her flowers dried in their natural colours.

THE ITALIAN EXHIBITION.—It is intended to hold periodical flower shows at this Exhibition. The first of these shows was held on Monday last, when a large gathering of plants and flowers was exhibited. Messrs. KELWAY, of Langport, had a great show of Pæonies, Delphiniums, Gaillardias, and Amaryllis, which were very attractive. Messrs. CANNELL, Swanley, occupied a large space with double and single Begonias. The English Irises and Pæonies from Mr. WALKER, Whitton, won many admirers. A large gathering of cut flowers, including most hardy flowers now in season, came from Messrs. BARR, Covent Garden; while Messrs. CARTER, High Holborn, had a large group of single and double Petunias in pots intermixed with ornamental grasses, the whole making a very attractive display.

FLOWERING OF OSTROWSKIA MAGNIFICA.—This new hardy plant is in flower for the first time, we believe, in England, at Messrs. VETICH's nursery at Coombe Wood. The plants are 3 feet high, with whorls of leaves on erect stems; flowers 3 inches across, in form shallow, bell-shaped; colour white, flushed with purple—very beautiful. It will be shown at the Royal Horticultural Society's meeting next Tuesday.

"FARM, FIELD, AND FIRESIDE."—Under this alliterative title a low-priced agricultural journal is now published, and of which the second volume is before us. It contains a vast amount of information condensed into paragraphs, so much so, that many more letters of the alphabet than the three F's would be needed to furnish titles for the headings, Gardening, Housekeeping, Health, for instance. As is customary in similar publications, much of the paper is furnished by the readers themselves in the form of answers to questions.

ENKIANTHUS HIMALAICUS.—A loosely-branched Ericaceous shrub, with leaves and flowers aggregated at the ends of the branches. The mode of growth is peculiar, the branches being subjected to alternate arrests and accessions of growth, the consequence of which is that on the same branch there are relatively long intervals destitute of leaves, and these naked spaces are followed by short "spurs" bearing leaves and flowers closely crowded. The leaves are some-

what less than 1 inch in length, somewhat more than a quarter of an inch in breadth, with a short red petiole; blades membranous, oblong-lanceolate, green above, paler beneath, with a red midrib and a few scattered strigose hairs, margins with short recurved teeth. The flower-stalks are thread-like, recurved, rather shorter than the leaves, and densely covered with shaggy hairs. The flowers are bell-shaped, about the size and form of those of the Lily of the Valley, but dull red and streaked. The ten anthers are prolonged into long tails. The shrub is a native of the Eastern Himalayas, at heights of from 8000—11,000 feet, is figured in the *Botanical Magazine*, t. 6460, and described by C. B. CLARKE in HOOKER'S *Flora of British India*, vol. iii. (1882), p. 461. We have to thank the Curator of the Royal Botanic Garden, Edinburgh, for the opportunity of examining the plant.

ANTWERP.—It has been decided to inaugurate next year, in this city, an International Exhibition of Botanical Geography. M. DE BOSSCHERE, who took so active a part in the last Antwerp Exhibition, is the moving spirit in this case also, and is proceeding on the lines of M. HANSEN, of Copenhagen, who some years since carried out a similar Exhibition with success.

CERTIFICATES.—There exists at some of the foreign horticultural societies a practice of awarding certificates at one meeting and of rescinding, or confirming, and afterwards presenting them to the recipient at another. This allows of time for enquiry in doubtful cases. Were a similar opportunity for reflection and examination allowed some questionable awards might be prevented at the Floral Committee.

"LIFE LORE."—This is the name of a new monthly periodical devoted to natural history, and published by W. MAWER, 4, Essex Street, Strand, London. The articles are interesting, if not all very novel, and the magazine is well printed and appropriately illustrated.

A LARGE CARNATION.—Mr. SCANNEL, gardener to Mr. H. M. HOLDSWORTH, Wilton, states that he has a Carnation (*Souvenir de la Malmaison*) which has several unusually fine blooms, one measuring 6 inches in diameter and 1 foot 6 inches in circumference, perfectly shaped. The plant was raised from a cutting two years since.

OLD FRIENDS.—Messrs. LAING & MATHER send us from Kelso good specimens of the double white Rocket (*Hesperis matronalis*), a showy perennial not so much grown as it should be; and of the double yellow Rocket (*Barbarea vulgaris*), also an effective border plant, the flowers of which retain their beauty for a long period.

LOW TEMPERATURE.—Mr. W. H. DIVERS, Ketton Hall, Stamford informs us, that on the morning of Sunday, July 1, the minimum thermometer on the grass at Ketton registered 34°, and the minimum in a Stevenson screen close by it was 40°; but on June 25 and 26 a maximum of 81° and 84° was registered on each thermometers respectively.

BERLIN NOTES.

THE florist shops, now that the reign of the Lily of the Valley has come to an end, have ranged themselves under the sign of the Rose, and every kind of Rose is in abundance, and only here and there Orchid flowers, but which are becoming more and more the favourites in Germany and will in a few years be decidedly fashionable. It may be of interest to our readers to know the quantity of Lily of the Valley employed in Berlin in the course of the past season. As is well known, the forcing of Lily of the Valley for Berlin and neighbourhood is a specialty, numbers of growers are to be met with who have land under this crop to the extent of 6½ hectares [over 14 acres]; but the quantities raised here by no means equal the demand of the metropolis, and wagonloads arrive almost daily, chiefly from Silesia, each of which

on an average contains 900,000 to 1,000,000 flower-spikes. The total quantity of Lily of the Valley will not be fixed too high at 25,000,000 to 30,000,000. The flowers are sold in bunches of ten at 15 pfennigen, as the lowest price; so that at the least 30,000 marks are spent on these flowers in the season. If we consider that the retail price of a Lily bouquet is 50 to 75 pfennigen, then the turnover must equal a sum of from 40,000 to 45,000 marks.

MANURED FLOWER-POTS.

At the meeting on June 28 last of the Verein zur Beförderung des Gartenbaues some pots were shown made from the best kind of clay which had been mixed with from 13 to 15 per cent. of bone-meal, and then formed and burnt. After being taken from the kiln the pots were dipped in a bath containing 3 per cent. of sulphuric acid and ammoniacal potash, which was readily absorbed, and they were then allowed to dry. It was decided, at the request of the exhibitor, to test the value of the invention. *Our Berlin Correspondent.*

DISEASE OF GARDEN HELLEBORES: PERONOSPORA FICARLE, Tul.

FOR two seasons I have been aware of a serious and destructive disease amongst garden Hellebores; last season my materials were too uncertain for publication—this year, however, the data have been abundant. Very early in the spring Mr. F. W. BURBIDGE sent me badly diseased examples from Dublin, with particulars as full as it was then possible to furnish. Since that time various correspondents have sent examples, and complained of the total loss of their garden Hellebores. A note from Mr. Burbidge well explains all the cases. Mr. Burbidge writes from Dublin:—"The Hellebore disease seems confined in this neighbourhood to *Helleborus niger* (Christmas Rose), and its garden forms or varieties. *H. niger maximus* (= *H. altifolius* of gardens, not *H. altifolius* of Heyne) seems especially to suffer from its attacks, although perhaps the most robust and vigorous member of the whole group. So far as my observations go, the petioles first become affected; a black-coloured spot or blotch appears and spreads, and encircles the leaf-stalk, after which the blackened portion deliquesces, and you see the leaf lying withered on the ground. Sometimes, but more rarely, the disease extends to the crown or rootstock of the plant, and the plant rots as a blackened, putrid mass. Some affected plants were taken up and washed clean, the affected parts being carefully cut away. When the plants were replanted in fresh soil they recovered, after a top-dressing of potash and carbon in the simple shape of wood-ashes from a rubbish-fire. I have a notion, but no proof, that the attack is brought about by the too liberal use of crude farmyard manure." I was at first unfortunately supplied with too much of the *deliquesced* material, too much dirt, and too much of the "blackened, putrid mass," and too little of the less affected material. By request, and after I had detected abundant resting-spores of a *Peronospora* in the deliquescent petioles and leaves, better material was supplied. It is, perhaps, needless to say that the blackness and putrescence is an after result of the disease—a late symptom after the marauder itself has vanished. With this knowledge I secured examples only slightly affected, and placed them in a warm shady place in my garden, with the result that the whole material became speedily covered with a white and at length grey mould, which burst through the stomata and spread over the leaves. The growth was only slight on the petioles, and on the upper surfaces of the leaves. The grey mould was most profuse on the back of the leaves, and gave the entire under surface an appearance comparable with dirty brown-grey flannel. The growth was rapid; it spread like wild-fire, and in a day or two reduced the whole material to a black putrid mass. On placing some of the grey mould under the microscope it proved to be a very large and handsome much-branched *Peronospora*, with abun-

dant conidia, or spores, of great size, slightly larger even than the large conidia of the Potato fungus itself. The accompanying illustration (fig. 2), enlarged 400 diameters, shows a single branched thread out of the millions of handsome fellows produced by a single diseased plant of Hellebore.

As far as I know, no *Peronospora* has hitherto been recorded upon Hellebores; and Dr. Cooke writes me from Kew to say "We have nothing (*i.e.*,

have contracted this disease. *Peronospora ficariae* grows commonly upon two Buttercups—viz., *Ranunculus ficaria* and *R. repens*, and from these weeds it has, no doubt, spread, with the worst results, to Hellebores.

As the fungus produces resting-spores in the putrescent foliage, which will probably remain alive in the ground for several years, it behoves all gardeners who have their plants attacked by this *Peronospora*

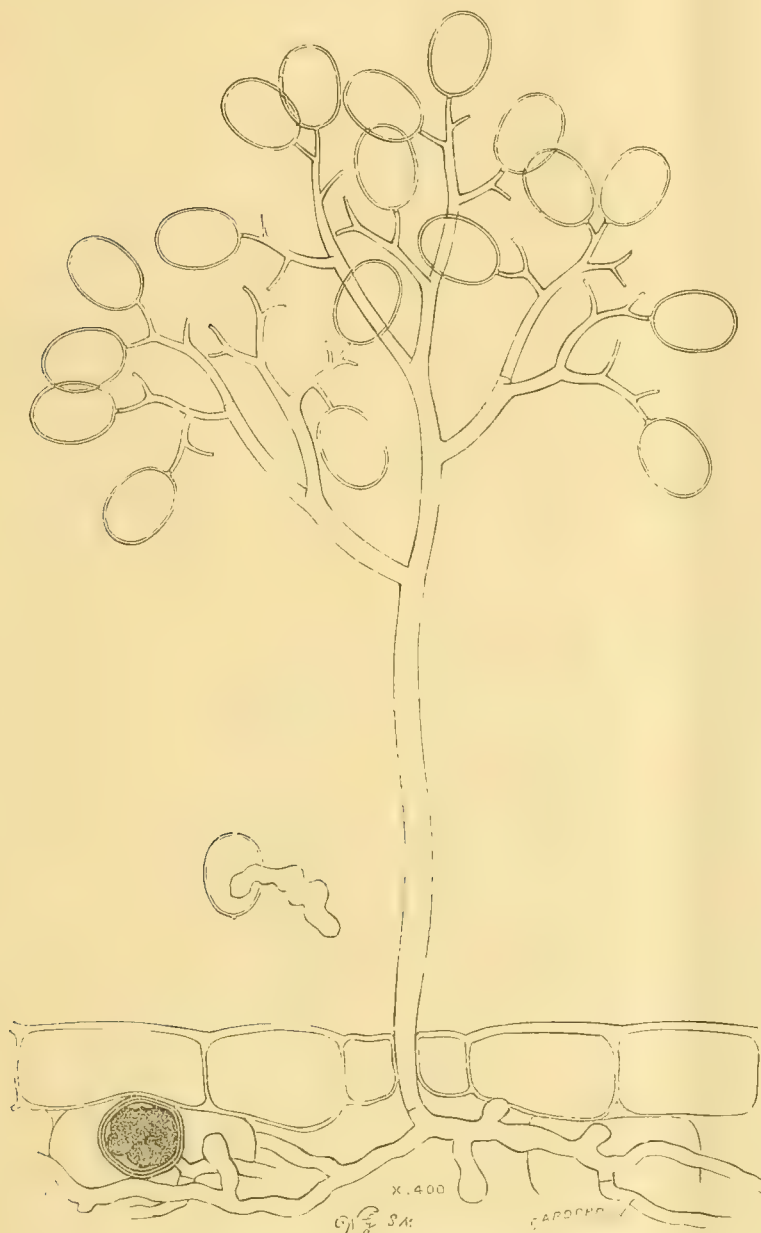


FIG. 2. PERONOSPORA ON HELLEBORES. (SEE P. 16.)

in the way of *Peronospora*) that I find on Hellebore." However, the fact remains that for two seasons, garden Hellebores have been mown down wholesale in the spring by the *Peronospora* before us, whether in sun or shade, or under glass, all appear to perish on facing this foe.

Many botanists would make a new species of this *Peronospora*, but it is better to consider it as a robust and virulent form of *Peronospora ficariae*, Tul. This is Dr. Cooke's view and mine.

It is not difficult to point out how Hellebores

to carefully destroy with fire all affected examples. Specimens have been sent to the British Museum and Royal Gardens, Kew. *Worthington G. Smith, Dunstable.*

BEST OF ALL AND WILSON JUNIOR BLACK-BERRIES.—MR. VERTEGANS sends us sprays of these American Brambles laden with flowers, and with abundant promise of fruit. Even apart from their value as fruit producers, these Blackberries are remarkably handsome in bloom, and well suited for the wild garden on that score alone.

NOTICES OF BOOKS.

THE NATIVE FLOWERS OF NEW ZEALAND.
Illustrated in colours. By Charles Hettley.

Judging from the specimens before us, this should form an excellent series of illustrations of the more showy New Zealand plants. The drawings are true to Nature, and not too highly coloured. They are not intended for botanical purposes, but with a very little more attention to detail they might be made as serviceable to botanists as they are pleasing to the lover of flowers. Messrs. Sampson Low & Co. are the publishers.

THE BOOK OF BEEKEEPING. By W. B. Webster.
(Upcott Gill, 170, Strand.)

Amid the numerous bee-books this may be recommended to beginners for the simplicity and clearness of its teaching. It does not claim to rank as a scientific treatise, but as a handy guide for the beginner it may be strongly recommended.

HOME CORRESPONDENCE.

LEAFY CLEMATIS FLOWERS.—Herewith, I send some Clematis blooms, *i.e.*, if they are worthy of the name, and am at a loss to understand why they fail to produce any colour. We have here eight varieties and all partake (more or less) of this character. The soil they are growing in is of a gritty nature, and was taken from the road-side, the position is open, but sheltered from north winds, and the plants are attached to a trellis erected for them. Can the soil be at fault, or some atmospheric condition peculiar to this locality? Double Narcissus here come single, and I have noticed the colouring in zonal Pelargonium H. Jacoby is not nearly so dark as in the Western counties. *Tom Stone.* [The outer parts of the flower are all more or less replaced by leaves, the pistils and some of the stamens and pistils are normal. Probably the amount of heat was deficient at a particular period and induced leafy, rather than petalline development. ED.]

DOUBLE-FLOWERED PRIMULAS FROM SEED.—The red and the white varieties are easily managed. I sowed a packet of seed of each on April 1, 1887, and the plants raised began to flower in October, and lasted in flower until May last. The white-flowered were double in every case and the flowers large. The scarlet is very pretty—quite double, richly coloured, the plants robust, and very abundant bloomers. These Primulas I find excellent, both for cutting from and to employ in house decorations. The same kind of treatment as that afforded the single kinds suits them. They can be propagated true from seeds, and also from cuttings placed under a bell-glass. *W. Smythe, The Gardens, Basing Park, Alton.*

ROSES FOR THE SAND HILLS.—Amongst the plants to plant on sandy downs there is none more promising than *Rosa rugosa*. It is its natural station, for I once saw it covering the sandy beaches of Northern Japan, near Awamori, Nippon. I am going to have the experiment made next winter in the downs near Furnes, with a large batch of seedlings I raised for the purpose. *J. van V., Brussels.*

THE GARDENERS' ORPHAN FUND.—As the bulk of the voting papers for the ensuing election are doubtless now filled up, will you permit me to remark upon the fact that although there are ten candidates for the six vacancies on the Fund, only two of that number, so far as I am aware, have issued special appeals to the subscribers or have in such way canvassed for votes. That so far is satisfactory and right, and will encourage the committee to frame a rule which should render canvassing in any form a disqualification. The particulars issued to the subscribers by the committee of the respective position of the various candidates, seem to be fair, and so far as I can see the friendly appeals issued add nothing, whilst in one case matter of grave importance, which shows the receipt of an income by the mother from other sources, is withheld. Private appeals, therefore, do not seem always to favour the claims of the most necessitous. However,

I shall look with interest for the result of the voting, and hope that by ignoring canvassing subscribers will help in the case of this Fund to give a costly and very undesirable proceeding its deathblow. *A. D.*

VERONICA FORMOSA.—In reference to the plant mentioned by "R. D." in last week's issue, I have been wondering whether it is in any way identical with the one called *V. Blue Gem*, sent out by Messrs. Cripps & Son about the year 1870, and which seems to correspond with "R. D.'s" description of *V. formosum*. It was raised by me about 1868, and sold to Messrs. Cripps & Son, of Tunbridge Wells. I have had *V. Blue Gem* in flower when only 3 inches high, and I can send "R. D." small plants or cuttings if he will send me full address. *Head Gardener, The Hollins, Marple, Cheshire.*

TRANSPLANTING A PEACH TREE IN JUNE.—On June 25 last I saw a young flourishing Peach tree in one of the Peach-houses at Knightsayes Court, Tiverton, the seat of Sir J. H. H. Amory, Bart., which Mr. James Peebles, the gardener, transplanted from the open wall the previous week, he having rooted out a weakly tree which it was thought at the regular time of planting fruit trees might "come round." There was nothing in the appearance of this healthy young tree of Noblesse to show that it had been recently transplanted. Let it be distinctly understood that I do not recommend the planting of fruit trees when in full leaf, but simply mention it to show that it may safely be done if care be exercised. I need hardly say that the tree bore no fruit. *H. W. Ward.*

HEUCHERA SANGUINEA.—I lately saw a nice plant in flower in Mr. Burroughs's garden, Ketton Cottage, and was favourably impressed with its beauty. It was certainly one of the best things in a choice collection of hardy plants. It appears to be quite as hardy as *H. Richardsoni*, having well stood the late severe winter, the same plant having flowered last year out-of-doors. *W. H. Divers.*

WHITE AND DOUBLE STOCKS.—I think the following is a curious instance of bee-fertilisation. For three years I had in my garden six dark red Brompton Stocks, flowering well. This year on each plant a part of the blossoms has opened pure white and double; so on each Stock part of the flowers are red and single, and half white and double. The plants have never been disturbed from this border where they are now growing. The plants were brought with me from Wiltshire, where, for many years, they bloomed red. I can only attribute the white blooms to the action of bees. *J. Scaden, Gardener, The Roost, Bourne-mouth.* [Our correspondent does not give any reasons for his suggestion. *Ed.*]

STRAWBERRY PLANTS FOR FORCING.—As soon as the last lot of fruiting plants has been transferred to their fruiting quarters it is time to commence preparing for next season. Our plan of securing a strong healthy stock is layering first in 60-size pots, and subsequently repotting, while some gardeners use for layering the runners squares of turf, preferring it to pots. Our soil is a moderately heavy loam which we enriched with a little half-decayed cow-dung or horse-droppings. About the beginning of July we usually commence layering, and in order to obtain a stout single well-matured crown we must from the very first give them every attention, and in no wise allow them to receive a check. In the first place we make all the pots clean, fill them very firmly with a good compost to within half an inch of the pot's rim, allowing plentiful supplies of water. The pots are placed evenly around the plant, and the runners slightly inserted in the soil and tightly secured with a hooked peg. In about three weeks the young plants will have become sufficiently rooted to be taken from their parents, and may be removed to the north side of a wall. During hot weather we syringe several times daily. Potting into their fruiting pots is the next consideration, and is immediately commenced. The most serviceable size is 32's. In potting the plants we always use clean dry and well-drained pots. Over the drainage is placed a few knobs of loam, with an additional handful of soot. The young plants after receiving a thorough drenching with water are turned out of the small pots, and before placing them into the fruiting ones have their roots carefully loosened if they have become somewhat bound. We pot very firmly. They are again stood behind a north wall and syringed for a few days till they have sufficiently recovered to withstand the rays of the sun, when they are removed to

an open position, where they can enjoy the full amount of sunshine, and have a free circulation of air passing among them. During their growing season I make it a rule to have the plants gone over twice weekly, removing all weeds, runners, and side shoots which may appear, leaving only the one crown. The varieties with which we succeed best for principal supplies are Sir C. Napier and *La Grosse Sucrée*. Viscountess also does well here, but it is not so large as the *La Grosse Sucrée*. *H. Markham, Mereworth Castle.*

CUP-SHAPED FOXGLOVES.—The flower enclosed is a syanthic proliferous *Digitalis*—or rather two such—I have just received from the Rev. T. A. Preston, of Thurcaston, Leicester. Though good specimens, they present few, if any, novel features. The ovary in the smaller specimen is largely filled with stamens, and there is evidence of axial proliferation extending to several internodes. I do not remember to have previously noticed the occurrence of coloured spots on the anthers like those on the corolla. The large specimen shows the common leafy central axis, and in both bracts and sepals are practically indistinguishable. *G. S. Boulger.* [Similar changes are unusually common this season. *Ed.*]

OUTDOOR STRAWBERRIES BARREN.—There are many complaints about here of Strawberry plants being blind, which I have no doubt is chiefly owing to the exceptionally dry weather last year, when as the plants did not make their growth till late in the season the crowns did not get ripened. A border of Laxton's King of Earlies at Burghley Gardens has not a plant which has not flowered well, and there is a good crop. It is instructive to learn that these plants were well watered several times during last summer and mulched, Mr. Gilbert requiring an extra number of runners from them, with the result that he has a good crop of fruit whilst many growers have partially failed. As an early variety it should be noted that this variety is a long way ahead of all others in this neighbourhood. *W. H. Divers.*

REPOTTING LILIES.—I assure Mr. Jenkins that I am not one of those gardeners who find it "extremely difficult to attempt a departure from the stereotyped laws of plant and fruit culture as practised years ago." A reference to back numbers of the *Gardeners' Chronicle* will afford him sufficient evidence of this. Indeed, those who have read Mr. Jenkins' remarks on this subject could not have failed to notice the unfavourable light in which he viewed cultivators having the temerity to depart from the beaten path. Mr. Jenkins persists in misconstruing my remarks. He well knows that if the soil were loose enough to be shaken off the roots the new soil could and should be worked well among them without there being necessity to shift the plants into larger pots—a proceeding which would then be quite undesirable and bad in practice. It was quite unnecessary for me to recommend, at p. 558, the shifting of pot-bound plants into larger pots, knowing that it was the only course to be followed, my object being (as stated at p. 754) to point out to those readers of the *Gardeners' Chronicle* who were not quite so well up in Lily culture as your correspondent evidently is, and who had not then attended to the matter, that they might with advantage repot their Lilies in the manner indicated in my note on the subject. Mr. Jenkins is altogether wrong in saying that my statement at p. 754 in any way goes to support the conclusions he had previously arrived at. It was simply to show that Mr. Jenkins had over-stated his case, in saying that "it would be difficult to select a more critical time in the whole year for repotting Lilies, than when they had made a few inches of growth," that I suggested for his benefit the time when the "flower-buds were first visible" as a more critical time. Your correspondent is again wrong in suggesting that I am content to forego any cultural detail which experience has taught me to be beneficial to plants, fruit trees, &c. The advantage which your correspondent claims for his method of procedure over that which he takes so much pains to condemn is more imaginary than real. I allow the "new stem-roots" to push into the new soil, and in due time give a surface-dressing of Beeson's manure once or twice a week before giving water at the roots. This being the case, I do not see the justice of Mr. Jenkins' remarks that I am content for the "new stem-roots to feed on the exhausted soil." How can the new stem-roots "feed" on the "exhausted soil"? If your correspondent will show me logically that I do not give my plants "proper food at the right moment" I will

thank him for so doing. I may, however, remind him that all "good cultivators" shade plants—including Melons, Cucumbers, Pines, and young Vines—from sunshine, more or less according to the weather, immediately after repotting or planting, for the obvious reason of preventing the plants from experiencing the slight check which they otherwise would undoubtedly receive. And because judicious treatment has been accorded, are we to arrive at the illogical conclusion that they have been "unnecessarily disturbed at the roots, hence checked, and so forth"? I may here remind Mr. Jenkins that equally satisfactory results are achieved by different modes of culture. *H. W. Ward.* [Enough has now been said on this head. *Ed.*]

SOCIETIES.

ROYAL HORTICULTURAL.

Scientific Committee.

JUNE 26.—R. McLachlan, Esq., F.R.S., in the chair. Present: Messrs. Boulger, O'Brien, Church, Murray, D. Morris, Dr. Masters, and Mr. Ridley.

Mr. Ridley reported that the *Odontoglossum* referred to him for a name at the previous meeting was a form of *O. oblongatum*.

Aluminium in the Ashes of Plants.—Professor Church contributed a summary of his highly interesting and important researches upon the presence of aluminium in the ashes of plants. This substance, instead of being peculiar to the species of *Lycopodium*, as once supposed, is found in minute traces in the ashes of very many others, a circumstance not to be wondered at, considering the abundant distribution of the element in many soils. It occurs in all the species of *Lycopodium* examined, except those which are of epiphytic habit, and which, consequently, do not directly derive their food from the soil. It does not occur in the allied genus *Selaginella*. It occurs in the ashes of some Tree Ferns in large proportions, sometimes forming as much as 20 per cent. of the ash, as in *Alsophila australis* and *Cyathea medullaris*; while from others it is all but absent. In the British species of Ferns little or no alumina has been found.

Weevil Attacking Rhododendrons.—Mr. McLachlan exhibited specimens of a beetle destructive to *Rhododendrons* at Sunningdale, and which he identified as *Strophisomus limbatus*.

Beetle Injurious to Tobacco.—Mr. McLachlan showed specimens sent from Trinidad of beetles injurious to Tobacco and Egg plants in that island, and which he found to be a species of *Epitrix*, allied to that which feeds on *Atropa belladonna* in this country.

The Plague of Caterpillars.—Mr. McLachlan called attention to the notion that cold winters are injurious to insects—a notion he stated to be erroneous although, no doubt, severe alternations of cold, heat, drought, or moisture, were prejudicial to insect life. During the present season it was noticed generally that great destruction of foliage occurred from caterpillars which destroyed the succulent portions of the leaf and tied the frame-work and fragments together by a web of fine threads comparable with spiders' webs. These caterpillars were different in different cases. In the Oak they were species of *Tortrix*; in the Apple the winter moth was destructive; while in other cases the larva of the Ermine moth was exceedingly hurtful to leaves.

Heteroicous Fungi.—Mr. Plowright contributed specimens illustrative of the following notes:—

Æcidium on Pea and on the Bean.—This was produced on both plants by infecting them with the same infecting material, viz., *Uromyces fabæ*. The *Æcidium* on the Pea differs in appearance from that on the Bean, the pseudoperidia in the former being few, and scattered over pale yellowish spots, while on the Bean they are crowded in thickened white spots.

Puccinia extensicola.—This produces a very handsome *Æcidium* on *Aster tripolium*. Mr. Plowright found the *Puccinia* last year at Wells-next-the-Sea, Norfolk, and produced the *Æcidium* this year on the leaf now exhibited.

Gyromyces confusum (Plowright).—This species has hitherto been confounded with *G. fuscum*. It occurs on Savins, but does not produce *Æcidia* on the Pear as *G. fuscum* does, but on the Hawthorn, Quince, and Medlar, specimens of which were exhibited. Professor Sorauer of Proskau had sent leaves of Hawthorn on which he had produced the *acidiospores* of *G. confusum* from teleutospores sent

by Mr. Plowright about a month ago. The acidiospores of *G. clavariiforme* were also sent for comparison. All the specimens sent were the products of cultivation. A special vote of thanks was proposed by Mr. Murray for this and other contributions of Mr. Plowright.

Spiral Torsion in Mint.—Dr. Hogg exhibited a specimen of Mint in which the stem was so twisted that all the leaves were placed in one continuous line. The phyllotaxis, as pointed out by Mr. Henslow, is really not interfered with in these cases. The occurrence is not uncommon. [See Masters' *Vegetable Teratology*, German edition, 1886, p. 337.]

Opuntia Shoots.—Mr. Morris exhibited joints of *Opuntia monacantha* and *O. Dillenii*, which bore seeds in their interior, shoots from their upper edge, and roots from their lower end. [Analogous cases were observed as long ago as 1832, and various references to similar phenomena are given in Masters' *Vegetable Teratology*, German edition, 1886, p. 207.]

Various Exhibits.—From the Royal Botanic Garden, Edinburgh, came catkins and cones of *Pinus contorta* and other species of *Coniferae*. A malformed flower of *Odontoglossum crispum* from Mr. Douglas, was referred to Mr. Ridley. *Brassia caudata* and *Acanthophippium striatum* were also shown.

ROSE EXHIBITION AT THE DEVON ROSERIES, TORQUAY.

JUNE 27.—In consequence of the abandonment of the Torquay Horticultural Society's annual Rose exhibition, Messrs. Curtis, Sandford & Co. arranged for a Rose show on their own premises. The object in view, as previously stated in these columns, was to form the nucleus of a fund to help distressed gardeners, their widows and orphans, and to assist invalid gardeners to come for needed rest and change from the North to Torquay. Admission to the exhibition was free to all, collecting boxes being placed among the exhibits. The only drawback was the very inclement weather during the early part of the exhibition, but notwithstanding this the result more than equalled the expectations of the firm, more than £50 nett being taken, and which was placed to the credit of the fund.

The exhibits were arranged in a tent more than 100 feet long, erected over one of the long broad walks in the nursery, so that the exhibits were placed on stands erected over the borders on each side. The entries numbered twenty-eight, some hailing from Oxford and Bath. The prizes were given by Messrs. Curtis, Sandford & Co., and were awarded as follows:—

Class 1: 1st, Silver Cup; 2nd, £1 1s.; 3rd, 10s. 6d., for the best amateur's box of twenty-four cut Rose blooms, distinct, single trusses, with foliage.—There were five competitors. Mr. Guerdon, gr. to Miss Watson Taylor, Headylin, Oxford, was placed 1st with a splendid lot of blooms, principally Teas, nearly all first-class blooms, including *Niphotos*, Jean Ducher, Souvenir d'une Ami, Camille Koch, La France, Maréchal Niel, Dupuy Jamain, Lady M. Fitzwilliam, Belle Fleur d'Anjou, Madame Welche, Catharine Mermet, Rubens, Perle des Jardins, Devonensis, Souvenir d'Elise Vardon, Madame Watteville, Comtesse de Nadaillac, Madame Willermoz.

Class 2: For twelve cut blooms of Roses, single trusses, distinct, with foliage, open to amateurs in Torquay and neighbourhood. 1st prize, £1 1s.; 2nd, 10s. 6d.; 3rd, 5s. Seven competitors. Major Roderaz, Vale Lodge, Torquay, secured 1st, with a very nice box of blooms of good substance, the best varieties being Rubens, Duke of Wellington, Madame Gabrielle Luizet, La France, and Innocenta Pirola.

Class 3: Open to local amateurs; six cut blooms of Roses, all of one distinct colour. 1st prize, 10s. 6d.; 2nd, 7s. 6d.; 3rd, 5s. Nine competitors.—1st, Mr. Warren, gr. to the Dowager Lady Haldon, with very nice blooms of Devonensis.

Messrs. Curtis, Sandford & Co. themselves put up twenty-eight boxes of cut blooms of Roses of their usual merit; very fine boxes each of Lady Mary Fitzwilliam, Merveille de Lyon, Ulrich Brunner, La France, and Marie van Houtte, were splendid. Among their boxes of Tea Roses as being especially good were Madame Cusin, Innocenta Pirola, Rubens, David Pradel, Maréchal Niel, Anna Ollivier, Comtesse Riza du Parc, J. Pernet, Viscountess Folkestone, &c. Among H.P.'s, which were excellent, the following varieties were particularly good—Violet Bowyer, Etienne Levet, La France, Baroness Rothschild, Madame G. Luizet, Anne Laxton, Sénateur Vaisse, Souvenir de Paul Néron, François Michelin, &c.

A box of Dahlia blooms was shown by Mr. Hammet,

florist, Brixham. Mr. G. H. Pearce, Higher Union Street, Torquay, staged baskets of excellent fruit each of Sir Joseph and Dr. Hogg Strawberries, and a very fine dish of Tomatos. Messrs. Lacombe Pince & Co. staged several nice boxes of Roses, one large box of *Niphotos* being remarkably good. Their principal H.P.'s were Etienne Levet, Madame G. Luizet, Baroness Rothschild, C. Bowyer, A. Souper, Charles Lefebvre, Ulrich Brunner, and John Hopper, Mr. Walker sent up a basket of choice hybrids of *Aquilegia*. A large quantity of baskets of Roses (cut blooms) were also put up. The success of this, the first attempt of the firm, has decided them to hold a two days' exhibition next year. D. C. P.

RICHMOND HORTICULTURAL.

JULY 4.—Held in the customary locality the Old Deer Park, the show suffered appreciably from lack of help on the part of plantmen, as the large tent which used to look so brilliant with fine plants and groups was but poorly filled. Cut flowers were, however, plentiful, fruit fair, and vegetables not only abundant but good. These facts indicate what is found generally—that plants as an exhibition element are much less favoured than formerly.

Honorary contributions formed, as usual, a marked feature. These included a charming group of pot Roses faced by a line of the variegated *Eurya latifolia*, and backed by Japanese *Acer*s and standard plants, ranging from 6 to 8 feet in height, of *Hydrangea paniculata*, each carrying fine panicles of flowers, some fully 10 inches long. This group came from Messrs. James Veitch & Sons. Messrs. C. Lee & Sons had one of their well-known and most interesting groups of hardy trees and shrubs, the foliage variegated and coloured in rich variety, helped by some pot Roses and hardy Ferns. Messrs. J. Laing & Son had a pretty group of *Begonias*, interspersed with some good *Gloxinias* and foliage plants. From Messrs. B. S. Williams & Co. came a pretty group of Orchids and other choice plants, including some of the scarlet Bottle-brush, *Metrosideros floribunda*. Mr. E. Drost, Kew Road, had a big group of Palms, some colour being added by the novel method of tying bunches of Irises, &c., on sticks and standing them amongst the foliage. Mr. Chambers, Isleworth, had his beautiful pure white *Viola Snowflake* in quantity; Mr. T. S. Ware and Messrs. Barr & Son, large and beautiful collections of hardy flowers, which made a striking feature; and Messrs. Veitch & Sons had, in addition, a capital lot of cut Roses, including most of the best varieties.

Groups.—Only two were in competition for the large groups, Mr. A. Brown, of Richmond coming 1st with a very taking arrangement, but some of his tall plants, especially *Tuberoses* and *Liliums*, had a "sticky" look; Mr. James, of Norwood, was 2nd, with a thin group, chiefly of Orchids.

Stove and Greenhouse Plants.—Mr. W. Bates, Poulett Lodge Gardens, Twickenham, was 1st in two classes for these plants, having good *Allamanda Hendersonii*, *Bougainvillea glabra*, *Sobralia macrantha*, *Gloriosa superba*, &c. In one class Mr. James was 2nd, whilst in the other Mr. Munro, gr. to E. D. Paul, Esq., Twickenham, was 2nd. He also had *Gloriosa superba* and *Kalosanthes coccinea*, very fine.

Foliage plants were not first-rate, the first coming from Mr. Chadwick, gr. to E. M. Nelson, Esq., Ealing, who had a big *Cycas revoluta*, huge *Areca lutescens*, good *Crotons*, *Asparagus plumosus nanus*, and *Alocasia variegata*. Mr. James took 2nd place, having an immense *Latania borbonica*, which overshadowed all else.

Exotic Ferns came from Mr. Munro and Mr. Chadwick, and generally comprised good fair-sized specimens of *Davallia*, *Adiantums*, &c., the prizes going in the order given.

Palms were a strong but very sombre feature, and made a heavy dull group. The best six came from Dr. Wood, Roehampton, Mr. Bates, and Mr. James following.

Coleus, though smaller, were more attractive, because well coloured. These were chiefly flattish in form, and came from Mr. Couombs, gr. to W. Furze, Esq., Teddington, admirably done. Mr. Sullivan, gr. to D. B. Chapman, Esq., Roehampton, and Mr. East, gr. to F. Wigan, Esq., East Sheen.

Orchids were very good, the best six being sent by Mr. Hill, gr. to H. Little, Esq., St. Margarets, who had the deliciously perfumed *Aërides Leonii*, with six spikes, *A. odoratum purpurascens*, *Cattleya Sanderiana*, and *C. intricata* as named by Reichenbach; and *Cypripedium barbatum superbum* and *C.*

Veitchii. Mr. H. James was 2nd, with good pieces of *Cattleya Mendelii*, *Aërides Lobbii*, *Cypripedium barbatum*, *C. nigrum*, &c.

Show and Fancy Pelargoniums.—Specimen plants came from Mr. C. Turner only, medium-sized, well-flowered, and very attractive. Two collections of small plants in groups were staged, the best coming from Mr. W. Clay, Kingston. Zonal Pelargoniums were very showy, Mr. Hill having the best six in four singles and two doubles; whilst Mr. Barnes, gr. to W. S. Graham, Esq., Roehampton, had chiefly doubles, profusely bloomed. *Fuchsias*, were poor; *Begonias* very good, Mr. Hill having the best six plants, finely done and flowered; and *Gloxinias* were also very good.

Cut Flowers, Table Decorations &c., filled a large tent and made a brave show. The open classes for thirty-six and twenty-four Roses in trebles brought beautiful flowers from Mr. C. Turner, 1st in both classes; Messrs. Paul & Sons, Old Nurseries, Chess-hunt, 2nd in both; and Mr. W. Rumsey, Waltham Cross, 3rd. Mr. Turner's flowers were specially fresh and clean; but with the National Show at hand, we need hardly recapitulate kinds. In the class for twenty-four singles (amateurs), Mr. West, of Reigate, was 1st, and Mr. Warwick, Hampton, 2nd, whilst the latter had the best twelve flowers, and Mr. Girdlestone, of Sunningdale, the best twelve Tea Roses. Mr. Bates had the best twelve bunches of cut flowers. A number of pretty table stands and baskets of flowers were staged, all very pleasing. Buttonhole bouquets and sprays were capital, but hand bouquets poor.

Fruit was fairly abundant, but had suffered from lack of sunshine. Mr. Osman, gr. to L. H. Baker, Esq., Ottershaw Park, was 1st, with six dishes, having fair white and black Grapes, Peaches, &c. Mr. Palmer, gr. to F. Hume Dicks, Esq., Thames Ditton, was 2nd. Mr. Bates had the best four dishes. In the open class for Grapes the best pair of bunches of black were staged by Mr. Osman, who had good Hamburgs; Mr. Thompson, gr. to Messrs. W. & E. Wells, Hounslow, coming next with grand Madresfield Court, only wanting deeper colour. Mr. Feist, gr. to W. Ashton, Esq., Englefield Green, had of white five bunches of Muscat of Alexandria, but wanting finish; Mr. Thompson being again 2nd, with the same Grape, finely berried. In the local classes Mr. Bates had the best black in good Alicante, and Mr. Munro the best white, in Buckland Sweetwater. The best green-flesh Melon was William Tillery, from Dr. Woods; and the best scarlet-flesh was Scarlet Reimer, from Mr. East.

Vegetables were a remarkable feature, Mr. Waite, gr. to Colonel Talbot, Esher, taking 1st place in both the chief classes with wonderfully fine clean samples, Mr. Palmer being 2nd also in both classes with capital exhibits. Cucumbers were good and numerous, and Tomatos in pots were fairly well done. Nearly a score of large baskets of vegetables were also staged, this department being unduly crowded with exhibits.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.

THE forty-fifth anniversary festival of this Institution was held at The Albion, Aldersgate Street, E.C., on Wednesday evening, when a large company assembled. In the absence, through illness, of Mr. Joseph Chamberlain, M.P., Sir Trevor Lawrence, Bart., M.P., President of the Royal Horticultural Society, presided. Horticulturists of all sections were well represented, and many friends of the art and of the Institution were present.

The Chairman on rising to propose the toast of the evening, "Success and Prosperity to the Gardeners' Royal Benevolent Institution," was received with loud cheers. He observed that it would be unnecessary for him to say what a keen sense of disappointment he felt when he heard that the Right Hon. Joseph Chamberlain had been prevented by illness from being in the chair that evening. He had in his hand a letter from Mr. Chamberlain, in which the writer expressed his great disappointment at being unable to be present that evening through illness, but he also had a subsequent telegram saying that he (Mr. Chamberlain) would be happy to come on some other occasion. The objects of the Institution were well known to every one as well as its claims. But on looking through the list of subscribers he was sorry to say he found absent the names of a large number of friends of his own who derived a large amount of pleasure from their garden, and he felt sure it had not been brought to their notice that they ought to subscribe

to the Institution. The Institution did not do anything which was at all extravagant. It simply gave to the men who were pensioners £20 a year and to the women £16. Surely it would be impossible to do less than that. It had got on its lists a very considerable number of gardeners, and he was glad to see that it was enabled to add to the comforts of the old age of a considerable number of them. The average age of pensioners, he found, was seventy-four, and the oldest pensioner was a hundred years of age. Therefore gardening did not appear to be an unhealthy occupation. The number of applications was larger than the charity was able to help. The total expenditure was only £2250, and when he recollected the enormous interest which the people of this country took in gardening, he must say it was a reflection upon the wealthier people of the country that they did not support the Institution more largely. The Institution had made it a rule to help those first who helped themselves, and that preference was given to those who had been on the books of the Society for fifteen clear years before any help was given to others. He ventured to think that they ought to work the field of gardening and the interest the people look in their gardens more largely than was done in the interest of the Society. Gardeners often found themselves in the position of having very little for their declining years, and he could not believe that the people who got enjoyment out of their gardens would not be prepared to provide for the maintenance of that admirable institution. He coupled with the toast the names of Mr. Lee, the father of the Institution, who had missed only one dinner out of forty-five, and Mr. H. J. Veitch, the Treasurer.

Mr. John Lee in response thanked the company for the enthusiastic manner in which they had received his name, and went on to say that he owed a great debt of gratitude to the Chairman for having, at a moment's notice, consented to preside that evening, and to those gentlemen present for the generous support they had given to the Institution, as it was through their generosity that it had been raised to a high pitch of excellence, and had been placed on a solid ground which he, and he knew they all, hoped it would maintain for many years to come.

Mr. H. J. Veitch also responded, and having returned thanks for the hearty reception accorded him alluded, as Treasurer, to the financial position of the Institution, which he said was managed as carefully as it was possible to manage any institution. He would again like to remind them that the interest on the money subscribed all went in benefiting their pensioners. They had no large buildings to keep up and no expensive staff to maintain, but they were obliged to have a Secretary, whom they paid as little as possible! With that one exception the whole of their money was devoted to the purpose for which it was given. They had 126 pensioners, but at present they had only one election a year, and at the last election they were obliged to leave out fifteen unfortunate candidates for want of funds. That was a sad thing for either men or women, but one case was particularly sad, as in that instance the applicant lost by only nine votes, after having secured 700. Another election would not take place for a year, and who could tell how many more candidates there might be then? The present bad times affected gardeners even more than most other servants, as they were the first to be discharged in times of scarcity. He knew of cases where gardeners had been out of employment for three and four years, and they were compelled to spend what little savings they had put by for old age. This Society tried to meet those cases, and he was bound to say they made the funds at their disposal go as far as they possibly could. Unfortunately for the Society they had lost fifty guineas a year by the conversion of the Three per Cent. Consols. In conclusion, he said, if they could only see the tears of joy in the eyes of the recipients they would not fail to continue their liberal support to the Institution, and they might rest assured that the money they gave was well deserved.

Dr. Masters proposed the "Health of the Chairman."

The Chairman in acknowledging the toast, which was enthusiastically honoured, said, in allusion to a remark of Dr. Masters, he agreed that the Royal Horticultural Society ought to interest itself in all that concerned gardeners and gardening; he thought the Society had done something to show that it was ready to open its doors to all who desired to enter.

The Secretary then announced that the night's subscriptions amounted to nearly 1000 guineas.

The Chairman proposed the "Health of their old friend, Mr. Cutler." That gentleman having responded,

Mr. B. S. Williams responded to the toast of "The Committee;" and the proceedings, which had been enlivened with music, then terminated.

THE WEATHER.

[Accumulated temperature indicates the combined amount and duration of the excess or defect of temperature above or below 32° F. for the period named, and is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.			
	Above or below the Mean for the week ending June 25.	ACCUMULATED.		
		Above 42° for the Week.	Below 42° for the Week.	Above 42° difference from Mean since Jan. 3, 1888.
Principal Wheat-producing Districts.	Day-deg.	Day-deg.	Day-deg.	Day-deg.
0. SCOTLAND, N. ...	2 below	68	0	-70 + 201
1. SCOTLAND, E. ...	3 below	72	0	-163 + 157
2. ENGLAND, N.E. ...	6 below	62	0	-181 + 73
3. ENGLAND, E. ...	3 below	104	0	-160 + 154
4. MIDLAND COS. ...	3 below	101	0	-200 + 150
5. ENGLAND, S. ...	1 below	112	0	-249 + 204
Principal Grazing, &c., Districts.				
6. SCOTLAND, W. ...	2 above	109	0	-136 + 107
7. ENGLAND, N.W. ...	1 below	106	0	-166 + 117
8. ENGLAND, S.W. ...	1 below	112	0	-242 + 254
9. IRELAND, N. ...	1 above	116	0	-141 + 67
10. IRELAND, S. ...	1 above	117	0	-137 + 113
— CHANNEL ISLANDS	3 below	105	0	-208 + 154

DISTRICTS.	RAINFALL.		BRIGHT SUNSHINE.	
	More or less than the Mean for the Week.	No. of Rainy Days since Jan. 3, 1888.	Total Fall since Jan. 3, 1888.	Percentage of possible Duration for the Week.
Principal Wheat-producing Districts.	Tenths of Inch.		Ins.	
0. SCOTLAND, N. ...	6 less	117	18.5	50 31
1. SCOTLAND, E. ...	5 less	96	12.8	57 32
2. ENGLAND, N.E. ...	3 less	87	10.1	42 28
3. ENGLAND, E. ...	0 (aver.)	88	9.0	38 29
4. MIDLAND COS. ...	2 more	79	9.5	21 27
5. ENGLAND, S. ...	3 more	82	10.6	27 28
Principal Grazing, &c., Districts.				
6. SCOTLAND, W. ...	6 less	86	18.8	62 31
7. ENGLAND, N.W. ...	5 less	89	9.1	51 30
8. ENGLAND, S.W. ...	3 less	88	13.1	29 34
9. IRELAND, N. ...	6 less	92	14.7	66 30
10. IRELAND, S. ...	5 less	85	16.5	48 35
— CHANNEL ISLANDS	1 less	105	12.9	32 38

MEAN TEMPERATURE OBSERVED AT CHISWICK DURING THE WEEK ENDING JULY 14. (AVERAGE OF FORTY-FOUR YEARS.)

July 8	63°·2	July 12	63°·3
" 9	63°·2	" 13	63°·3
" 10	63°·3	" 14	63°·3
" 11	63°·3	Mean for the week ...	63°·3

Accumulated temperature indicates the combined amount and duration of the excess or defect of temperature above or below 32° F. for the period named, and is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.			
	Above or below the Mean for the week ending July 2.	ACCUMULATED.		
		Above 42° for the Week.	Below 42° for the Week.	Above 42° difference from Mean since Jan. 3, 1888.
Principal Wheat-producing Districts.	Day-deg.	Day-deg.	Day-deg.	Day-deg.
0. SCOTLAND, N. ...	1 below	75	0	-79 + 201
1. SCOTLAND, E. ...	3 below	78	0	-196 + 157
2. ENGLAND, N.E. ...	5 below	75	0	-222 + 73
3. ENGLAND, E. ...	4 below	104	0	-186 + 154
4. MIDLAND COS. ...	3 below	102	0	-226 + 150
5. ENGLAND, S. ...	3 below	108	0	-275 + 204
Principal Grazing, &c., Districts.				
6. SCOTLAND, W. ...	0 (aver.)	104	0	-141 + 107
7. ENGLAND, N.W. ...	2 below	101	0	-184 + 117
8. ENGLAND, S.W. ...	3 below	103	0	-259 + 254
9. IRELAND, N. ...	2 below	99	0	-150 + 67
10. IRELAND, S. ...	1 below	111	0	-141 + 113
— CHANNEL ISLANDS	2 below	112	0	-216 + 154

DISTRICTS.	RAINFALL.		BRIGHT SUNSHINE.	
	More or less than the Mean for the Week.	No. of Rainy Days since Jan. 3, 1888.	Total Fall since Jan. 3, 1888.	Percentage of possible Duration for the Week.
Principal Wheat-producing Districts.	Tenths of Inch.		Ins.	
0. SCOTLAND, N. ...	6 less	118	18.7	36 31
1. SCOTLAND, E. ...	7 more	99	14.1	32 32
2. ENGLAND, N.E. ...	3 more	92	11.0	17 27
3. ENGLAND, E. ...	10 more	93	10.5	20 29
4. MIDLAND COS. ...	7 more	84	10.8	26 27
5. ENGLAND, S. ...	9 more	88	12.0	23 28
Principal Grazing, &c., Districts.				
6. SCOTLAND, W. ...	8 more	90	20.1	38 34
7. ENGLAND, N.W. ...	17 more	94	11.5	27 30
8. ENGLAND, S.W. ...	11 more	94	14.8	29 34
9. IRELAND, N. ...	6 more	97	17.0	23 30
10. IRELAND, S. ...	8 more	93	18.0	26 33
— CHANNEL ISLANDS	6 more	111	14.0	35 38

THE PAST WEEK.

The following summary record of the weather for the week ending July 2, is furnished from the Meteorological Office:—

"The weather has been very unsettled and rainy except in the extreme north of Scotland. Sharp thunderstorms have prevailed in almost all districts, and in some localities the rainfall was exceedingly large. At Rothamsted, on the 26th, 3·24 inches of rain fell between 7.30 p.m. and 11.30 p.m.

"The temperature has just equalled the mean in 'Scotland, W.,' but has been below it in all other districts; in 'England, E.,' the deficit was 4°, and in 'England, N.E.,' 5°. The highest of the maxima were recorded generally on the 26th, when the thermometer rose to between 80° and 85° in most parts of the kingdom, but over the south and south-west of England and the south of Ireland it ranged from 71° to 76°. The lowest of the minima (which were registered during the last few days of the period) were unusually low for the time of year; at most of the inland stations the sheltered thermometer fell to between 34° and 39°.

"The rainfall has been considerably less than the

mean in 'Scotland, N.,' but more in all other districts, the excess in most cases being very large; in 'Ireland, N.,' and 'Scotland, W.,' it exceeded an inch and a half.

"Bright sunshine has been very little prevalent, the percentage of the possible amount of duration ranging from 17 to 29 over England, from 23 to 26 in Ireland, and from 32 to 38 in Scotland."

ENQUIRIES.

"He that questioneth much shall learn much."—BACON.

EDIBLE PINE.—In *The Long White Mountain (Mandchuria)*, by H. E. M. James (Longmans, 1888), at p. 343, I find the following:—"On the third day, on the road from Sansing to Ninguta, we reached a forest of Birch, Spruce, and Pines. Amongst the latter was the edible Pine, bearing cones 6 inches in length, with seeds the size of Almonds, packed tightly in rows at the base of each layer of leaves. When the skin outside is cracked and stripped off, the kernel is good to eat, though, perhaps, a little tasteless. I counted 146 in one cone." What can this be? It is much too large for *Pinus Cembra*. It is the size of the cone of *Pinus pinea* (the Stone Pine of Italy), but the seeds of the latter are also much smaller than these, which seem as large as those of an *Araucaria*'s, and the locality puts these out of the question. I think there is on the Pacific slope of the United States of America a Pine with eatable seeds, but am not sure of it. In the index of plants collected by the author I find only *Pinus Mandchurica* and *P. Koraiensis*. *J. V. V.* [Can it be a Pine at all? Ed.]

NOTICES TO CORRESPONDENTS.

AMARYLLIDÆE. Mr. J. G. Baker's Book on: *E. C. P.* We do not know the price. Write to the publishers, Messrs. Bell & Sons, York Street, Covent Garden, W.C.

BURNT EARTH: *Burnt Earth.* The best way to obtain this on a small scale is to collect the garden rubbish, wood-trimmings, &c., into a heap, and set fire to it, after first covering it with litter, and then on the outside with loamy, or, indeed, any kind of soil that is handy. If the covering-up is done in the charcoal-burner's manner of covering a heap of wood to be converted into charcoal, and by so regulating the vents that the materials are not permitted to flare, the rubbish will be charred into a useful material for mixing with potting soils, and the 6-inch covering of soil, in whichever manner the job may be performed, will be "burnt." On a larger scale, loamy earth may be burnt in the same way that ballast is prepared from clay, i.e., by burning it with a small proportion of small coal in conical heaps.

CUCUMBER DISEASED: *W. S., Stony Stratford.* The name of the fungus infesting your Cucumber plants is *Didymium dedaleum*. We believe the fungus to be very rare. For an illustrated account of an allied fungus infesting Hart's-tongue Fern, see *Gardeners' Chronicle*, July 15, 1882. *W. G. S.* [We shall shortly illustrate this species also. Ed.]

CUTTING BACK A HOLLOW HEDGE: *E.* Cut it now, and you will get some growth on it by the end of August. The cutting of the other side may be done next spring, just before growth commences. It should be carefully done with the *scoteur*, knife, and saw. You do not say of what plants the hedge is composed, so that we are advising without fully knowing your case.

EUCALYPTUS: *J. G. I.* If, as we understand you, the glaucous form is a seedling from the green, then, undoubtedly, the two are but forms of one and the same species, and that *E. urnigera*, as proved by the flowers and seed-vessels you first sent. We should not attach any great importance as a differential character to the glaucousness of the leaves, for that is notoriously variable according to age and other circumstances, which are very interesting.

GIANT ORACH: *F. W. H.* A variety of *Atriplex hortensis*, an annual plant of rather large growth, the leaves of which are used as Spinach. It produces best when sown in good ground, which is usually done in March and successively

throughout the summer months. Sow in drills, 2 feet apart, and thin the seedlings to 1 foot apart.

"HORTICULTURAL ADVERTISER." *Poor Georgy*, Messrs. Foster & Pearson, Beeston, Notts.

INSECTS: *J. A. C.* The worm was attacked by what, from your description, was evidently the larva of one of the larger beetles (*Staphylinidæ*). *W.* [We shall be enabled shortly to give a figure and description of the insect. Ed.]

LILIES DISEASED: *G. L., Hungerford.* The Lilies have been destroyed by the well-known Lily-disease, which has been extremely prevalent this year. It was described in the *Gardeners' Chronicle* for September 10, 1881, under the name of *Ovularia elliptica*. We shall publish a further account of this disease shortly.

MELONS: *R. Rigg.* The leaves are affected by a species of fungus similar to that which is ordinarily called Potato disease. There is no known cure. Burn the plants, and burn sulphur in the structure before putting into it any kind of plant. See article on Vine Mildew, p. 15.

MILDEW ON STRAWBERRIES: *H. J.* Mildew usually appears on these if the air in the house or pit is close, cool, and moist, these being conditions favourable to its development. It may be checked if taken in time, without much damage being done, by timely application of flowers of sulphur, distributed by a "boite-à-houpe"—that is, a wollen sulphur distributor—or by getting the heating apparatus warmed after smearing it with lime-wash and flowers of sulphur. Take out badly infected plants and burn them. Maintain a healthier condition of the air within the house.

MUSHROOM: *R. J. Russel.* A Mushroom measuring 33 inches in circumference, with a stem of 5½ inches, and weight 17 oz., is phenomenal. One of 1 lb. 9 oz., and 36 inches in circumference, was noticed in our pages October 19, 1878, p. 500.

NAMES OF PLANTS: *J. F.* *Calycanthus floridus*.—*L. J. W.* *Rhododendron cinnabarinum* (*Blandfordia floridula*).—*Lily.* *Lilium testaceum*. When you say "imported," we presume you mean from Holland. If not, we should be glad to know whence.—*B. P.* 1. *Hieracium aurantiacum*; 2. *Centranthus ruber*; 3. *Hyacinthus comosus*; 4. *H. plumosus*; 5. next week; 6. *Chrysanthemum Leucanthemum* (*Ox-eye Daisy*).—*J. H.* 1. *Escallonia Philippiana*; 2. *Diplacus glutinosus*; 3. *Fuchsia procumbens*; 4. *Eupatorium Weinmannianum*.—*R. A. G.* 1. *Nephrodium filix-mas* var. *fluctuosa*; 2. *Polystichum angulare* var. *oxyphyllum*; 3. *Lomaria alpina*; 4. *Nephrodium filix-mas* var. *cristata*; 5. *Polystichum angulare* var. *lineare*; 6. *Aspidium acrostichoides*; 7. *Erinus alpinus*; 8. *Cattleya labiata* var.—*Thorn.* *Spiraea cantoniensis*, *Crataegus rotundifolia* (a form of *C. coccinea*).—*C. E. B. Y.* *Sempervivum villosum*.—*P. H.* *Trifolium striatum*.—*J. Morton.* *Calamintha grandiflora*.—*J. B.* *Philodendron longelaminatum*.—*R. C. B.* *Vicia narbonensis* var. *serratifolia*.—*Bexley.* 1. *Rhus cotinus*; 2. *Pyrus aria*; 3. *Spiraea confusa*; 4. *Deutzia scabra*.—*Martin.* *Lælopsiis domingensis*.

PEACH: *J. S. B., Chelmsford.* Mildew. See this and our last issue for particulars of remedy.

PEACH, EARLY RIVERS: *G. H.* It has the fault of splitting at the stone, even in dry seasons. It is one of the finest of the early varieties, but we do not know of any remedy for the splitting.

PEACH TREES: *W. N.* In September, as soon as there is any sign of maturity in the leaves, carefully dig up the roots, after unnauling the shoots and securing them in three or four bundles. Previously having prepared a new station, with plenty of fresh loam mixed with a little of the staple, plant the roots, carefully stretched out, at 6 inches below the ground level. Mulch immediately on planting, and fasten the shoots loosely to the wall.

POTATOS: *I. O. G.* The earliest come from Malta, Algiers, and South of France, later ones from Jersey, Cornwall, and the South of England.

RECORD OF CERTIFICATES: *J. T. P.* The official list is given to our representative at the close of the meeting by the officers of the Society. At the end of each half year the complete list is sent for revision, when omissions are supplied and errors rectified: hence the discrepancy.

TEA-SCENTED ROSE: *H. G. E.* We cannot undertake to name varieties of the Rose. Send it to a Rose nursery.

THYMUS SERPYLLUM: *A. B., Cambridge.* The occurrence of two forms, one with hermaphrodite, the other with female flowers, is frequent. They do not constitute separate varieties, but merely sexual forms. You will find a full account, with illustrations, in Müller's *Fertilisation of Flowers*, English edition, by D'Arcy Thompson, 1883, p. 473.

VINES: *H. L.* Your leaves and berries are covered with the spores of a fungus (*Pilobolus*) common on dung. The spore-case bursts elastically, and projects the spores on to the leaves, &c. We do not think they will do any serious mischief.

YORK GALA: *Subscriber.* No—not in our columns.

COMMUNICATIONS RECEIVED.—*W. H. C.*—*D. T. F.*—*J. T.*—*F. T. M.*—*J. S. G.*—*W. W.*—*W. B.*—*P. & M.*—*D. D.*—*U. D.*—*H. W. W.*—*R. A. R.*—*F. R.*—*D.*—*E. C.*—*J. Whittaker.*—*W. H. W.*—*W. W.*—*Cooking & Co.*—*Yokohama.*—*Deane & Co.*—*Messrs. Carter & Co.*—*R. H. V.*—*Cooper, Taber & Co.* (already noticed on these pages).—*C. P. L.*—*P. Coney* (hno inflorescence, but on too small a scale to be of use).—*J. R. A. D.*—*J. S.*—*J. H.*—*J. W.*—*Kew.*—*J. V. & Sons.*—*J. D. & S.*—*J. J.*—*J. H. Krelage.*

MARKETS.

COVENT GARDEN, July 5.

Outdoor Strawberries are in full supply and good condition. Business quieter, and clearances made at somewhat lower rates. *James Webber, Wholesale Apple Market.*

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Cherries, half-sieve...	4 0-7 0	Peaches, dozen	4 0-12 0
Grapes, per lb.	1 6-3 6	Pine-apples, Eng., lb.	2 0-
Kent Cobs, 100 lb.	40 0-45 0	St. Michael, each	2 0-5 0
Lemons, per case	12 0-21 0	Strawberries, lb.	0 6-1 0
Melons, each	1 0-3 0		

VEGETABLES.—AVERAGE RETAIL PRICES.

	s. d. s. d.		s. d. s. d.
Artichokes, p. doz.	4 0-	Mushrooms, punnet	1 0-1 6
Asparagus, Fr., bund.	1 6-4 0	Mustard and Cress,	
— English, 100	3 6-6 0	punnet	0 4-
Beans, Kidney, lb.	1 0-	Onions, per bushel	5 0-
Beet, red, per dozen	1 0-2 0	Parsley, per bunch	0 4-
Carrots, per bunch	0 9-	Potatoes, per cwt.	4 0-5 0
Cauliflowers, each	0 8-	— Kidney, per cwt.	4 0-5 0
Celery, per bundle	1 6-2 6	Rhubarb, per bundle	0 4-
Cucumbers, each	0 9-1 0	Shallots, per lb.	0 6-
Endive, per dozen	2 0-	Spinach, per bushel	2 6-
Green Mint, bunch	0 4-	Spruce, per bundle	1 0-
Herbs, per bunch	0 4-	Tomatoes, per lb.	1 0-
Leeks, per bunch	0 6-	Turnips, per bunch,	
Lettuce, per dozen	1 6-	new	0 8-8 0

POTATOS.—Jersey Flukes, 9s. to 10s.; do. Kidneys, 7s. to 8s. per cwt.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Aralia Sieboldi, doz.	6 0-18 0	Fuchsias, doz.	4 0-9 0
Bouvardias, per dozen	9 0-12 0	Heliotropes, dozen	6 0-9 0
Calceolarias, dozen	4 0-9 0	Hydrangeas, dozen	9 0-18 0
Coleus, dozen	3 0-6 0	Liliums, var., doz.	18 0-30 0
Crassula, per doz.	11 0-30 0	Lobelias, per dozen	3 0-6 0
Cyperus, per dozen	4 0-12 0	Marguerites, doz.	9 0-12 0
Dracena terminalis,		Mignonne, 12 pots	4 0-8 0
per dozen	30 0-60 0	Musk, dozen	1 6-3 0
— viridis, per doz	12 0-24 0	Myrtles, per dozen	6 0-12 0
Ericas, various, per		Palms in var., each	2 6-21 0
dozen	9 0-18 0	Paragoniums, doz.	6 0-15 0
— ventricosa, doz.	18 0-30 0	— Ivy-leaf, dozen	3 0-6 0
Euonymus, in var.,		— scarlet, dozen	3 0-9 0
per dozen	6 0-18 0	Rhodanthe, per doz.	6 0-9 0
Evergreens, in var.,		Roses, dozen	12 0-24 0
per dozen	6 0-24 0	Saxifrages, dozen	12 0-18 0
Ferns, in var., doz.	4 0-18 0	Scented Geranium doz	3 0-6 0
Ficus elastica, each	1 6-7 0	— Verbena, per doz.	4 0-6 0
Foliage plants, vari-		Spiræas, dozen	6 0-12 0
ous, each	2 0-10 0	Zinnia, per dozen	4 0-6 0

BEDDING-OUT PLANTS.

Per dozen, 1s. to 2s.; per box, 1s. to 3s.

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Arum Lilies, 12 blms.	2 0-4 0	Peonies, 12 bun.	9 0-18 0
Bouvardias, per bun.	0 6-1 0	Pelargoniums, 12 spr.	0 6-1 0
Carnations, 12 blms.	1 0-2 0	— do.	0 3-0 6
— dozen bunches	4 0-6 0	Pinks, 12 bun.	3 0-6 0
Chrysanthemums,		Poppies, 12 bun.	4 0-6 0
annual, 12 bun.	1 0-3 0	Primulas, double, 12	
Cornflower, 12 bun.	1 6-3 0	sprays	0 9-1 0
Eucharis, per dozen	3 0-6 0	Pyrethrums, 12 bun.	2 0-4 0
Forget-me-nots, 12		Rhodanthe, 12 bun.	4 0-6 0
bunches	2 0-4 0	Roses, Tea, per doz.	0 6-1 0
Gardenias, 12 blooms	1 6-4 0	— coloured, dozen	2 0-4 0
Heliotropes, 12 spr.	0 6-1 0	— red, per dozen	1 0-2 0
Iris, various, 12 bun.	3 0-9 0	— " 12 bunches	3 0-6 0
Lilium longiflorum,		— Safrano, dozen	0 9-1 6
12 blooms	3 0-5 0	— Moss, 12 bun.	0 9-12 0
Marguerites, 12 bun.	3 0-6 0	Spiræa, 12 bun.	4 0-6 0
Mignonne, 12 bun.	3 0-6 0	Stephanotis, 12 spr.	2 0-4 0
Orange Lily, 12 bun.	6 0-12 0	Sweet Sultan, 12 bun.	3 0-6 0
Pansies, 12 bun.	1 6-3 0	Tuberose, 12 blms.	0 6-1 0

*. Orchid bloom in great variety, but the demand not very good.

GARDENIAS.—Never had a finer stock of this beautiful Greenhouse Shrub. Specimen Plants from 3 to 5 feet high by same through, from 25s. to 60s. each. These are grand plants. Half Specimens, from 2 to 3 feet high, 5s. to 10s. each. To anyone wishing to stock a greenhouse, or to the Trade, this is a good opportunity to secure fine large plants.—E. COLLINS AND SONS, Cumberland Park Nurseries, Willesden Junction, W.

80,000 CLEMATIS, in Pots, of all the finest Double and Single Varieties (some of the flowers of which become 10 inches across, and are of every shade, from pure white to the darkest purple), for climbing and bedding, from 12s. to 24s. per dozen, strong plants; extra strong plants, repotted into 5½-inch pots, 2s. 6d. each; Beauty of Worcester, a magnificent purple, excellent for bedding, recently sent out by us, reduced price 2s. 6d. each. Descriptive LIST on application.—**RICHARD SMITH AND CO.**, Nurserymen and Seed Merchants, Worcester.

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ANEMONE FANNINI, strong cultivated roots, scarce, 12s. per doz.
AMARYLLIS VITTATA, red, white centre, fine bulbs, 75s. per 100.

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TUBEROSSES, double, picked, scarce this season, 40s. per 1000.
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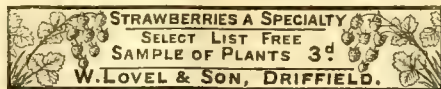
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BACHELOR'S WALK, DUBLIN.—Discount for Cash.

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THE GARDENERS' ORPHAN FUND. NOTICE.

THE ANNUAL GENERAL MEETING of the SUBSCRIBERS to this FUND will be held at the CANNON STREET HOTEL, on FRIDAY, July 13 next, for the purpose of receiving the Report of the Committee and the Accounts of the Fund for 1887-8, Electing Officers for the ensuing year, Amending Rule II., so as to read as follows:—"Foremen in private, public, and market gardens;" also for the Election of Six Children to the benefits of the Fund.

The Chair will be taken at 2 o'clock precisely, and the Ballot will Close at 4 o'clock. The DINNER will be held the same evening, at 5 o'clock, as previously advertised. Tickets 5s. each.

A. F. BARRON, *Honorary Secretary.*

Royal Horticultural Society's Gardens, Chiswick, London, W., June 25, 1888.

P.S.—The Voting Papers have all been issued. Any Subscriber not having received one is requested to communicate with the Secretary.

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of best quality, as supplied to the Royal Gardens, &c.

BEST COCOA-NUT FIBRE REFUSE, 10 sacks for 10s., 15 for 14s., 20 for 18s., 30 for 25s.; two ton truck, 28s. Free on rail.
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FINEST ORCHID PEAT, 7s. per sack.
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BEST BLACK FIBROUS PEAT, 4s. 6d. per sack, 5 for 20s.
COARSE SILVER SAND, 1s. 6d. per bushel; 14s. 1-ton;
PURE LEAF MOULD, 3s. per sack. [25s. per ton;
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BEST MUSHROOM SPAWN, 4s. per bushel.
RAFFIA, LABELS, STICKS, from 1 ft. to 5 ft., BAMBOO
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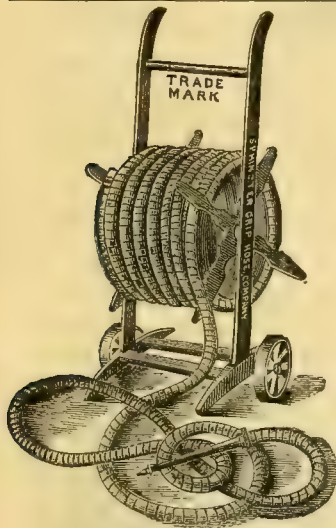
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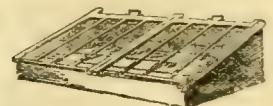
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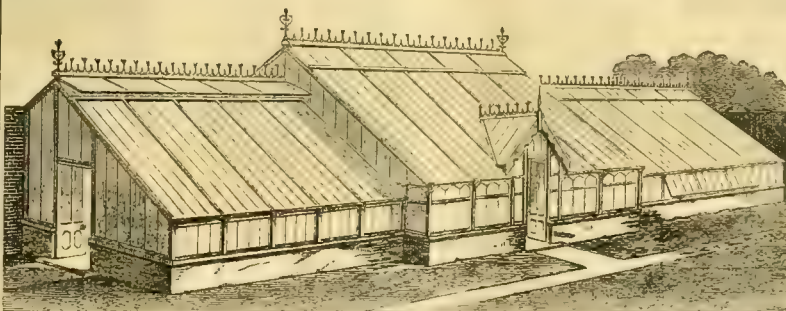
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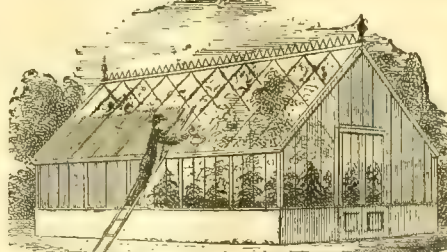
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Taganrog, Petersburg, and every other description of Russian Mats.

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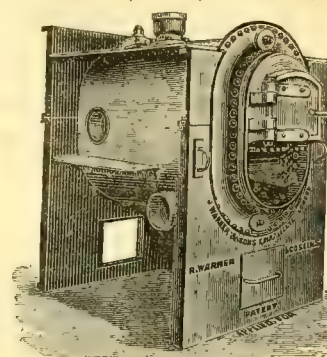
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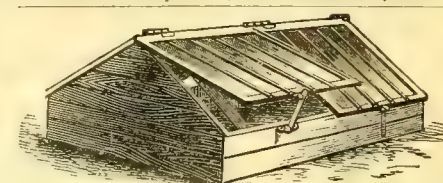
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The above are without exception the most useful kind of Frame for Plant Growing, and every one with a garden should possess one. The sashes turn right over one on to the other, and the boxes are put together with wedges, and can be taken apart in a few minutes. Sizes and prices, carriage paid to any station in England, ready glazed and painted:—

6 feet long, 4 feet wide, packing cases free	£3 15 0
12 feet long, 4 feet wide, " " "	4 15 0
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The glass is nailed and puttied in.

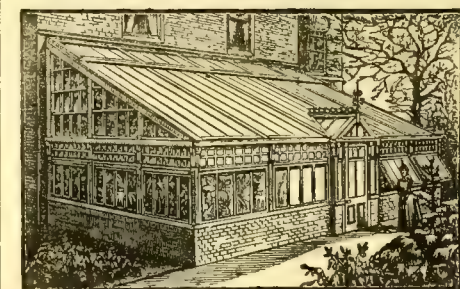
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FISH NAPKINS, 2s. 11d. per dozen. Dinner Napkins, 5s. 6d. per dozen. Table Cloths, 2 yards square, 2s. 11d.; 2½ yards by 3 yards, 5s. 11d. each. Kitchen Table Cloths, 11½d. each. Strong Huckaback Towels, 4s. 6d. per dozen. Monograms, Initials, &c., woven and embroidered.
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Best Quality Long Cloth, with 4-fold finest Linen Fronts, 35s. 6d. per half-dozen (to measure or pattern, 2s. extra). Patterns of materials used, also of newest styles in Fancy Cotton, Flannel, Silk, and Silk and Wool, sent free on application.

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made as good as new, with best material in Neckbands, Cuffs and Fronts, for 14s. the half-dozen.

Price Lists and Samples of Linen Collars, Cuffs, and all kinds of Linen Goods, post-free.

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Has an Open Steel Roller.

A man can work a 21-inch machine, cutting Grass 5 inches high clean to roots.

There is no easier working, no better finished, no stronger, no more durable mower in the market.

The Front Roller, with simple adjustment, enables the machine to cut very close to the ground, and to do fine work.

The machine will also cut verges.

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PILCHARD NETTING, ¾-inch mesh, 12 yards wide, 9d. yard; extra stout strong TANNED NET, 2 yards wide, 1½d. yard; 4 yards wide, 3d. yard; or 2 yards wide, 10s. per 100; 4 yards wide, 20s. per 100 yards. New TWINE NETTING, 1 yard wide, 1½d. yard; 2 yards wide, 3d. yard; 4 yards wide, 6d. yard; 12 yards wide, 1s. 6d. yard. COTTON NET, nine meshes to square inch, 1½ yard wide, 6d. to 7d. yard run.

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For taking Honey without the Destruction of the Bees.

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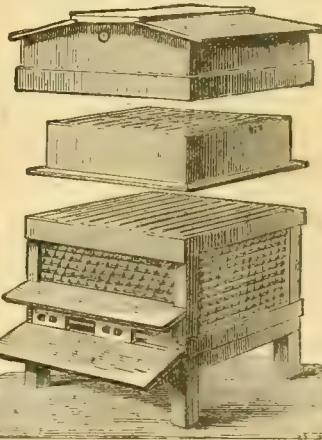
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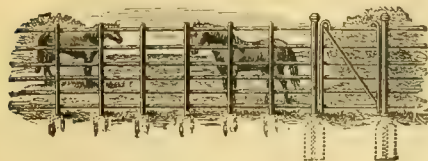
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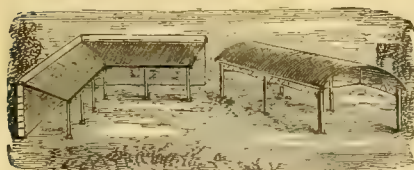
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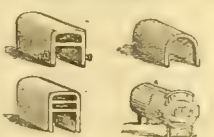
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Advertisements for the current week must reach the Office by
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All Subscriptions Payable in Advance.

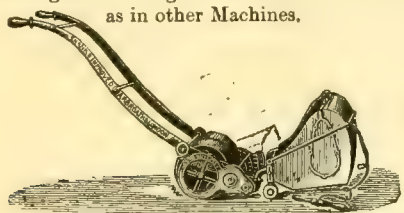
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THE ONLY LAWN MOWER FITTED WITH
DOUBLE EDGED SOLE-PLATE,
Enabling the Cutting Parts to last twice as long
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THESE MACHINES are strong, substantial, and
very easily worked. They make the Lawn like
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Prices of Hand Machines, with Grass Boxes, complete.

To cut 10 in. wide...	£3 10 0	To cut 19 in. wide...	£8 0 0
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Small Lawn Mowers, 6 in., 25s.; 7 in., 35s.; 8 in., 45s.
Horse and Pony Machines, with or without Patent Delivery
Apparatus.

SHANKS'S NEW LAWN MOWER, 'THE IMPROVED AMERICAN.'

The working parts are greatly reduced in number, and this
MACHINE is easier to work than any other in the
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PRICES.

10-inch Machine ...	£3 0 0	14-inch Machine ...	£4 15 0
12-inch " ..	4 0 0	16-inch " ..	5 10 0
Grass Boxes extra—10 and 12 in. sizes, 7s. 6d.; 14 and 16 in. sizes, 10s.			

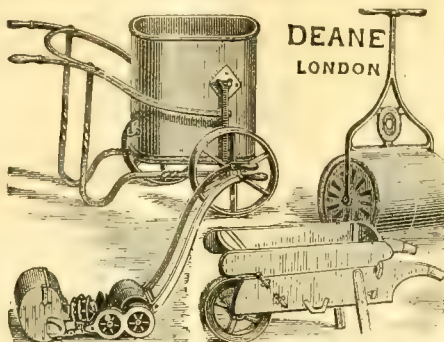
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workmen.

LONDON ADDRESS for Repairs:

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All the best makes in stock:
Excelsior, Invincible, Godiva,
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the Makers. Write for sample piece, of our best quality,
waterproof, tanned and oiled, 4 yards by 50 yards, 8s.; second
quality, 5s. 6d. Any size made to order. Trade supplied.
SPASHETT AND CO., Net Manufacturers, Lowestoft.

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BOXES, AQUARIA, ARTIFICIAL ROCKWORK for Ball-
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Horticultural Depot, 107, Church Street, Edgware Road, N.W.
Estimates and Illustrated Lists Free.

HORTICULTURAL GLASS.

A large quantity of all descriptions and
sizes in stock, at the lowest possible prices.
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Accidents all the Year Round.

Provide against them by Policy of the
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Moderate premiums—Favourable conditions—new concessions.
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have Bees. "The most practical work that has ap-
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A NURSERYMAN, with an OLD-ESTAB-
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to further Develop a Largely Increasing
Business.—Address, in first instance, Box 32,
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PARTNER WANTED, for Seed and Nursery-
man's Business, to develop extension of trade.—D. &
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WANTED, a good HEAD WORKING
GARDENER (Catholic). Small lodge and 26s. a week.
Good references from last place required.—Mrs. W., Hillside,
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WANTED, a HEAD WORKING
GARDENER, age about 30. Must be energetic and
thoroughly understand his profession in all branches.—Write
SQUIRE, May's Advertising Offices, 159, Piccadilly, W.

WANTED, a GARDENER, who understands
Orchids and Ferns. None but those who have had ex-
perience in this branch need apply.—E. COLLINS AND SONS,
Cumberland Park Nurseries, Willesden Junction, W.

WANTED, an experienced MAN, for 400 feet
of glass. Must understand Tomatoes, Cucumbers,
Strawberries, &c., for Market. Wages and commission.—Full
particulars, experience, age, &c., to R. E., *Gardeners' Chronicle*
Office, 41, Wellington Street, Strand, W.C.

WANTED, an active MAN, age 26, accus-
tomed to grow for Covent Garden Market, Cut
Flowers, Grasses, Tomatoes, &c. Used to packing. Wages 22s.
weekly.—GROWER, 41, Wellington Street, Strand, W.C.

WANTED, a good strong young MAN for
Houses and Outside Work, and able to take part in
Church Choir.—Applicants will have particulars on receipt of
stamped envelope from W. M. GEDDES, Thrumpton, Derby.

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WANTED, for an Estate in Wales, a
WOODMAN, married. Charge not extensive, but
thoroughly reliable respectable man required.—Apply by letter,
stating full particulars, to WOODMAN, Dickson's Nurseries,
Chester.

Head Shopman.

WANTED, a thoroughly qualified MAN, to
take the Superintendence of a large Retail Business.
Must thoroughly understand Vegetable, Flower, and Bulb
Departments. May have to Travel occasionally. Unexceptional
references required.—State salary required, where last em-
ployed, age, &c., S. S., Messrs. Hurst & Son, 152, Houndsditch,
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To the Seed Trade.

TRAVELLER.—A large Retail Firm in
the Provinces, REQUIRES a REPRESENTATIVE, who
thoroughly knows the Seed Trade in all its branches, and has
been accustomed to Travel and attend Markets. To a thoroughly
competent man a liberal salary will be given.—Address, with
full particulars of experience, where last employed and how
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WANTED, a TRAVELLER, with a good
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WANTED, a TRAVELLER, used to the Road,
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WANTED, Gardeners and Others, to accept
AGENCY for our CHOICE CEYLON TEAS, to sell
among Private Families. We give 6d. per pound on the 2s.
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Apply for samples, free.—UNITED TEA GROWERS AS-
SOCIATION, Union Court, E.C. (Est. 1877.) Name paper.

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MR. JOHN SMOLLET, late Gardener at Putney
Park Lodge, S.W., has been appointed Head
Gardener to L. PHILLIPS, Esq., Beaulieu,
Winchmore Hill, N.

MR. ANGUS MCKINNON, late Head Gardener
to the Baron W. von SCHRODER, The Rockery,
Nantwich, Cheshire, has been appointed Head
Gardener and Bailiff to W. E. HEARD, Esq.,
Machen House, Newport, Monmouthshire.

MR. WILLIAM WEBBER, late Foreman, at
Lowther Castle, Penrith, has been appointed
Head Gardener to Mrs. SEYMOUR, Morton Hall,
Daventry, Northamptonshire.

MR. JAMES WEBSTER has been appointed
Gardener to T. G. GROVES, Esq., Brockley Hill
House, Stanmore, Middlesex.

WANT PLACES.

Head Gardeners.

MESSRS. J. LAING AND CO. can at present
recommend with every confidence several energetic and
practical MEN of tested ability and first-rate character. Ladies
and Gentlemen in want of GARDENERS and BAILIFFS, and
HEAD GARDENERS for first-rate Establishments or Single-
handed Situations, can be suited and have full particulars by
applying at Stanstead Park and Rutland Park Nurseries,
Forest Hill, London, S.E.

RICHARD SMITH AND CO.
beg to announce that they are constantly receiving
applications from Gardeners, seeking situations, and that they
will be able to supply any Lady or Gentleman with particulars,
&c.—St. John's Nurseries, Worcester.

B. S. WILLIAMS begs to intimate that he has at present in the Nursery and upon his Register some excellent Men, competent either to fill the situation of **HEAD GARDENER, BALIFF, FOREMAN, or JOURNEYMAN.** Ladies and Gentlemen requiring any of the above will please send full particulars, when the best selections for the different capacities will be made.—Holloway, N.

SCOTCH GARDENERS.—**JOHN DOWIE** (of the late firm of Downie & Laird), Seedsman, 144, Princes Street, Edinburgh, has at present on his List a number of **SCOTCH GARDENERS**, waiting re-engagements. He will be pleased to supply full particulars to any Lady, Nobleman, or Gentleman requiring a trustworthy and competent Gardener.

GARDENER (HEAD), where four or more are kept.—Age 45; thoroughly practical in all branches. Nine years in present situation. Good character. Can be well recommended by employer.—J. W. Youngsbury, Ware.

GARDENER (HEAD).—Middle-aged, married; first-rate Grape and Plant Grower, and good Kitchen Gardener. Good character.—P. 3, Arney's Cottages, Sutton Common, Surrey.

GARDENER (HEAD).—Age 30; married when suited; sixteen years' experience in all branches of the profession. Good character and testimonials by present and previous employers.—W. ELY, Bellevue Cottage, Braintree, Essex.

GARDENER (HEAD).—Age 38, married; has had thorough practical experience in Growing Fruits, Flowers, and Vegetables in quantities, and General Management of good establishments, and Marketing Surplus Produce. Good testimonials.—T. A., 45, Queen's Road, Notting Hill, W.

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GARDENER (HEAD), where more are kept.—Age 30, married, no family; thoroughly understands Stove and Greenhouse Plants, and Flower and Kitchen Gardening. Leaving through owner giving up place.—A. HAWKES, Palewell, East Sheen, S.W.

GARDENER (HEAD).—Age 30; single at present; fifteen years' experience in all branches. Highly recommended by his present employer, with eight years' good character as Foreman.—W. FISHER, 6, South Cottages, York Road, Weybridge.

GARDENER (HEAD); age 30, married when suited.—Mr. COTTERELL, Spanish Road, Wandsworth, Surrey, S.W., wishes to recommend T. Keene as above. Fifteen years' experience in Early and Late Forcing of Fruits, Flowers, and Vegetables; also Flower and Kitchen Gardening.—Please apply as above.

GARDENER (HEAD WORKING), where two are kept.—Age 27; married when suited.—C. BLICK, can with confidence recommend to any Lady or Gentleman requiring a steady, trustworthy man as above, T. Lupton, Gardens, Summerfield House, Elstree, Herts.

GARDENER (HEAD WORKING); age 29, single at present.—Mr. G. WATTS, Head Gardener to H. F. Locke King, Esq., Brooklands, Weybridge, Surrey, can with confidence recommend his Foreman, J. Howes, as above. Thoroughly honest and trustworthy.

GARDENER (HEAD WORKING).—Age 37, married; twenty years' practical experience in Early and Late Forcing of Fruit, Flowers, and Vegetables. Good Flower and Kitchen Gardener. First-class character from present and previous employer.—H. A. S., 26, Primrose Hill Road, South Hampstead, N.W.

GARDENER.—Age 38, married; good experience in Vineries, Peaches, Stove and Greenhouse Plants, also Kitchen Gardening. Eleven years' good reference.—J. D., 12, Clarence Street, St. Thomas, Exeter.

GARDENER; married, no family.—A LADY wishes to recommend her Gardener, who is thoroughly competent to undertake Vinery, Greenhouse, &c. Honest, steady and respectable.—Apply by letter to H., 30, Pembroke Square, Bayswater, W.

GARDENER.—A GENTLEMAN wishes to recommend his Gardener. Very respectable and hard-working. Especially successful in Kitchen Garden and Vines. Leaving through no fault.—W. S., —A. D. Robertson, Esq., Caen Leys, Ashhead, Surrey.

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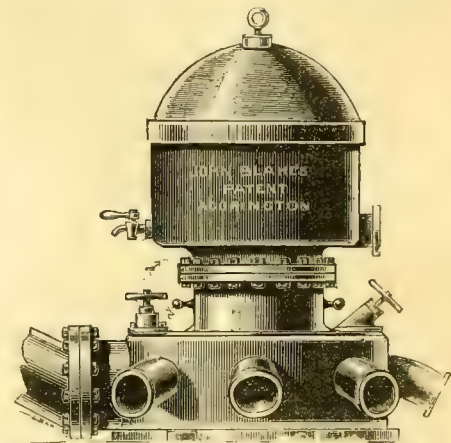
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Surplus Cut Flowers.

HOOPER and CO. (Limited) RECEIVE and DISPOSE of any quantity of above at best Market Prices. Boxes, &c., supplied.—Address, Commission Department, HOOPER and CO. (Limited), Covent Garden, W.C.

MESSRS. GREGORY and EVANS,

NURSERYMEN, Sidcup, and 285, 286, 287, 288, Flower Market, Covent Garden, W.C., are open to RECEIVE CONSIGNMENTS of Choice CUT FLOWERS in any quantity for their Commission Department. Boxes and Labels supplied. Telegraph Address—"COMMISSION, SIDCUP."

WANTED, TREE CARNATIONS, also

Rooted Cuttings, STOVE and GREENHOUSE PLANTS, Florist TULIPS (named), CINERARIAS and PRIMULAS, in quantity, from or in pans. Auriculas, named—Primulas, herbaceous kinds, named. Price, &c., to
C. R. Gardeners' Chronicle Office, 41, Wellington Street, Strand, W.C.

SUTTON'S FLORISTS' FLOWER SEEDS.

Sutton's Begonia | Sutton's Cyclamen
Sutton's Calceolaria | Sutton's Gloxinia
Sutton's Cineraria | Sutton's Primula, &c.
The finest strains in existence.
Price LIST Post-free.
Sutton's Seeds Genuine only direct from
SUTTON and SONS, Reading.

The Best Present for a Gardener.

VINES and VINE CULTURE.
The most complete and exhaustive Treatise on
Grapes and their Culture ever published.
New Edition.
Price 5s., post-free 5s. 6d.

A. F. BARRON, Royal Horticultural Society, Chiswick.

BEAUTIFUL JAPANESE IRIS.—The most

beautiful of all hardy Irises. Strong flowering plants in pots. Best and most beautiful named varieties. All distinct. 21s. per dozen.
BARR and SON, King Street, Covent Garden, W.C.

GARDENIAS.—Never had a finer stock of

this beautiful Greenhouse Shrub. Specimen Plants from 3 to 5 feet high by same through, from 25s. to 60s. each. There are grand plants. Half Specimens, from 2 to 3 feet high, 5s. to 10s. each. To anyone wishing to stock a greenhouse, or to the Trade, this is a good opportunity to secure fine large plants.—E. COLLINS and SONS, Cumberland Park Nurseries, Willesden Junction, W.

CREEPERS FOR WALLS.—By planting

what is suitable, an ugly object may easily be made beautiful. Most being in pots, can be sent and put out at any time. Descriptive LIST and advice Free.—RICHARD SMITH and CO., Nurserymen and Seed Merchants, Worcester.

ADIANTUM WALTONII (New Hybrid).

This graceful Fern is now being sent out. For full description see *Gardeners' Chronicle* for June 23, 1888. Good strong Plants with 5 to 7 fronds, 2s. 6d. each, 6 for 12s. 6d.; smaller plants, 1s. 6d. each, 6 for 7s. 6d.

Exors. of HENRY WALTON, Edge End Nursery, Brierfield, Burnley, Lancashire.

Palms, clean and healthy.

WILLIAM ICETON has a very extensive stock of all the leading kinds, in fine condition; 20 houses being devoted to their growth, many being fit for exhibition of the following varieties:—*Areca lutea*, *Cocos flexuosa* and *Weddelliana*, *Kentias* of all kinds; *Seaforthia elegans*, *Latania borbonica*, *Phoenix reclinata*, *rupicola*; also a very large assortment of Palms in 60's and 48's for table. Inspection invited.—Putney Park Lane, S.W.; and 129 and 130, Flower Market, Covent Garden, W.C.

FERNs.—FERNs.—FERNs.—Gonophlebium

subauriculatum.—A fine stock of this elegant Basket Fern, strong established plants, in 3-inch pots. My stock of Ferns is by far the largest in the kingdom, including immense quantities of all the leading and popular sorts, in various sizes; also a great number of choice species and varieties. An inspection is respectfully invited. Prices on application.
H. B. MAY, Dyson's Lane Nursery, Upper Edmonton.

Eucharis—Eucharis—Eucharis.

FOR SALE, a stock of good Specimen Plants of EUCHARIS AMAZONICA in No. 12 pots, free from bug, and acknowledged to be the strongest and healthiest stock in the Trade.

T. DODD, Brunswick Road Nurseries, Bexley Heath.

SIMPLE INSTRUCTIONS by which an

abundance can be insured of delicious MUSHROOMS.
See Seed LIST, Free.
RICHARD SMITH and CO., Seed Merchants and Nurserymen, Worcester.

PEAT for Orchids, Hard-wooded Plants,

Ferns, &c., of best quality, can now be supplied from Summer Cutting, Wholesale or Retail. Samples and quotations on application to
The PEAT ASSOCIATION, 10, Cullum Street, London, E.C.

W. H. LASCELLES and CO.,

HORTICULTURAL BUILDERS,
121, BUNHILL ROW, LONDON, E.C.
Plans and Estimates Free.
See large Advertisement, July 7, page 5.

SALES BY AUCTION.

Wednesday Next.—(Sale No. 7709.)

The remaining portion of the Valuable Collection of ORCHIDS formed by the late JOHN DAY, Esq., of Tottenham.

MR. J. C. STEVENS begs to announce that he has been favoured with instructions from the Executors of the late John Day, Esq., to SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY NEXT, July 18, at half-past 12 o'clock precisely, the Remaining Portion of his valuable COLLECTION of ORCHIDS, comprising—

Odontoglossum Andersonianum lobatum	Cattleya Trianae, superb forms
" Wilckeanum	Angraecum caudatum
" Ruckerianum	Odontoglossum Alexandrae
Cattleya Warneri, superb forms	" Pescatorei
	Thyrsopetris elegans, with 7 fronds—very rare

A choice collection of Cypripediums, &c.

On view morning of Sale, and Catalogues had.

Wednesday Next.—(Sale No. 7709.)

UNIQUE and VALUABLE WATER-COLOUR DRAWINGS of ORCHIDS.

MR. J. C. STEVENS has been favoured with instructions from the Executors of the late John Day, Esq., of High Cross, Tottenham, to include in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY NEXT, July 18, the Unique and Valuable Collection of Life-size WATER-COLOUR DRAWINGS of ORCHIDS, by Durham, contained in 22 bound volumes, together with 44 loose Drawings, and 5 framed, ditto.

On view morning of Sale, and Catalogues had.

Wednesday Next.—(Sale No. 7709.)

VALUABLE and EXTENSIVE HERBARIUM.

MR. J. C. STEVENS has been favoured with instructions from the Executors of the late John Day, Esq., of High Cross, Tottenham, to include in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY NEXT, July 18, his splendid HERBARIUM, contained in seven well made Fine Cabinets, comprising specimens of Ferns of nearly every known variety.

On view morning of Sale, and Catalogues had.

Thursday Next.—(Sale No. 7710.)

80,000 SEEDS of AKECA BAUERI, just received direct.

MR. J. C. STEVENS will include the above in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, July 19, on view morning of Sale, and Catalogues had.

Thursday Next.—(Sale No. 7710.)

SPECIAL SALE of ORCHIDS in FLOWER and BUD.

MR. J. C. STEVENS will include in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, July 19, a fine Collection of ORCHIDS in FLOWER and BUD, comprising *Oncidium macranthum hastiferum*, *Anguloa Ruckeri sanguinea*, *Odontoglossum Alexandrae*, *O. vexillarium*, and *O. hybridum*; fine *Masdevallias*, *Cattleyas*, &c.

On view morning of Sale, and Catalogues had.

Thursday Next.—(Sale No. 7710.)

VALUABLE ESTABLISHED ORCHIDS.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, July 19, at half-past 12 o'clock precisely, by order of Mr. F. Sander, a splendid lot of Established ORCHIDS. Amongst those offered for Sale are:—

<i>Aërides Sanderiana</i>	<i>Masdevallia Wagneriana</i>
<i>Crologyne cristata alba</i>	<i>Lycaste Barringtonia</i>
" " maxima, St. Albans variety	" " Skinneri alba
" " Forstermanni	" " Stella
" " Sanderiana	" " Schroderiana
<i>Cypripedium albanense</i>	" " Veitchii
" " Curtisii	" " pardianum
" " Druryi	" " Schilleriana
" " Schomburgkianum	<i>Phalaenopsis Sanderiana</i>
" " Dominii rubescens	<i>Trichopilia Galleottiana</i>
<i>Masdevallia elephantaiceps</i>	" " suavis alba
" " hieroglyphica	<i>Warszewiczella Wendlandii</i>
" " Geleuana	
" " radica	

Also some very fine varieties of *Odontoglossum Alexandrae* in flower, &c.

On view morning of Sale, and Catalogues had.

Tuesday Next.

ESTABLISHED and IMPORTED ORCHIDS.

MESSRS. PROTHEROE and MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on TUESDAY NEXT, July 17, at half-past 12 o'clock precisely, a large quantity of well-grown ESTABLISHED ORCHIDS, various IMPORTED ORCHIDS from Messrs. J. W. Steel & Co., consisting of *Cattleya velutina*, *Oncidium crispum*, *O. sarcodes*, *Lælia cinnabarina*, *L. purpurata*, and *Sophranitis grandiflora*; also a small importation of *Angraecum sesquipedale*, 6 cases of *Cattleya Mendelii* received direct for unreserved Sale, &c.

On view morning of Sale, and Catalogues had.

Friday Next, July 20.

Important SALE of the whole of the COLLECTION of ESTABLISHED ORCHIDS (excepting the Cool-house Orchids), by order of the Executors of the late H. Littleton, Esq., of Westwood House, Sydenham, without reserve.

MESSRS. PROTHEROE and MORRIS are instructed to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY, July 20, at half-past 12 o'clock precisely, without reserve, the COLLECTION of ESTABLISHED ORCHIDS, formed by the late H. Littleton, Esq. (except the Cool-house Orchids), including fine specimen *Pescatorea Lehmanni*, several fine *Vandas*; about 200 *Cattleyas*, including *gigas*, *labiata*, *Mendelii*, *Mossiae*, *Trianae*, and others; fine pieces of *Odontoglossum*, *Uro-Skinneri*, *Insleyi*, *Leopoldianum*, and *Londesboroughianum*; several large *Crologyne cristata*, *Cypripedium venustum*, *vellosum*, *hirsutissimum*, *caudatum*, and others; fine piece of *Epidendrum prismatocarpum*; specimen *Cymbidium eburneum* and *Parishii*; *Aërides* and *Dendrobies* in variety; a fine lot of *Cypripedium niveum*, and *Calanthe Veitchii* *Phalaenopsis*; also twelve fine specimen *Eucharis amazonica*, in splendid health, and four *Panacraum fragrans*.

On view morning of Sale, and Catalogues had.

Friday Next.

IMPORTED ORCHIDS FOR SALE, WITHOUT RESERVE.

MESSRS. PROTHEROE and MORRIS will include in their SALE by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY NEXT, July 20, without reserve, IMPORTED ORCHIDS, in fine condition, from Messrs. Shuttleworth, Carder & Co., including *Odontoglossum crispum* (*Alexandrae*), of the best type; *O. grande*, breaking freely; *Huntleya albidula*, very rare; *Oncidium verucosum* *Rogersii*, *O. Brienianum*, *Cattleya Sanderiana*, *C. Mendelii*, *C. Dormaniana*, &c. Also (another property) grand masses, in fine condition, of the handsome pure white *Epidendrum bicoloratum*, the large-flowered, free-growing variety.

On view morning of Sale, and Catalogues had.

Friday Next.—Without Reserve.

EPIDENDRUM BICOLORATUM.

MESSRS. PROTHEROE and MORRIS will include in their SALE of ORCHIDS on FRIDAY NEXT, grand masses, in fine condition, of the handsome pure white *Epidendrum bicoloratum*, the large-flowered, free-growing variety, totally distinct from the small-growing kind which is invariably imported, together with a few lots of *Oncidium Lawrenceanum* from a new quarter, and a probably new and very floriferous *Epidendrum*, of the habit of *E. Ibaguense*, not seen in flower.

On view morning of Sale, and Catalogues had.

The Downside collection of Orchids.

SECOND PORTION.

HIGHLY IMPORTANT SALE of the whole of this renowned Collection, including many plants matchless in point of rarity, and the whole remarkable culture and condition, embracing unquestionably the most valuable and extensive Collection of

ESTABLISHED ORCHIDS

ever submitted to Public Competition.

MESSRS. PROTHEROE and MORRIS will SELL by AUCTION, on the Premises, Downside, Leatherhead (fifteen minutes' walk from the London and South-Western, and London, Brighton, and South Coast Railway Stations).

On TUESDAY, WEDNESDAY, THURSDAY, and FRIDAY

July 24, 25, 26, and 27, 1888,

at half-past 12 o'clock precisely each day, by order of Wm. Lee, Esq. (who is selling the Estate of Downside, and relinquishing the cultivation of Orchids), the SECOND PORTION of this extremely valuable Collection of

ESTABLISHED ORCHIDS.

Amongst the plants included in the Second Sale, the following may be specially mentioned:—

Cattleya Trianae	General	Cattleya Trianae	Leeana
" " Gordon	" " Dodgsoni	" " Osmani	" " alba
" " Chelsoni	" " tricolor	" " regina	" " Normanii
" " Edinburghii	" " protus	" " Enckhausiana	" " Victoria Regina
" " trilobus	" " formosa	" " magnifica	" " Archduke
" " Emiliæ	" " Archduchess	" " Orion	" " Wallisii

And many others not yet named, with their portraits by G. Macfarlane, the whole forming probably the grandest collection of fine varieties of the Trianae section ever brought together, many of the plants, moreover, being of the largest size.

<i>Cypripedium Morganie</i>	<i>Lælia callistoglossa</i>
" " chloroneurum	" " Amesiana
" " Schroderae	" " Wolstenholmei
" " Wallisii	" " anceps Calvertiana
" " tessellatum porphyreum	" " Dawsoni
" " calophyllum	" " elegans Turneri
" " Harrisonianum superbum	" " purpurata Brysiana
" " insigne aureum	<i>Oncidium ornithorhynchum</i>
" " selligerrum majus	" " album
" " superciliale	<i>Odontoglossum Leeanum</i>
" " onanthum superbum	<i>Trichopilia suavis alba</i>
" " politum	<i>Pachystoma Thomsoni</i>
" " Ashburntoni	<i>Bulbophyllum sarcoccephalum</i>
" " grande	<i>Masdevallia</i> (the original Bull's Blood), part of the plant certificated, 1873
" " Godefroyæ	<i>Vanda Sanderiana</i>
" " Leeanum superbum	" " s'avis
" " Seideni candidulum	" " Denisoniana hebraica
" " Auguste Regnier	" " tricolor Patersoni
<i>Cattleya calummatata</i>	" " Warneri
" " exoniensis	" " Russelliana
" " labiata (autumn flowering)	" " Downside variety
" " Skinneri, grand specimen	<i>Saccolabium Heathii</i>
" " alba	" " Harrisonianum
" " Percivaliana, special varieties	<i>Dendrobium nobile nobilissimum</i> , the well-known large plant
" " alba	" " splendissimum grandiflorum
" " Mossiae alba	" " stratiotes
" " Southgatei	" " Kingianum album
" " Mendelii, special varieties	" " Phalaenopsis
" " Germinyana	" " Harveyanum
" " Mardellii	<i>Coclogyne cristata alba</i>
" " Mastersoniae	" " Lowii
" " Hardyana	<i>Cymbidium Parishii</i>
" " Ludemanniana brilliantissima	<i>Maxillaria Sanderiana</i>

MASDEVALLIA SECTION

comprises a grand and complete collection of *Masdevallias*, many of the highest class, and some very rare.

ODONTOGLOSSUM SECTION.

There is a large and very choice collection of the finest varieties in large plants, true to name, which have been grown at Downside for several years, and are models of successful cultivation.

PHALAENOPSIS SECTION.

Amongst the *Phalaenopsis* are two plants of *P. Brymeriana*, and one of the true variety *Dayana*.

The plants may be viewed any day prior to the Sale, on presentation of card to view. Catalogues are now ready, and may be obtained of Mr. WOOLFORD, the Head Gardener, on the Premises; and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

Monday, July 23.

MESSRS. PROTHEROE and MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on MONDAY, July 23, at half-past 12 o'clock precisely, by order of Mr. F. Sander, valuable IMPORTED ORCHIDS, including *Cattleya Mendelii*, a splendid importation, just arrived, among which are some very fine masses, abundantly furnished with healthy foliage; *C. Mossiae*, in good condition; *C. Bowringiana*, large importation of the above in good condition; *Aërides Feldingii*, *Cattleya amethystina*, *C. citrina*, the rare *Oncidium pyramense*, *O. undulatum*, specially selected masses of *O. ornithorhynchum*, *O. Forbesii*, *Epidendrum ciliolare*, specially fine masses of *Odontoglossum Cervantesi*, *O. nebulosum*, *O. maculatum*, *O. Rossii*, *Saccolabium Blumei majus*, *S. guttatum*, *Sophranitis grandiflora*, &c.

On view morning of Sale, and Catalogues had.

Orchids in Flower.—Special Sale, July 31.

MESSRS. PROTHEROE and MORRIS desire to announce that their NEXT SPECIAL SALE of ORCHIDS in FLOWER will take place as above, for which they will be glad to RECEIVE NOTICE of ENTRIES as early as possible.

67 and 68, Cheapside, London, E.C.

Friday, August 17.

The remaining portion of the valuable Collection of Established ORCHIDS, formed by F. A. Philbrick, Esq., Q.C., of Oldfield, Bickley.

MESSRS. PROTHEROE and MORRIS beg to give notice that they will SELL the above by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY, August 17.

Further particulars will appear.

Kingston, Surrey.

By order of the Executors of the late Mr. Thomas Jackson. IMPORTANT SALE of VALUABLE FREEHOLD and LEASEHOLD PROPERTIES.

Preliminary Notice.

MESSRS. PROTHEROE and MORRIS are favoured with instructions to SELL by AUCTION, at the Mart, Tokenhouse Yard, London, E.C., on THURSDAY, August 30, (first in one lot, and if not then sold, then in separate lots), the Valuable FREEHOLD ESTATE known as the Kingston Nursery, Kingston, containing a total area of 2 acres, with the modern detached Freehold Residence, 22 Greenhouses and numerous Outbuildings, and the Goodwill of the old-established Nursery and Seed Business, the desirable Freehold House and Shop in Thames Street, Kingston, now utilised as a Seed Shop, with 2 Cottages and Stabling adjoining, also the several Leasehold Nurseries known as the Kingston Hill Nursery, containing an area of 12 acres 3 rods 10 perches, the Nursery in Park Road, Norbiton, area 10 acres, and the Long Ditton Nursery, Long Ditton, area 15 acres 0 rods 13 perches.

The Purchaser or Purchasers will have the option of taking the Stock in the respective lots at a valuation to be made in the usual way.

May be viewed. Particulars and Plans obtainable at the Mart; of G. C. SHERRARD, Esq., Solicitor, 26, Lincoln's Inn Fields, W.C.; and of the Auctioneers and Surveyors, 67 and 68, Cheapside, London, E.C., and Leytonstone.

City of Peterborough.

HIGHLY IMPORTANT PROPERTY.

To Innkeepers, Confectioners, Horticulturists, Florists, Seed Merchants, and Others.

The Old-established, full Licensed RESTAURANT, with large Dining Rooms, Confectioners', Fruiterers', and Seed and Flower Shops, situated in Church Street, Peterborough, opposite the Corn Exchange, in which a very extensive business has been carried on for many years past.

Copypold of the Manor of Peterborough. Fine small and certain.

Also the Extensive FREEHOLD NURSERY in Eastgate, with twelve Glass Houses, Ice House, Stables with Loft over, Gig House, Office and Potting Sheds, and the excellent newly erected Brick and Slated Residence, with Out-offices at the south end thereof.

The CONVENIENT YARD on the north side of Eastgate, opposite the Nursery, with the long range of Sheds and other Buildings standing thereon, having an area of 1 road 15 perches, of which 25 perches is Freehold, and the remainder Copypold of the Manor of Peterborough.

And also a FREEHOLD FIELD containing 3 a. 1 r. 0 p. (more or less), now used as a Nursery Ground, and having an immediate prospective value as Building Land.

The whole property is in the occupation of Mr. John House, or his Trustee.

MR. JOHN FOX will SELL the above by AUCTION, by order of the Mortgagees, at the "Angel Hotel," Peterborough, on SATURDAY, July 28, 1888, at 3 for 4 o'clock in the afternoon, in Lots, subject to such Conditions of Sale as will be then produced, and the Trustee under Mr. House's Liquidation will, if desired, concur in the Sale for the purpose of transferring the Goodwill of the Business to the Purchasers.

A Plan of the Estate may be seen at the Office of the Auctioneer, Bridge Street, Peterborough; and further information may be obtained on application either to him or to Messrs. VERGETTE and BUCKLE, Solicitors, Peterborough; or at my Offices in Whittlesey.

JOHN FEED, Vendor's Solicitor.

Whittlesey, July 2, 1888.

To Market Growers, Florists, Gardeners, and others.

MESSRS. PROTHEROE and MORRIS have on their Books for Sale several MARKET NURSERIES, the purchase-money varying from £500 to £5000. Also numerous well-established general NURSERY and FLORIST BUSINESSES.

Apply, stating requirements, to Messrs. Protheroe & Morris, 67 and 68, Cheapside, London, E.C.

Nurserymen, Florists, and Gardeners.

FOR SALE (through dissolution of partnership), the BLACKHEATH NURSERIES, a going concern, in the centre of a wealthy residential neighbourhood, 7 miles from Covent Garden. The long Lease of a compact well-established Nursery of 2 acres, with Stand in Covent Garden Field Market, 6 Greenhouses, 125 by 13 feet; and 1 House, 105 by 30 feet; all exceptionally well built and heated. A good jobbing business could also be done.

Apply, R. J. SUTER, 6, Eastcombe Terrace, Blackheath.

TO BE SOLD, LEASEHOLD NURSERY,
in best part of London, 4 miles from Covent Garden.
Good living, Seven Houses. Good Dwelling-house. Opposite
a Station. Contracts pay all rent. 40,000 Plants. Price,
£150, or would TAKE PARTNER with £250.
Apply to S. T., *Gardeners' Chronicle* Office, 41, Wellington
Street, Strand, W.C.

TO BE SOLD (a rare opportunity), a
Valuable and most Eligible FREEHOLD and FLORIST'S
NURSERY. The property is pleasantly situated on a main
road about 2 miles out of Leicester—which is one of the most
thriving manufacturing towns in the Midlands—in a good
locality. It consists of three (red brick and slated) well-built
bay-windowed Villa Residences, containing eight rooms and
two cellars each, with Gas and Water, at the rear of which
are seven large Glasshouses (numerous Pits and Outhouses)
heated by hot-water. Superficial Area of Glass, over 4000 feet.
All in good state of repair. Also a large Garden, with river
frontage, well stocked with Fruit Trees in full profit. The
whole standing on about 2600 square yards of Land, and
bringing in a rental of £96 per annum. Stock low.
For further particulars apply on the Premises to the owner,
Mr. S. WALKER, Aylestone Park, Leicester; or HARRISON
AND SONS, Market Place, Leicester.

TO BE SOLD, SEEDSMEN, &c.
a well-established BUSINESS, capable of extensive
improvement under good management. First-class neighbour-
hood and thoroughfare.
Apply to NORRIS AND CO., Estate Agents, Watford.

FOR SALE or LEASE, a handsome detached
old-fashioned truly countryfied HOUSE, 2 floors, 2 acres
Ground. Mile station, 13 London.—Dr. GILL, Whitton, S.W.

TO BE SOLD, the LEASE of a Country
NURSERY with useful stock at a valuation, or would
take a Partner.
J. D. G., *Gardeners' Chronicle* Office, 41, Wellington Street,
Strand, W.C.

South of England.
LARGE GARDEN, 20 Acres, with Twenty
Greenhouses and Vineries. £7000 has been spent on the
property. Seven years' lease. Two cottages inclusive. £150
a year. ELDRIDGE, Portsmouth.

TO LET, a Small JOBBING and FLORIST'S
NURSERY, consisting of 4 Houses and several Pits,
excellent situated, in most fashionable part of Leicester. An
advantageous opportunity for an energetic and enterprising
man.—Apply, HARRISON AND SONS, Royal Midland Road
Establishment, Leicester.

TO BE LET, on Lease, 7, 14, 21, or 99 years,
1 to 10 acres of excellent GRASS LAND. Rents from
£8 to £12 per acre. Suitable for Nurserymen, Florists, &c.,
with the option of purchase at any time. Near the main road,
Enfield Highway, about 9 miles from London. No tithes or
land tax. Apply to the owner,
Mr. H. MOORE, 59, Bishopsgate Street Within, E.C.

TO BE LET, a TOWN MANSION, with
large and singularly picturesque Gardens of 1½ acre,
believed in with fine old Timber, affording shade and retirement;
Lodge, first-class Stabling, Glasshouses, full-sized Billiard-
room, full-sized secluded Tennis Lawn and all accessories.
House for many years in same occupation and is in excellent
repair. It is but seldom that a property of the kind can be
secured, affording as it does adjuncts which are usually only
obtainable in the country, although in this case within but
little more than a mile of Regent Street.
Messrs. LUMLEY, 22, St. James's Street, S.W.; or Messrs.
DEBENHAM, TEWSON, FARMER, and BRIDGEWATER,
80, Cheapside, E.C.

Durant's Arbour Estate, Ponder's End, Middlesex.
To NURSERYMEN, FLORISTS, and OTHERS.
TO BE LET, on Lease, for 21, 60, or 80 years,
1 to 50 acres of excellent MEADOW LAND, from £8 to
£11 per acre, with the option of the purchase of the freehold
within the first 9 years. No title or land tax.
Apply to A. AND G. GUIVER, Land Agents, &c., Ponder's End.
N.B. Several Nurseries established on the estate.

ORCHIDS.

THE LIVERPOOL HORTICULTURAL CO.
(JOHN COWAN), Limited,

Have just received large and fine importations
of the following

ORCHIDS:

CATTLEYA MENDELII,
" AMETHYSTOGLOSSA,
" GUTTATA LEOPOLDI,
LELIA PURPURATA,
MILTONIA CANDIDA GRANDIFLORA,
" SPECTABILIS MORELIANA,
SOPHRONITIS GRANDIFLORA, &c.

Full particulars on application.

THE VINEYARD AND NURSERIES,
GARSTON, near LIVERPOOL.

A DIANTUM CUNEATUM, MAIDENHAIR
FERN. Strong healthy Plants in thumbs, 16s. per
100; well-furnished stuff, in 18's, 50s. per 100. Cut Ferns, 6s.
per dozen bunches. For cash with order.
H. ROSE, Oakfield Nursery, Hampton.

PRIMULAS—PRIMULAS—PRIMULAS.
Grand Premier Prize and Covent Garden strains. Fine
large trusses, beautifully fringed flowers, and new colours.
Good Plants, to bloom well, per dozen, 1s. 3d.; extra strong,
1s. 6d.; per 100, 9s. All carriage free.

CINERARIAS—CINERARIAS.—Bull's and
Cannell's celebrated Prize Strains, and most brilliant
colours. Cannot be excelled. Good Plants to bloom well,
per dozen, 1s. 3d.; extra strong, 1s. 6d.; per 100, 9s. All
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EAST LOTHIAN INTERMEDIATE STOCKS.
THOMAS METHVEN AND SONS
offer their choice strain of the above, in five varieties,
viz., Scarlet, Purple, White, Crimson, and White Wall-leaved,
at 1s., 2s. 6d., and 3s. each colour. Price to the Trade on
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By Royal Warrant, Nurserymen and Seedsmen to the Queen,
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ORCHID PEAT, best quality; BROWN
FIBROUS PEAT for Stove and Greenhouse use, RHO-
DODENDRON and AZALEA PEAT. Samples and Prices to
WALKER AND CO., Farnborough, Hants.

COCOA-NUT FIBRE REFUSE (best only),
1s. per sack; 30 sacks, 20s.; truck (about 2½ tons), 20s., f.o.r.
PEAT, LOAM, TOBACCO PAPER, &c. Samples free.
J. MEARS AND CO., 3, Bury Court, London, E.C.

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RUSSIA MATS, from 12s. to 18s. per dozen.
FINEST ORCHID PEAT, 7s. per sack.
BEST BROWN FIBROUS PEAT, 6s. per sack, 5 for 22s. 6d.
BEST BLACK FIBROUS PEAT, 4s. 6d. per sack, 5 for 20s.
COARSE SILVER SAND, 1s. 6d. per bushel; 14s. ½-ton;
PURE LEAF MOULD, 3s. per sack. [25s. per ton,
YELLOW FIBROUS LOAM, 3s. per sack.
BEST MUSHROOM SPAWN, 4s. per bushel.
RAFFIA, LABELS, STICKS, from 1 ft. to 5 ft., BAMBOO
CANES, 3½ ft. to 12 ft., VIRGIN CORK, CHEMICAL
MANURES, NETTING, &c.
SPHAGNUM MOSS, 6s. per sack. CHARCOAL, 8s. per sack.
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SOLD IN PACKETS, 6d. and 1s. each, and in
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7 lb. 14 lb. 28 lb. 56 lb. 1 cwt.
2/6 4/6 7/6 12/6 20/-
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C. & L. also supply Crushed Bones, Bone Dust, Peruvian Guano,
Sulphate of Ammonia, and Nitrate of Soda, in best qualities only.

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Supplied by us to Royal Gardens, Kew, the Crystal Palace, &c.
For Destroying Weeds on Carriage Drives, Garden Walks,
Stable Yards, &c. Prices: per gallon, 2s., tin included;
5 gallons, 1s. 6d. per gallon; 10 to 20 gallons, 1s. 4d. per gallon,
carriage paid. Special quotation for larger quantities. One
gallon makes 26 gallons.
Mr. W. G. HEAD, Superintendent of the Crystal Palace
Gardens, says:—"We were so satisfied with our Weed Killer
and its price, that we have used it absolutely. I have every
confidence in recommending it."

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Cheapest Fertiliser for all purposes. Write for Circular
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Reports. Sold in Tins, 1s., 2s. 6d., 5s. 6d., and 10s. 6d. each,
or 1 cwt. Bags, sealed, 13s. By all Seedsmen, or apply direct to
W. H. BEESON, Carbrook Bone Mills, Sheffield.

NATIVE GUANO.—Price £3 10s. per ton,
in bags. Lots under 10 cwt., 4s. per cwt.
A 1 cwt. sample bag sent, carriage paid, to any Station in
England on receipt of post-office order for 5s.

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NATIVE GUANO FOR POTATOS, VEGETABLES, VINES,
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good quality. Can highly recommend it."

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"Used for standard and dwarf Roses. Result: excellent growth,
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out doubt a very valuable manure, and easy of application."
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Quality, THE BEST in the Market. (All sacks included.)
PEAT, best brown fibrous ... 5s. per sack, 5 sacks for 23s. 6d.
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PEAT, extra selected Orchid ... 7s. 6d. " 5 sacks for 35s.
LOAM, PREPARED COMPOST ... 1s. per bush., 3s. per sack
LEAF, or PEAT MOULD ... (sacks included).
SILVER SAND, coarse, 1s. 6d. per bush., 14s. half-ton, 24s. ton.
RAFFIA FIBRE, best only ... 1s. per lb.
TOBACCO CLOTH, or PAPER ... 1s. 1s. lb.; 28 lb., 27s.
SPHAGNUM MOSS, all selected, 3s. per bush., 2s. per sack.
CHUBB'S "PERFECT" FER- IN BAGS.
TILIZER (the Best Food for
all kinds of Plants, Flowers, Fruits, Vegetables, &c. ... 1/6 3/- 5/- 8/- 14/- 22/-
CRUSHED BONES, or Bone Dust 1/2 2/- 3/- 6/- 12/-
VIRGIN CORK (Best quality only) — 3/- 5/6 10/6 17/-
RUSSIAN MATS, BAMBOO CANES, PERUVIAN GUANO,
NITRATE OF SODA, HORTICULTURAL CHARCOAL, &c.
PEAT MOSS LITTER, cheapest and best Bedding for Horses and
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COCOA-NUT FIBRE REFUSE (by Chubb's special process),
sacks, 1s. 3d. each; 10 sacks, 11s.; 15 sacks, 15s.; 20 sacks, 18s.;
30 sacks, 25s.; 40 sacks, 30s.; Truck-load, loose, free on rail,
28s. Limited quantities of G., special quality granulated,
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COCOA-NUT FIBRE REFUSE.
4d. per bushel: 100 for 25s.; truck (loose, about 2 tons),
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LIGHT BROWN FIBROUS PEAT, 5s. 6d. per sack; 5 sacks,
25s.; sacks, 4d. each.
BLACK FIBROUS PEAT, 5s. per sack, 5 sacks, 22s.; sacks,
4d. each.
COARSE SILVER SAND, 1s. 9d. per bushel; 15s. per half
ton; 26s. per ton, in 2-bushel bags, 4d. each.
YELLOW FIBROUS LOAM, PEAT-MOULD, and LEAF-
MOULD, 1s. per bushel.
SPHAGNUM MOSS, 8s. 6d. per sack.
MANURES, GARDEN STICKS, VIRGIN CORK, TOBACCO
CLOTH, RUSSIA MATS, &c. Write for Price LIST.—
H. G. SMYTH, F.R.H.S., 21, Goldsmith's Street, Drury
Lane (lately called 17A, Coal Yard), W.C.

GISHURST COMPOUND, used by leading
Gardeners since 1859 against Red Spider, Mildew,
Thrips, Green Fly, and other Blight. 1 to 2 ounces to
each of soft-water; 4 to 16 ounces as winter dressing for Vines
and Orchard-house Trees; and in lather from the cake against
American Blight. Has outlived many preparations intended
to supersede it. Boxes, 1s., 3s., and 10s. 6d.

GISHURSTINE keeps Boots dry and soft on
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Wholesale from PRICE'S PATENT CANDLE COMPANY
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Sole Proprietors and Manufacturers,
THE AGRICULTURAL CHEMICAL COMPANY,
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SOLD BY SEEDSMEN AND FLORISTS.

21-OZ. Foreign of the above sizes, in 100 and 200 feet boxes,
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A large stock of similar current sizes of **15-OZ.** glass in
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English Glass, cut to buyer's sizes, at lowest prices, including
free delivery in the country in quantities.

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Stock List and Prices on application. Price List of Colours,
Furnishes, Designs of Stained & Leaded Glass. Quote Chronicle.

THE GARDENERS' ORPHAN FUND.

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Royal Horticultural Society's Gardens,
Chiswick, London, W.

To Landscape Gardeners and Contractors.
THE RAMSEY TOWN COMMISSIONERS invite TENDERS for carrying out the work in connection with the MOORAGH PARK and LAKE. The work comprises the Construction of Lake, the Forming of Roads and Walks, Laying-out and Planting of Park, and the Erection of Shelters, Keeper's Lodge, &c., in accordance with Plan and Specification, which may be seen at their office. Specification may be had on application to the undersigned. Sealed Tenders, endorsed "Tender for Mooragh Park," to be sent in to the undersigned on or before the 1st day of August next.
The Commissioners do not bind themselves to accept the lowest or any Tender.—By order, **JAMES BELL,**
Clerk to the Ramsey Town Commissioners.
Town Commissioners' Office, Ramsey,
Isle of Man.—June 28, 1888.

NEW PELARGONIUM, "DUCHESS OF TECK."

Awarded a First-class Certificate at the Manchester Royal Botanical and Horticultural Society's Summer Exhibition of 1887. It is a white Regal decorative variety, semi-double, immense trusses, the flowers are erect, petals undulated; distinguishing it from the ordinary Pelargoniums. It is novel and conspicuous; has a compact habit, and is one of the best Pelargoniums in cultivation. It is invaluable for cut flowers where white is in demand.

3s. 6d. each, 30s. for 12 plants, 50s. for 25 plants.
Cut Flowers sent on application. Sent out by
FISHER, SON, AND SIBBAY, Handsworth Nurseries, Sheffield.

80,000 CLEMATIS, in Pots, of all the finest Double and Single Varieties (some of the flowers of which become 10 inches across, and are of every shade, from pure white to the darkest purple), for climbing and bedding, from 12s. to 24s. per dozen, strong plants; extra strong plants, repotted into 5½-inch pots, 2s. 6d. each; Beauty of Worcester, a magnificent purple, excellent for bedding, recently sent out by us, reduced price 2s. 6d. each. Descriptive LIST on application.—**RICHARD SMITH AND CO.,** Nurserymen and Seed Merchants, Worcester.



CUTBUSH'S MILL-TRACK MUSHROOM SPAWN.
—Too well known to require description. Price, 4s. per bushel (1s. extra per bushel for package), or 6d. per cake; free by parcel post, 1s.

None genuine unless in sealed packages and printed cultural directions enclosed, with our signature attached.
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Latania borbonica, Seaforthia elegans, Phoenix reclinata, &c., 20 to 24 inches high, 18s. per dozen. Same kinds, 2 ft. 6 in. to 3 ft. high, 3s. to 5s. each. Handsome Palms for decoration, 5 ft. 6 in. to 6 ft. high, 70s. per pair. Small Palms, 10 to 12 in. high, 4s. per dozen.

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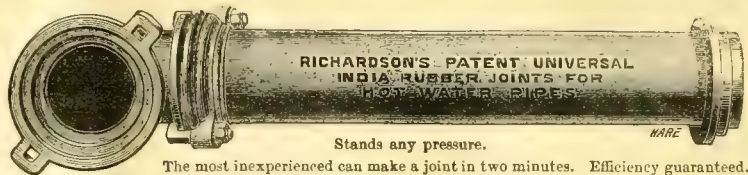
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Excellent Seeds and Bulbs at low prices

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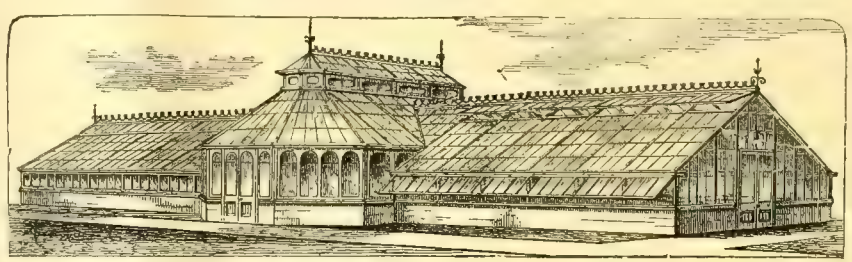


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IMPROVED HEATING COILS, Ornamental and Plain, and COIL CASES, Garden ROLLERS, VASES, FOUNTAINS, SEATS, &c.
Manufactured by **THE MEADOW FOUNDRY CO. (Limited), MANSFIELD.**
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Five 1st Prize Medals recently awarded in open competition.



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Vineries, Stoves, Greenhouses, Peach Houses, Forcing Houses, &c., constructed on our improved plan, are the perfection of growing houses, and for practical utility, economy, and durability cannot be equalled. We only do one class of work, and that THE VERY BEST.

Conservatories and Winter Gardens designed architecturally correct without the assistance of any one out of our firm, from the smallest to the largest. Hot-water Heating Apparatus, with really reliable Boilers, erected, and success guaranteed in all cases. Melon Frames, Sashes, Hotbed Boxes, &c., always in stock.

Plans, Estimates and Catalogues free. Customers waited on in any part of the Kingdom.

Our Maxim is and always has been—

MODERATE CHARGES.

FIRST-CLASS WORK.

THE BEST MATERIALS.



THE "PERFECT" WEED KILLER.

The best preparation for Destroying Weeds, Moss, &c., on Garden Walks, Carriage Drives, Stable-yards, &c.

Price per gall., 2s.; 5 galls., 1s. 9d. per gall.; 10 galls., 1s. 6d. per gall.; 40 gall. casks, 1s. 4d. per gallon.

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Awarded Certificate of Merit at the Royal Horticultural Society's Show.

THE MOST EFFECTIVE, THE SAFEST, AND THE CHEAPEST INSECT DESTROYER.

Prices: Bottles, 1s. 6d. and 3s. 6d.; per half-gallon, 6s.; gallon, 10s. 6d.

THE "PERFECT" MILDEW DESTROYER.

A CERTAIN REMEDY FOR MOULD AND MILDEW.

Prices: Bottles, 1s. and 2s.; per half-gallon, 5s.; gallon, 8s.

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CAMBRIC

Children's... Per doz. ... 1s. 2d.
Ladies' ... 2s. 4d.
Gent's ... 3s. 6d.

POCKET

Hemstitched:—
Ladies' ... 2s. 11½d.
Gent's ... 4s. 11d.

HANDKERCHIEFS.

IRISH DAMASK TABLE LINEN.

FISH NAPKINS, 2s. 11d. per dozen. Dinner Napkins, 5s. 6d. per dozen. Table Cloths, 2 yards square, 2s. 11d.; 2½ yards by 3 yards, 5s. 11d. each. Kitchen Table Cloths, 11½d. each. Strong Huckaback Towels, 4s. 6d. per dozen. Monograms, Initials, &c., woven and embroidered.

Samples and Illustrated Price Lists, post-free.

ROBINSON & CLEAVER,

By Special Appointments to
H.M. the Queen and H.I.M.
the Empress of Germany,

MATCHLESS SHIRTS.

Best Quality Long Cloth, with 4-fold finest Linen Fronts, 35s. 6d. per half-dozen. (to measure or pattern, 2s. extra). Patterns of materials used, also of newest styles in Fancy Cotton, Flannel, Silk, and Silk and Wool, sent free on application.

OLD SHIRTS

made as good as new, with best material in Neckbands, Cuffs and Fronts, for 14s. the half-dozen.

Price Lists and Samples of Linen Collars, Cuffs, and all kinds of Linen Goods, post-free.

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ORCHIDS A SPECIALTY.

Quantity Immense—Quality fine—Price Moderate.
Inspection invited. 297,300 feet of glass in the Nurseries.

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CLAPTON NURSERY, LONDON, N.

CHOICE AND USEFUL PLANTS

AT REASONABLE PRICES. Per doz. plants.
ASPARAGUS tenuissimus, the new Asparagus Fern, 12s. & 18s.
CANNAS, named, choice sorts ... 9s. & 12s.
... useful ornamental sorts ... 4s. & 6s.
CALADIUMS, in growth, our selection ... 9s., 12s. & 18s.
CARNATIONS, for border, best named ... 9s. & 12s.
... tree, small ... 6s. & 9s.
... flowering plants ... 18s., 24s. & 30s.
CHRYSANTHEMUMS ... 3s. & 6s.
BEGONIAS, single, white, pink and scarlet bloom-
ing plants ... 6s. & 9s.
... fine double ... 24s. & 30s.
CACTUS DAHLIAS, in six varieties ... 6s.
TOMATOS, in four varieties, strong plants ... 4s. & 6s.

ORCHIDS.

12 beautiful varieties, selected for warm or cool house 21s. & 42s.
100 healthy and established plants, in fifty good varieties, £10
Amateurs may place perfect confidence in these selections.

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The largest, most complete, and profusely
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1s. 6d. post-free. Smaller Catalogue of over 1300 species and
varieties free on application.

W. & J. BIRKENHEAD,
FERN NURSERY, SALE, MANCHESTER.

Come and See.

CANNELL AND SONS,
Home of Flowers, Swanley.

TWENTY-SEVEN MEMBERS of the EASTBOURNE
HORTICULTURAL SOCIETY, accompanied by their President,
the Mayor of that Town (G. Bolton, Esq.), made a special
journey to Messrs. Cannell & Sons' Home of Flowers, Swanley,
on Wednesday last, 4th inst. H. Cannell, Sen., was awaiting
on the platform their arrival, and met and welcomed his old
friends with his usual hearty greeting, and at once escorted
them to one of the greenhouses, where refreshment in plenty
was at their disposal. The sharp appetite consequent on so
long a journey having been somewhat appeased, all were per-
mitted to roam at their leisure through the many glasshouses.
Begonias, Fuchsias, Pelargoniums, Chrysanthemums, claimed
much admiration, also other departments and the grounds.
After about three hours examination of the various families of
plants, the signal sounded for (dinner) a cold collation, which
was in readiness at the Temperance Restaurant. The chair
was occupied by their President, and ample justice was done to
the viands plentifully supplied by Messrs. Whitehead. A journey
was then made to the Strawberry picking district: 50 acres in
one piece, filled all with astonishment. At 6 o'clock P.M. the
members started on their return journey, evidently delighted
with the wonderful sights they had seen.

MOST EFFECTIVE, SAFE & ECONOMICAL.

IMPROVED & ONLY GENUINE

"Medicated Tobacco Paper"

(READY CUT UP FOR USE),

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28lbs. & upwards—Carriage Paid.

Parcels for trial, sent Free by Parcels Post, viz.:
2 lbs. 3/4, 4 lbs. 6/8, 6 lbs. 9/9, 8 lbs. 13/-, 10 lbs. 16/-.

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FUMIGATING PAN

is vastly superior to any other.

Price 6/8 (in iron with heater) each,
or in Copper. 21/.

DICKSON'S Improved
MUSHROOM SPAWN

MOST SUPERIOR, 5/- PER BUS.

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Royal Seed Establishments,
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BEGONIA EXHIBITION

The Grandest Floral Display
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Open to the Public every day (Sundays excepted) from
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ADMISSION FREE.

OUR EXHIBITIONS OF BECONIAS

Have been celebrated for their varied beauty
and extent for the past few years, but the
COLLECTION now on view is superior to any
of the kind ever yet seen, both in single and
double varieties, the shades of colour being quite
indescribable, and must be seen to be appreciated.

All lovers of flowers are cordially invited.

Nearest Railway Stations are Catford Bridge, Mid Kent
Line (S.E.R.), from Charing Cross, Waterloo, Cannon Street,
and London Bridge; and Forest Hill (L.B. & S.C.R.), from
Victoria, Kennington and West End, Croydon, &c.; also from
Liverpool Street.

JOHN LAING & SONS,

Begonia Specialists, Nurserymen,
and Seedsmen,

FOREST HILL LONDON, S.E.

CYPRIPEDIUM BELLATULUM,

Rehb. f.

This grand novelty has, on flowering, at once taken the
foremost place in the genus, and can be seen in flower at the
Clapton Nursery. Fine Plants are offered at

10s. 6d. each; Larger, 21s. to 105s. each.
Also a few extra-sized specimens are for sale.

HUGH LOW & CO.,
CLAPTON NURSERY, LONDON, E.

TEA ROSES.

GARAWAY CO. offer 12 of the above, best
named sorts, including MARECHAL NIEL
and NIPHETOS, in 5-inch pots, for 10s. cash.

GARAWAY CO.,
Durdham Down, Clifton, Bristol.

VANDA LOWI (RENANTHERA).

A couple of beautiful specimens, best variety, to be sold on
account of want of accommodation.

No. 1.—Height of main stem from top of basket, 1 metre
90 cm., from which are five breaks, making in all a
total of 103 leaves.

No. 2.—Height of main stem from top of basket, 2 metres, from
which are five breaks, making in all a total of seventy-six
leaves. Height of baskets 55 centimetres.

Price for the couple on application.

APPLY TO

"SERRES EXCELSIOR." HAVRE, FRANCE.

ROSES IN POTS;

all the best New and Old English and Foreign
sorts, from 18s. to 36s. per dozen.

Descriptive List free on application.

RICHARD SMITH & CO.,
Nurserymen and Seed Merchants,
WORCESTER.

As a Supplement

TO THE

GARDENERS' CHRONICLE

FOR

Next Week, July 21,

WILL BE

Published an Ink Photograph

OF A

VIEW in ST. JAMES'S PARK,
LONDON.



THE

Gardeners' Chronicle.

SATURDAY, JULY 14, 1888.

VEGETABLES AND FRUIT IN
JERSEY.

AMONG the many useful innovations which
have been introduced at the French Min-
istry of Agriculture none has been of more
practical service than the publication of a *Bul-
letin*, which appears about eight times a year,
and which contains a variety of articles interest-
ing to those who are concerned in the cultivation
of the land. One of the latest of these reports
is from the pen of M. Féret, who has just
retired from the French Consulate of Jersey.
M. Féret, who deals with the agricultural and
horticultural progress of the island during the
past year, devotes the bulk of his report, of course,
to the cultivation of early Potatoes, which may
be described as the staple agricultural industry,
and he points out that the result of last year's
crop was the very contrary of what might have
been expected. The cultivation of early Potatoes
is, from the very nature of things, a costly pro-
ceeding, and it is by selling them at a high price
that a profit is to be obtained. In order to obtain
a high price the crop must be an early and a
good one, while it must also be a fairly heavy
one. But it so happened that last year the
Potato crop in Jersey was neither early nor
heavy, and yet it yielded a good return, this
being due to the good quality of the Potatoes
when lifted. The Myatt variety, which is the
earliest, and was lifted last year about May 25,
did not promise well, but the Royal Jersey Flukes
and the Prince of Wales, which came next in
order of maturity, were a splendid crop. M.
Féret says that the total area under cultivation
was about 6300 acres, the total production
being about 2,679,000 cabots, or 52,340 tons, the
cabot being rather under a hundredweight. The
average price per cabot having been about 3s. 3d.,
the total value of the crop may be put at £435,337,
as against only £344,268 for 1886, when the total
crop was 50 per cent. larger than in 1887, but
fetched only 1s. 9d. per cabot, as against 3s. 3d. It
is curious to note how the price of Potatoes varied
during the eleven weeks of what may be regarded

as the season, for in the first week of last year Potatoes were worth 8s. 10d. per cabor, going down to less than 2s. 6d. in the three last weeks. In fact, last year was the best, according to M. Féret, which the Jersey Potato growers have ever had, and there can be no doubt that figures endorse his statement, the value of the Potatoes sold being just double what it was ten years ago, since which date the area under cultivation has increased quite 50 per cent., while there has been an almost uninterrupted advance in the quantity of the crop and its selling value. There is an exception as to the increase of the crop last year, for it was only about 8 tons an acre, or 4 less than in 1886; while in the three years, 1882—1884 there was also a heavier crop, though prices did not rule so high as in 1887. M. Féret then enters at some length into the cost of production, which he estimates at £47 10s. per acre, made up as under:—

	£	s.	d.
Rent	9	3	0
Manure	15	0	0
Ploughing	5	15	6
Planting	1	8	0
Seed	9	3	6
Hoeing and earthing	1	5	0
Digging	3	9	0
Transport	2	6	0
	£17	10	0

The acreage value of the crop was about £72 an acre, leaving a clear profit of £24 10s., or nearly three times the profit of 1886. In fact, the average profit for the last ten years has not much exceeded £12 an acre. M. Féret adds, that the excellence of the Potato crops last year made amends for the general failure of all the other crops in the island.

After incidentally remarking that the cattle and butter trade have come almost entirely to an end, and that there are only 5800 acres under arable cultivation, other than the 6300 acres in Potatoes, he winds up a very interesting report by some account of the Grape growing in Jersey.

GRAPES.

The Grapes grown are of two kinds, the winter and the summer Grapes. The summer varieties include the Black Hamburg, which is more cultivated than any other, producing about two-thirds of the whole crop, selling at 3s. a pound at the end of May, and coming down to 8d. in August; Lady Downe's Seedling, the Black Muscat, the White Muscat of Alexandria, the two latter ripening in July, August, September, and October. The winter varieties comprise the Gros Colmar, which yields five-sixths of the winter crop, and the Cannon Hall Muscat. The total Grape crop of last year is put by M. Féret at 112 tons, which he estimates at a total value of £18,000; the summer Grapes yielding 70 tons, value (at 7d. a pound) £4100, and the winter Grapes 42 tons, value £13,900. In 1886 the total weight of Grapes grown in Jersey was only 47 tons, and their value not quite £8000. The export of the Gros Colmar Grape had at one time realised large profits for the Jersey growers, but there is now a great deal of competition from Guernsey, which grows some 500 tons of Grapes in an average year, the forcing-houses covering nearly half the area of the island, some of them being 600 feet long by 22 feet wide; whereas in Jersey, with the exception of those belonging to Mr. Bashford, of St. Clements, who has twenty-two houses, some of which are 900 feet long by 24 feet wide, there are none more than 500 feet long. As a rule, the Jersey houses are 66 feet by 18, each of them containing, upon an average, twenty Vines, yielding 35 lb. of Grapes, sold, taking one with another, at eighteen pence a pound. This price seems, at

first sight, to yield a large profit, but it does not always do so, as the cost of cultivation is very large. M. Féret estimates that while a house 66 feet long by 18 brings in £42 for its 700 lb. of Grapes, the actual cost of growth is £20. To this must be added the cost of constructing and keeping up the houses, to say nothing of the risk of a bad year. In short, M. Féret is of opinion that Grape-growing in Jersey is not likely to develop to the very great extent which seemed at one time probable. This he thinks is in some measure due to the difficulty of keeping Grapes through the winter, and of so obtaining the very high prices which were to be had when there was less competition. It appears quite certain that Grapes which have been forced do not keep so well as those grown in the open. During the winter the Grape-houses are heated day and night, but in spring and autumn heat is only applied during the night, M. Féret remarking that it is only by long experience and close observation that the Grape grower can ascertain the proper amount of heat necessary at certain seasons.

PEARS, &c.

The Pear crop in Jersey was not a good one last year, as, owing to the drought, the choice varieties, such as the Doyenné, the Duchesse, and the Chaumontel, did not attain half the size they usually do, and at the autumn exhibition at St. Heliers, twenty-five selected Pears were found to weigh only 17 lb. Altogether the Pear crop amounted to only 140 tons, value £2100, as against more than £3000 in 1886. The Apple crop, on the contrary, was a very satisfactory one, as 1575 quarters (a quarter is nearly 460 lb.) of table Apples brought in £1400, while 3150 quarters of cider Apples fetched £1600, the value of the crop being about £150 in excess of 1886. The Tomato crop was also a very good one, the 5 acres in the open air and under glass yielding 132 tons, value £8000; but Cauliflowers suffered from the drought, and the 7 acres under cultivation yielded only 40,000 heads, value £320, the production being so small that none were exported to London. Other vegetables, such as Radishes, Asparagus, Celery, Onions, Parsley, &c., cultivated upon an area of 145 acres, brought about £6 per acre; and M. Féret summarises the production of Jersey during the past year as follows:—

Description of Crop.	Acreage under Cultivation.	Total Value.
Potatoes	6300	£435,337
Corn crops	2025	20,572
Forage, Roots, &c.	1227	49,475
Fruits	180	22,980
Vegetables and Salads	175	13,265
	9907	541,929

NEW OR NOTEWORTHY PLANTS.

THUNIA CANDIDISSIMA, n. sp.*

This is stated to have the habit and appearance of Thunia Marshalliana. I have at hand a nodding inflorescence of six flowers. The greenish bracts exceed in length the stalked ovaries. The spur is inflated and bilobed, just as in Thunia Marshalliana. The trifid lip has the anterior edges of the side-laciniae neatly toothed. The central lacinia has filiform processes, and a very few similar processes are scattered in two lines on the disc. There is no sul-

* *Thunia candidissima*, n. sp.—Affinis Thuniae Marshallianae: labello trifido, angulis lateralibus denticulatis, lamina mediana denticulata medio apiculata, cristulis filiformibus supra carinas quatuor calicari cylindricis crassis apicibus obtusis bilobis, flores candidissimis. H. G. Rehb. f.

phur colour anywhere on the flowers. This highly interesting novelty was very kindly supplied me by Sir Trevor Lawrence, Bart., M.P., P.R.H.S., from his wonderful collection. It was found on an imported Dendrobium Wardianum. *Semper aliquid novi ex Burford Lodge!* H. G. Rehb. f.

EPIDENDRUM AURICULIGERUM, n. sp.*

This is very much like Epidendrum Brassavola. The long narrow sepals and petals are quite the same, but smaller. The stalk of the lip has auricles between its base and the isthmus. The anterior lacinia of the lip is triangular acuminate, much longer than the upper part. There are two long swollen callous lines between the auricles, and three short ones in front. The mid-lacinia of the androclinium is trifid, the side laciniae serrate, the mid-lacinia cuspidate. The colours were faded when the plant came into the possession of Sir Trevor Lawrence, Bart., M.P., P.R.H.S., who kindly forwarded me flowers. H. G. Rehb. f.

ANGRÆCUM TRIDACTYLITES, Rolfe, n. sp.

The species of Angræcum are becoming rather numerous, but the present one appears to be quite distinct from anything hitherto described, and moreover it is a most remarkable one. It is very closely allied to the South African *A. bicaudatum*, Lindl., in every respect; but the side lobes of the lip are narrowly setiform and entire, not broken up into a number of small teeth, as in that species. The flowers are buff, or almost apricot-coloured. The plant was sent to Kew by T. R. Griffith, Esq., Colonial Secretary at Sierra Leone; among a collection of Orchids from that country, and has just flowered in the Kew collection. The following is the technical description:—Plant erect, at present 6 inches high. Pseudobulbs sub-compressed, with two sub-acute angles a quarter of an inch broad. Leaves distichous, numerous, narrowly linear, unequally bidentate, 3½—5 inches long, 5—8 lines broad. Raceme lateral, nearly horizontal, slightly recurved, 2 inches long, with eleven flowers arranged in two distichous rows; bracts very shortly triangular, broadly amplexicaul. Flowers horizontal, 4 lines in diameter. Ovaries sessile, 2 lines long. Lateral sepals ovate, dorsal one a little narrower. Petals lanceolate-linear, like the sepals, acute. Lip trifurcate, the basal part oblong, with a pair of small marginal fleshy teeth at the base, the central lobe acutely triangular, the lateral ones somewhat longer, sub-setiform, and recurving laterally. Spur 5 lines long, uniform, a shade narrower at the base. Column stout and very short, with a pair of small rounded fleshy wings at the apex. The name applies to the very curious lip. Several other species of West African Orchids have recently flowered at Kew from the same source. R. A. Rolfe.

A TOPSY-TURVY HIPPEASTRUM.

On a plant of Thomas Spede, I found an upside-down flower. The ordinary Hippeastrums have the upper petal external and the lower petal internal, and the two most brilliantly marked petals are the upper internal ones. In this case there was only one brilliantly feathered petal, the upper internal; moreover, it was larger than the other two internal ones. The stamens and pistil were as usual, but reposing on the lower outer petal, instead of on the lower inner petal. The curious part of this flower was that only the petals appeared twisted out of their usual position, while the organs of reproduction were normally situated.

What I observed on a former occasion with regard to the Gladiolus, viz., that on the same spike both normal and twisted flowers occur, and what may be

* *Epidendrum auriculigerum*, n. sp.—Aff. Epidendro Brassavolae: labello ima-basi, columnae adnato, utrinque obtuse parvi-auriculato, inter unguem et isthmum brevem, callis elongatis inter aurículas, callis ternis brevioribus antepositis, lacinia antica hastato-triangula acuminata elongata; androclini alba postice trifida, lacinia mediana subulata aristata, lacinis lateralibus serratis. Exc. ill. eques Trevor Lawrence. H. G. Rehb. f.

seen also in some Orchids, viz., in the *Disa* and others, with the labellum uppermost, is seen also in this *Hippeastrum*. I noticed from a distance that there must be something abnormal in this flower, the lower petals being unusually large, and this was because one of the large outer ones was lowermost.

It is not impossible that in all the curious modifications we observe in flowers, we may sometimes exaggerate the influence of insects in bringing about such variations. Supposing such a flower as this to occur in Nature, and to become fertilised in the usual way by pollen of a normal flower, probably this variation would be neutralised, and thus extinguished; on the contrary, if other similar abnormal flowers were in the vicinity, and their pollen happened to fertilise this one, the influence of both parents would then be concentrated in the same direction, and probably in subsequent generations more abnormal ones might occur, and so eventually give permanence to this variation, without any special influences having been exercised, by any special insect to modify progressively the flower. The organs of reproduction, being in the normal position, would require no change in the insect to effect fertilisation.

It would appear, therefore, that every variation in a plant need not necessarily be of some advantage to it, in order that it may be perpetuated, and, so to speak, become a reason for selection. I believe that many variations in flowers may have originated accidentally (if this term be admissible), and that they are there now because they were inherited with other useful variations.

In connection with *Hippeastrums*, I have seen a very interesting and curious variation, viz., the flower-scape, instead of originating in a side bud, is the prolongation of the central or terminal bud of the bulb. When the bulb flowers, therefore, its life ends, and it perishes, leaving only the effects to continue that variation. In the *Hyacinth*, however, the flower-stem appears to be also a continuation of the central bud, yet the bulb lives on, enlarges, and flowers again [from a lateral bud]. Not having, however, made a study of the *Hyacinth* bulb, I cannot say whether this is really so or not. Perhaps some one else may be in a position to throw light on this point. *E. Bonavia, M.D.* [See *Henfrey's Elementary Course of Botany*, ed. 1884, p. 27, with illustrations. Ed.]

LIFTING AND REPLANTING DAFFODILS.

THE question of lifting the bulbs of Daffodils depends so much upon soil and climate that no general rule will meet all cases alike. Like Mr. Walker I should like to be able to lift and replant the bulbs every year, but not being a nurseryman it does not follow that I should do so in every case. In the case of all the robust, strong rooting varieties I should prefer to lift a third of the stock every year, feeling sure that all kinds are benefited by being lifted after the third season of growth in the same place. Delicate and fine-rooted kinds like *N. pallidus præcox* are certainly best lifted every year, indeed unless this is done here we should find no bulbs left after the third year. The same is true of *N. triandrus*, *N. tazetta* in variety, and more especially the wild Indian, Cyprian, and African kinds. The Dutch seedling varieties live and flower freely for years on suitable soils, but even these never give such fine trusses or bunches of flower as when replanted every third year.

We must never forget that on all soils at all congenial to the Daffodil there is a time when the bulb exists without either roots or leaves. At this particular season it is like a cricket-ball, and as then dug and replanted it is benefited by the operation, it being of course taken for granted that the operation is rightly performed. As to the "lifting and storing" of Daffodil bulbs, it is a question of concern to the nurseryman only. He must keep his stock aboveground for sale, and that he extends this season far too long is well known to all amateurs really conversant with bulb culture. After all, we will excuse the trader, because some amateurs who

do not know anything of the economy of bulb life never think of ordering their "flower roots" until the last moment, and then they too often grumble that their bulbs do not bloom well!

The real amateur cultivator of bulbs has nothing to do with storing bulbs in any shape or form. It is a necessary evil to the dealer, but to the amateur storing should always mean deterioration. When the amateur or gardener digs his bulbs, they should be at once replanted in well-prepared soil, or if stored at all it should be in dry soil or in sand—never on open shelves exposed to the air, nor in exposed heaps to sweat and become covered with the mycelium of fungi. Any bulb exposed on shelves to the atmosphere loses somewhat by evaporation—it is for the time being "a fish out of water."

Most of our Daffodils are planted in rows of twelve to eighteen bulbs in a row, and our method of digging and replanting is as follows:—We bring as many 10-inch flower-pots as there are rows, and into these the bulbs are placed as they are dug, along with the label belonging to each kind. The bulbs in the pots are at once covered over with dry soil until they are replanted again, which takes place as soon as possible. Out of the ground and in again is our plan, and as so treated we get very fine growth the next season.

In preparing the soil for replanting we use no manure, but plenty of sea-sand and burnt earth, and refuse of all kinds from the rubbish fires. The ground is worked up fully 2 feet in depth, and the bulbs in the rows are entirely surrounded with sand before the soil is filled in over them.

On deep rich soils of a sandy or gravelly character Narcissi generally lose their leaves and roots at the end of July or early in August, but on some northern cold wet soils the leaves and roots do not die off so early or so suddenly, and in such places elevated beds well dressed with sea-sand and burnt earth assist the natural ripening-off process. Crude farm-yard manures should never be used for Daffodils, and I believe when Mr. Walker manures his land, as he often does, pretty heavily, it is devoted to a crop of Peas, or Potatoes, before bulbs are again planted thereon, and a similar rule obtains in Holland. We have certainly had as fine blooms of *N. Horsfieldii*, *N. bicolor*, *N. Sir Watkin*, and other kinds from newly replanted bulbs as ever we had from old-established ones. The fact is, that when you dig fine big bulbs just at the time before mentioned, when leaves and roots have naturally died away, the replanting of such bulbs in fresh soil develops their contents to the utmost, and finer flowers and leaves are the rule here than if we had left such bulbs beyond the second or third year undisturbed. If the old-established or three-year-old theory was right, one might expect it to hold good with *Hyacinths* as well as with Daffodils, whereas everyone knows that the contrary is the rule. The rule in Holland, where bulbs of all kinds are, let us say, as well grown and cultivated as in England, is to lift all bulbs every year, and this is done in stock-taking, apart from trade in flowering bulbs, in which latter case it must perforce be done.

Of course I know that on suitable soils some Narcissi will grow and flower fairly well for ten, twenty, or fifty years undug in gardens, and in a naturalised state no doubt some Daffodils have existed in fields and woods or in hill-side pastures for centuries; but if you dig up these bulbs and cultivate them in a garden their flowers, as a rule, become very much improved. The Tenby Daffodil may be cited as an example of what I mean.

After all, the best plan in practice is to find out the best course to pursue on one's own soil and in one's own locality; and, answering for myself and a soil which naturally suits the Daffodil, I find replanting tender varieties every July or August, and the stronger sorts every third year, to give the best results. There is one point bearing on this subject of replanting annually worth noting. It is this: when Daffodils get out of health and vigour nothing restores their energy like annual replanting in clean fresh soil and sand. Freshly imported bulbs

of *N. moschatos* from Val d'Arras, and of *N. ornatus* from the French meadows, are dug in leaf, sometimes in bloom; hence it follows that such bulbs receive a check from which it takes them a year or two to recover, but the replanting annually of plump well ripened home-grown bulbs at the right season is a very different question.

Of all the yellow Daffodils *N. maximus* is the only one which seems to become stronger if left undisturbed for three or four years in our soil. One must remember that three-year-old clumps of Daffodils are thicker and so look stronger and more floriferous than replanted bulbs at 6 inches apart, but that they really are stronger or more floriferous is open to doubt. After all it is a question every cultivator must decide for himself, but annual replanting being beneficial to weak-rooted, and delicate varieties, it follows that it is likely to be of service now and then to the stronger growing kinds although they may not absolutely require annual attention. *F. W. Burbidge.*

ORCHID NOTES AND GLEANINGS.

ORCHIDS AT BOCKING PLACE.

EVERY collection after a time acquires some special features—some section of Orchids, large or small, which are better represented than another. The collection of S. Courtauld, Esq., at Braintree, is noted for its *Masdevallias*, which consist of the best and showiest, and also the more minute of this interesting genus. As a really gorgeous and showy plant, *M. Veitchiana* and its larger variety, *M. V. gigantea*, stand first, then comes the varying but always beautiful *M. Harryana*, of which about a score of varieties, whose colours run from pale lilac to brilliant scarlet, are in bloom.

The vivid and free-flowering varieties of *M. ignea* rank next in point of showiness, and the numerous section of chimæroid *Masdevallias*, chiefly grown in baskets, are curious, beautiful, and continuous-flowering. Over a hundred species of *Masdevallias* are to be found in the house set apart for them, and from the healthy condition of all it is evident that Mr. Alfred Wright, their grower, well understands their culture. Besides the showy species above alluded to, in bloom are *Masdevallia porcellicea*, *M. simula*, *M. Bouplandii*, *M. Bruchmüllerian*, *M. Benedicti*, *M. Carderi*, *M. leontoglossa*, *M. senilis*, *M. chimæra rubra*, *M. bella*, many *M. chimæra*, *M. troglodytes*, *M. Estrade*, *M. trichate*, *M. triaristella*, *M. muscosa*, *M. trochilus*, *M. achrocordonia*, *M. Schlimii*, *M. gemmata*, *M. anchorifera*, *M. calura*, *M. campyloglossa*, *M. peristeria*, *M. pulvinaris*, *M. torta*, *M. astata*, *M. rosea*, and various others, some of the more curious, such as *M. gemmata*, which seems identical with *M. trichate* and *M. triaristella*, which is synonymous with *M. tridactylitis*, being literally covered with their curious beetle-like flowers.

The requisites to preserve the *Masdevallias* in good health are found to be an equable cool temperature the year round, and especially the maintenance of it as cool as possible during the summer months; a profuse but regulated supply of rain-water according to the season of the year; the plants to be kept moist even in the coldest weather; while the house should be carefully shaded and well ventilated.

No species of Orchids are easier grown than the *Masdevallias* if properly treated, or more miserable-looking if the house be kept too dry, warm, and sunny. The plants of the chimæra section, *M. tovarensis*, are much benefited by being kept 5° or 7° warmer in winter than the others.

Cattleyas are likewise a feature, some grand varieties of *C. Trianae*, *C. Mendeli*, and *C. Mossiae*, were observed, as well as the phenomenal variety of *C. Trianae* with regular crimson dotted stripes up the segments, which was so much admired at the late Ghent Exhibition. The varieties of *Cattleya gigas*, do remarkably well with Mr. Courtauld, producing large and handsome flowers.

The *Cypripediums* of the niveum section were apparently in suitable quarters, the flowers on the

large pans of *C. niveum* being very fine; and *C. bellatulum*, which may be regarded as the finest representative of the group, being also in bloom. *C. concolor*, *C. c. Regneri*, and *C. Godefroyæ* were also well represented. This section of *Cypripedium* require a warm shady place where cold currents of air cannot reach them, and it is above all things necessary to search out a place they like, for they may often be brought from a bad to a good condition by simply removing them to the opposite side of the house to that they have been occupying. *C. Veitchii*, *C. Pearcei*, *C. ciliolare*, *C. Lowii*, *C. Haynaldianum*, and others were also in bloom.

The Orchids in the cool houses which showed good culture, exhibited some fine sprays on *Odontoglossum Alexandræ* and other *Odontoglossums*; there were large pans of *Promenaea citrina* and *P. stapelioides*, and spikes of *Epidendrum vitellinum majus*: some few species of *Lycaste*, *Sobralia macrantha*, *Miltonia vexillaria* and *M. Roezlii*, *Epidendrum nemorale*, and *E. oncidoides*, *Anguloa Ruckeri*, *Oncidium bicolor*, and other *Oncidiums*, &c. The warmer houses having placed among them fine specimens of *Nepenthes*, several *Vanda teres* in bloom and bud, *Saccolabium ampullaceum*, some showy *Dendrobies*, and then the *Phalænopsis*-house all the occupants of which are in a thriving condition. In bloom are the pretty *P. sumatrana*, and the rare violet-purple *P. speciosa* *Imperator*.

CRYPTOCHILUS SANGUINEA.

This neat little scarlet-flowered Orchid may now be seen flowering in the Kew collection; its singular flowers, however, recalling those of some *Aloe* or *Gasteria*-like plant, as the sepals are united into a tube somewhat contracted at the apex, and terminating in three small triangular lobes. This tube is pubescent outside, and the margins of the lobes dark brown, the rest being of an orange-red shade. The flowers are borne in an erect, somewhat one-sided spike, each in the axil of a long acuminate rigid bract, the inflorescence thus presenting an appearance somewhat unusual among Orchids. The pseudobulbs are ovoid, and produced in tufts; and there can be no doubt that a well-flowered clump of it would prove an attractive object. There is but one other species of the genus, *C. lutea*, which has somewhat smaller yellow flowers. Both are highly interesting little plants, and are found in various localities in the Himalayas. The name refers to the concealed lip, which is not easily seen, on account of the narrowly tubular outer perianth. *C. sanguinea* was originally discovered by Wallich on one of the mountains of Nepal. *R. A. R.*

DEFICIENCY OF COLOUR IN APPLE BLOSSOM.

IN the *Gardeners' Chronicle* of June 23, "D. T. F." asks why the want of colour in the blossom should portend a defective crop of fruit? He has himself answered the question by suggesting that the absence of colour indicates debility. This is, no doubt, the immediate cause of the defective crop; but why should debility induce pale flowers? Probably the true explanation is, that the colour of a flower is due to the condition of the [substances mixed with the] protoplasm contained in the cells of the corolla. This protoplasm is brown in the bark, green in the leaves, and usually of various bright colours in the flowers. In the green state it feeds upon the carbon in the air, and thus replenishes itself, increasing in quantity as the leaves expand. In the flower-bud the green colour is lost, and it can no longer feed upon the air, or increase in quantity; the flowers must therefore depend upon the amount of protoplasm in the bud at the time of opening. This protoplasm has to be used up in making new cells for the enlargement of the corolla. If there be only just enough for this purpose, the cells when formed will be empty, and the flower will be white. If there be a small surplus of protoplasm it will form coloured streaks along the veins, or spots, or diffused tints. If there be a large

surplus the flower will be entirely and brilliantly coloured. The amount of protoplasm in the bud will depend partly upon the constitution of the species, and partly upon the propitiousness of the season. It is the latter contingency which makes the paler flowers indicate unusual debility, and therefore danger to the crop. The normal colouring of the flowers depends upon the constitution of the species, and this is dependent mainly upon its position in the life-wave of its genus or family. In the evolution of the vegetable world the production of brightly coloured blossom is the last and latest stage; only the most advanced groups have as yet attained to that stage. In the order *Rosaceæ* the genera *Pyrus* and *Prunus*, to which our orchard fruits belong, are not among these most advanced groups. They are mostly in the stage of white blossom. The Apple is more advanced than the Pear, Plum, or Cherry, and has more colour in its corolla, because there is a greater concentration of protoplasm in the flower-bud, and therefore some surplus after the formation of the corolla cells. The colours which indicate the most advanced condition are yellow, rose-purple, and blue. These are the true secondary colours, and indicate that the molecular condition of the protoplasm has arrived at the maximum of concentrated simplicity. The molecular vibrations are nearly uniform, and will absorb only one of the three primary groups of colour-waves in white light reflecting to the eye the whole of the other two groups, and thus presenting the greatest possible brilliancy of coloured light. *F. T. Mott, Birstall Hill, Leicester.*

PLANT NOTES.

HELIONOPSIS JAPONICA.

This seems to be the proper name for a plant described in the *Gardeners' Chronicle*, 1887, vol. i., p. 711, under *H. umbellata*. It proves to be a most interesting plant, perfectly hardy in the open air, doing well with treatment similar to that given to *Helonias* *bullata*, and other plants of this nature. The rose-coloured flowers, of medium size, are borne two or three together on a raceme, 2 or 3 inches above the compact rosette of lanceolate light green leaves. It belongs to the *Liliaceæ* family, and is a native of Japan. Propagation is readily accomplished by division.

TRACHYMENE CŒRULEA

is a very charming annual, extremely pretty for pot culture as well as for cutting from. Seeds sown during the autumn make good pots for present flowering. Six or eight should be pricked off into a 32-size pot as soon as they are ready to handle, and kept in a cool house or frame until they flower. It is also interesting on account of its flowers being blue, this colour being rare in the order *Umbelliferae*, to which this plant belongs. This plant was figured in the *Botanical Magazine*, t. 2875, under the name of *Didiscus cœruleus*.

EICHORNIA PANICULATA,

or as it is named in the *Botanical Magazine*, 5020—where it is figured—*E. tricolor*, seems to be a species that has not received much attention of late years from cultivators of tropical aquatic plants. When planted in groups consisting of four or five or more plants, it makes a very attractive and showy mass. It is very free-flowering, lasting in bloom for a long time. It forms a very attractive object planted out in a tub in one of the houses of the Botanic Gardens, Cambridge, where it has been in flower for some time past. The plants were raised from seeds sown in February. They grow from 1 to 2 feet high, and close their flowers at night like *E. azurea*, which is also planted in a tub standing by its side. This is not such a free-flowering species as the one in question, but perhaps bears the most beautiful flowers. *D.*

CHRYSANTHEMUM HÆMATOMA

This *Chrysanthemum* in its native country bears a

profusion of lovely pink flowers, and I have been told by those who have resided for some length of time in Madeira that it is an extremely handsome species. Mr. Lowe, in his description of the plant in Madeira, says that it is "one mass of lovely rose-pink flowers, and conspicuous from afar, like a *Camellia* or *Rose* bush—is truly a splendid and surprising sight." Plants sent from Madeira have bloomed in the Botanic Gardens, Cambridge, and the flowers were pure white; but plants that have flowered more recently have a distinct tendency to become rose-coloured, and one we noticed the other day, which had been planted outside in a very sunny situation, quite a rose colour. Strong sunlight, no doubt, is the essential required for realising a likeness to the description given above by Mr. Lowe. Some of the flowers have been fine and large, measuring as much as $3\frac{1}{2}$ to 4 inches in diameter. It is of too straggling a habit for it ever to become a favourite pot plant. It is quite distinct from either *C. frutescens* or *C. Brousonetti*. Perhaps it might be successfully crossed between one of the above-named, so as to give it a better habit. *W. H., Botanic Garden, Cambridge.*

IRIS KOROLKOWI.

THE scientific zeal of Russian military officers and explorers guided by the Nestor of Russian botany, Dr. E. von Regel, of St. Petersburg, has within the last twenty years brought to light many new plants from Central Asia, and among them many new Irises. Of these latter not a few are obviously allied to, and yet in certain characters, differ from the group of Irises known as the "*Oncocyclus*" group, of which *I. Susiana* and *I. iberica* are well known examples.

In these two Irises the most striking features, outside the large size and colour of the flower, are the rounded orbicular form of the perianth segments, and the dispersion of the hairs on the falls in place of the compact beard of the ordinary Mediterranean "bearded" Iris. These characters are correlated with (1), large, generally inflated, and always persistently green spathe-valves; (2), a rhizome in which the new buds instead of being closely adpressed to old ones, are separated by a larger or shorter neck, so that each bud stands out singly; and (3), large seeds with a conspicuous light coloured strophiole, or appendage. These latter three characters are the really distinctive characters, for in some Irises, such as *I. acutiloba*, which certainly belongs to the same group as *I. iberica*, the perianth segments are narrow (hence the name *acutiloba*), and in others equally near to *I. iberica* the hairs are no longer scattered, but are gathered into a distinct beard.

All the *Oncocyclus* Irises have a one-flowered spathe, and the leaves, generally more or less falcate, are as a rule not narrow in proportion to their length. But several of the new Irises from Turkestan and Bokhara, while agreeing with the *Oncocyclus* Irises in the three characters just mentioned—of spathe-valves, of rhizome, and of seed—especially the last—have spathes which are two or three-flowered, and leaves which are narrow and long. They thus form a distinct group by themselves, to which I propose to give the name *Regelia*. To this group *I. Korolkowi*, *I. Suworowi*, *I. lineata* (which I am now inclined to regard only as a very distinct variety of *I. Suworowi*), *I. Leichtlinii*, *I. vaga* (which I am similarly inclined to regard as only a very distinct variety of *I. Leichtlinii*), and others belong.

In this group, *I. Korolkowi* (named after a distinguished Russian general, who, unlike some of his British analogues, does not regard it as below his dignity to help the science of botany and the art of horticulture), is distinguished by the large ovate-lanceolate falls, which, narrowing gradually from the blade to the claw, are flexed about half-way down in such a way that the claws of the falls embracing those of the standards form a funnel of some length, from the mouth of which the blades of the falls fall gracefully downwards, while the elegant standards rise erect. Both falls and standards are marked by more or less conspicuous but always

thin-branched veins, and the tunnel formed by the arched styles and the (from side to side) concave claw of the fall, from the intense colouring of the "signal" (or coloured blotch at the base of the blade, which shows the insect the right way to the nectar) on the latter looks like the mouth of a dark but beautiful cavern, in the depths of which the anther shimmers.

Within the limits of the species the lesser characters vary a good deal. In the form originally described by Regel and figured in *Gartenflora*, 1873, s. 225, t. 766, the falls, relatively narrow, are of a general olive-green colour, caused by olive-green brown veins and a like coloured "signal" on a creamy-white ground which has a greenish tinge. I have in my garden a plant which I owe to the kindness of my generous friend, Mr. Max Leichtlin, of Baden, absolutely reproducing the figure in the

Not having seen the flower itself I can say little more about it; it might be called var. *venosa*.

I have another variety in my garden, also the gift of Mr. Max Leichtlin, which reproduces the type, save that the olive-green brown is replaced by violet or puce; this might be called—if a name is really necessary—var. *violacea*.

Lastly, I owe to the great kindness of Dr. Regel, a rhizome, which, sent under another name, turned out to be a very distinct variety of *I. Korolkowi*, characterised by much broader, more obtuse segments, in which the venation is almost wholly obscured by a general violet or purple colour. This form certainly ought to have a name, and I propose to call it var. *concolor*.

In all probability there are other varieties yet to come to light, to say nothing of the new features which cultivated seedlings may show.

CULTURAL MEMORANDA.

TOXICOPILLEA SPECTABILIS.

This plant is of branching habit and produces large clusters of white flowers from the points of the shoots and the axils of the leaves during the summer months. Cuttings of the young growths taken off any time during the spring and summer months and inserted in small pots filled to within half an inch of the rims with peaty soil, and having a surfacing of silver sand, placed in a hotbed or anywhere in heat, watered, shaded, and kept close for a few days, will soon root. They should then be potted off singly into 3-inch pots, returned to heat, watered and lightly shaded from sunshine until the roots have taken to the soil, when shading should be discontinued. As the shoots grow, pinching the points should be done to make them branch out, and a shift should be afforded them as soon as the roots touch the pot sides, the final shift into their flowering-pots being early in September.

TABERNEMONTANA CORONARIA FLORE-PLENA.

No collection of sweet flowering plants that does not include this popular plant is complete. It is of free growth; the flowers, which are pearly-white, appear on the points of the young shoots. As the flowers wire well, they are very useful for buttonhole and bouquet work. Cuttings inserted in 3-inch pots filled with peaty soil and sand, put into a warm frame or pit, watered, and kept close, will become rooted in a few weeks, and should then be potted off singly into the same size pots as they are rooted in, putting them back in heat, giving water at the roots, and shading from bright sunshine for a few days until the latter have pushed into the new soil, afterwards stopping the shoots, and giving more room at the roots by shifting into larger pots when necessary, using the peat in a rougher state each succeeding shift.

SPRING-STRUCK CARNATIONS.

These should now be fit to put into their flowering-pots, using five-sixths of good fibry loam and one-sixth of sweet leaf-mould, with a little sharp sand added, potting firmly. Support the flower-spikes by small sticks, and stand the plants on coal-ashes in a sunny situation; and after the roots have pushed well into the new soil, weak liquid-manure should be supplied to them two or three times a week.

HERBACEOUS CALCEOLARIA.

A pinch of saved seed should be sown next week, and again in a fortnight afterwards. Fill well-crooked shallow pans to the rim with a compost consisting of sifted light loam and leaf-soil—about three parts of the former and one of the latter—pressing the same firmly together. Then immerse the pan in soft-water for a few minutes, and half an hour later sow the seed thinly over the surface; cover with a sprinkling of silver-sand, and place the pan under a small handlight in a shady corner in a cool greenhouse, or out-of-doors, previously placing a square of glass with a covering of moss over the seed-pan. The latter should be removed as soon as the seedlings appear, in the course of a fortnight or three weeks from the time of sowing. The young plants, when large enough, should be pricked out at 2 inches apart in similarly prepared pans, be placed in hand-lights, watered through a fine rose, and shaded from sunshine until the roots have taken to the soil. In due time they should be potted off singly into small 60's, 48's, 32's, and 24's.

THE CYCLAMEN.

A sowing of *Cyclamen persicum* in variety may now be made, using shallow pans filled to within an inch of the top with a mixture consisting of three parts light sandy loam and one of leaf-mould, making it moderately firm with the hand before sowing the seed, which should be covered lightly with some of the same description of sifted soil. Water through



FIG. 3. IRIS KOROLKOWII: GREY-LILAC WITH PURPLE VEINS.

Gartenflora. This, on historical grounds, should be considered as the type.

A few years ago Mr. Max Leichtlin received, and has since distributed, a very beautiful form, in which the falls and standards are nearly pure creamy-white, with tender unobtrusive veins, and in which the "signal" is of the deepest—almost black purple. It is to my thinking one of the most beautiful of all Irises. It was fairly well figured in the *Garden* (November 7, 1885). If this variety must have a name it should be called var. *Leichtliniana*.

The flower sent this spring to the Royal Horticultural Society from Kew (see our issue for June 2, 1888, p. 695) and shown in the accompanying illustration (see fig. 3), though the figure unfortunately gives only the flower, as shown, omitting many essential characters of the plant, is obviously another variety of *I. Korolkowi*, distinguished, as the woodcut shows, by the obtrusiveness of its veining.

As to culture, I will only say, that those who can grow *I. Susiana* without artifices can grow *I. Korolkowi* in the same way. For myself I am obliged to roast it in summer (June, July), by putting a temporary light over it. When I do this I produce rhizomes which meet with the praise of my friend Max Leichtlin. If I do not do this the plant gracefully waves its hand and vanishes. It seems rather to enjoy than otherwise the buffets of an English winter, and for soil appears to like a gritty, sandy, but still stiff loam. *M. Foster*.

LILY OF THE VALLEY POISONOUS TO FOWLS.

—The *Revue Horticole* publishes an account of the poisoning of a brood of fowls by the decaying flowers of this plant. Only the parent birds survived, and one out of ten chickens.

a fine rose, then cover with a piece of glass, over which place a covering of moss, and place the pan on a shelf in a greenhouse, or cool pit, where the temperature is about 50° at night. Remove the covering as soon as the young plants appear, and place, if not already in that position, near to the glass, to prevent the seedling plants from becoming drawn. As soon as large enough to handle, prick out the plants in 3-inch pots, putting three in each pot; water, and return to the same position and temperature as they were in before; afterwards, before they touch, potting them off singly into the same size pots, and attending to them in the way of moisture at the roots, as well as overhead, so as to prevent the leaves being attacked with spider and thrips. The plants should be shifted into larger pots before they get matted at the roots, using the compost in a rougher state at each succeeding shift. *H. W. W.*

GLORIOSA SUPERBA.

This beautiful East Indian plant, known also as *Clinostylis*, is seldom seen grown well, and a few remarks on its cultivation may be of value to your readers. The flowers are of an orange and red colour, and last a week or ten days in perfection. The soil they succeed best in is loam, leaf-mould, old cording, and silver-sand in about equal proportions. The first or second week in March is the best time to pot them, to flower in June and July, employing well drained pots three parts filled with soil, in which the tubers should be carefully laid, covering them with 2 inches of soil, the pots to be finally filled up when the shoots are a foot high. No water should be given until the tubers start into growth; then place the pots in a strong moist heat, watering freely as they require it, and train the plants as growth proceeds. For exhibition purposes four tubers in a 13-inch pot will cover a good-sized balloon trellis; but for cutting or ordinary decorative purposes one tuber in an 8-inch pot, and the shoots trained to sticks or up a rafter, will have a very good effect. As soon as the flower-buds show the plants will be greatly benefited by a little guano-water given once a week. When flowering is past and the leaves turn yellow water should be gradually withheld, and in December the tubers may be turned carefully out and placed in silver-sand until the next season. *W. Hodge.*

AMERICAN PRIMROSES.

GROWERS of *Primulas* will find the American species of no little value as late flowerers, in addition to the Himalayan kinds now so plentiful in our gardens. Within the last half-dozen years great strides have been made in this genus, not so much in numbers as in the length of time over which the flowering season extends; indeed, with careful management, we may have some of the *Primroses* all the year round.

America gives eleven species, six of which are peculiar to that continent, all charming flowers, capable of great range of variation and development, and worthy a first place in all collections of hardy flowers. These are, *P. angustifolia*, *P. cusickiana*, *P. mistassinica*, *P. parryi*, *P. rusbyi*, and *P. suffrutescens*; while *P. nivalis*, *P. sibirica*, *P. farinosa*, *P. cuneifolia*, and *P. borealis*, are also widely distributed in Asia and Europe.

P. suffrutescens, in flower now, is one of the most interesting *Primroses* we have yet seen. It is found at elevations of 9000—11,000 feet above the sea-level, on exposed rocks, Sierra Nevada, above the Yosemite Valley, Silver Mountains, &c. It was first discovered by Bridges, who describes the thick matted roots as filling the crevices of the rocks, and that they are more creeping than any other species—facts which are fully borne out by the plant as we know it in cultivation. The leaves are thick and leathery, spatulate, and coarsely toothed, somewhat like minima at the apex. Crowded near the growing point, those behind dying off, leaving bare stems, which throw out roots on the under-surface, enabling

the plant to move along. The flower-stem rarely exceeds 3 or 4 inches in height, bearing 3—7 deep maroon-purple flowers, with a yellow eye, each of them just under an inch in diameter. This plant, we find, does well on shingle, well elevated on the rockery, and easily increased by division of the branches.

P. rusbyi is a comparatively new species, recently described by Greene in the *Bulletin* of the Torrey Club, viii., p. 112, the original plants having been found, by the gentleman whose name it bears, on the Mogallon Mountains, New Mexico. It has also been found on the summit of Mount Wrightson, and the Santa Rita Mountains, Arizona, by Pringle. With us it is perfectly hardy in the open, having passed through last winter unhurt. Unlike *P. suffrutescens*, which is an evergreen, this species, by its habit resembling the Himalayan *P. sikkimensis* and *P. involucrata*, is peculiarly adapted for a climate like that of England. It is quite deciduous, the leaves and stems dying down and forming a little bud, which is easily protected, both from the change of climate and from the feathered tribe, by a handful of fibre, small pebbles, or other porous covering. In habit, &c., it resembles *P. cusickiana*, but is larger in all its parts. The leaves 2—6 inches long, very thin, with an oblong blade, tapering to barely winged petiole; flower-stem 6—7 inches high, bearing 3—10 deep purple-yellow-eyed flowers, an inch in diameter; tube twice longer than the calyx; limb obovate. This species is certainly a great acquisition to our already large list of *Primroses*, its value being enhanced by its flowers appearing just after the European and before the late Himalayan. *D. D.*

(To be continued.)

ROSES.

A PROTEST AGAINST DISBUDDING.

A HIGH authority urged the removal of all the side buds of *Roses* with stick or toothpick, and this as seasonable work for the month of June, 1888. It is hoped that no one save exhibitors, in search of fat flowers for their *Rose* boxes, have taken this advice, and that even among these may be found a remnant with sufficient taste left to spare the buds to grace their show blooms. For over full-blown *Roses*, however beautiful and large, were never meant to bloom, nor stand up, nor droop, alone, else would the graceful garniture of side buds not be given. Virtually these last touches of artistic grace and finish are withheld from a few of our *Roses*, such as the rank and file of the blooms of *Maréchal Niel*. It is only needful to turn from these bald, though huge masses of gold, to the smaller but profusely budded blooms of *Celine Forestier*, *Triomphe de Rennes*, and *La France*, to see at a glance the artistic value of bud garniture or support to *Rose* blooms.

We have it on the same authority that the exhibitor never neglects and that the amateur seldom practises disbudding. It is to be hoped that the latter is true now, and will become more so in the future, and that, in fact, the two words seldom or never may be transposed, so that the sentence may read thus—"The exhibitor seldom practises disbudding, the amateur never." Why, indeed, should the amateur who grows his *Roses* for their beauty in the garden, or in the house, pinch out their side buds with toothpick or blunt stick? The indignant *Roses* are up in arms all over the garden, and the rustle of their opening buds echoes back the question, Why? "Wild *Rose*" not only counsels disbudding, but gives his reasons for it. Here they are:—"Where a few *Roses* are left to cluster together, they are poor in quality; and if you cut one it has a moderately short stalk, while if you cut the whole bunch you might as well have had one good *Rose* as a cluster of indifferent ones." This is all very well from a mere exhibitor's standpoint: but what would the decorators, or "Wild *Rose*'s" sweet-heart, sister, wife, or artistic friends, or the true lover of Art or Nature say to it? Why, that the sentence begs the whole question, and the verdict given in

favour of such *Roses* has no solid foundation whatever. I challenge him to test his single blooms against clusters among all his fair sisters, and chronicle the results. These I am confident will suffice to put an end to the picking or pinching out of side buds, unless for exhibition; and even for exhibition such buds should have a place and score a point. There used to be a very wholesome rule in not a few *Rose* shows, to the effect that the *Roses* should be shown as far as possible with buds and foliage on a single stem. The National *Rose* Society might render important service alike to Nature and Art by reviving and enforcing such a rule. "Wild *Rose*" is doubtless familiar with the following verse from Leigh Hunt:—

"We are blushing *Roses*,
Bending with our fullness,
'Midst our close-cupped sister buds,
Warming the green coolness."

But what lover of Nature or of Art on reading this verse is not as much or more attracted by the close-capped sister buds as the full-bloomed blushing *Roses*? Nature furnishes us with both, both together, both in contrast, and it seems alike unnatural and inartistic to proceed with stick and toothpick to deprive ourselves of that rich, many-sided, many-formed, multi-coloured harvest of grace and beauty that Nature has laid up for our enjoyment in her rich prodigality of *Rose* buds. And then what a charming procession of blossom the buds provide for us! It is little wonder that we hear more complaints every year of the shortness of the *Rose* season. The *Roses* are forced with sticks and toothpicks to bloom all abreast, and those side buds that would yield the last *Roses* of the season, if not of the summer, are ruthlessly destroyed.

While writing thus strongly in defence of the close-capped sister buds I should like also to utter a protest against the wholesale slaughtering of *Rose* blooms now so prevalent in so many gardens. *Roses*, trees and bushes, are so cleared of bloom that, like children's pictures they almost need labelling "This is a *Rose*," for the information of the uninitiated. But, just as no *Rose* can ever look its best without few or many of its close-capped sister buds, so every *Rose* is seen to most advantage on its parent branch, forming part of its natural bunch or cluster. For, as Gerrard Lewis sweetly sings:—

"A gathered flower is but a fading thing,
Like beauty seen in death;
Though bright as ever is its colouring,
And odorous its breath.

Then leave the *Rose* upon its parent stem,
Where other *Roses* be:
'Twill live perchance long summer days with them—
A few short hours with thee."

Rosa.

EARLY SUMMER EXHIBITIONS.

WHILE plants grown under glass are little affected by external temperature or fluctuations of weather, and may be relied upon generally to be up to the mark at required periods, external vegetation is less readily responsive, and a very low temperature, with gloomy skies, heavy downpours of rain, and cold winds, does not help to produce that condition of maturity essential in exhibition products.

Vegetables, especially, are late in every way, with at present little prospect of their being pushed along by any access of warmth; indeed, those gloomy weather-prophets who are so ready to predict ill, and asserted that a north-east wind would prevail all the summer, seem to be in expectation of justification for their unpleasant prognostics. The natural product of the weather which, so far, has marked the earlier part of the summer, has been found in coarse growth, without any corresponding cropping products. Ordinary garden vegetation has assumed an almost tropical form, so abundant have been the rains; and with soil so full of manure as gardens usually are, no wonder that Peas, Beans, Potatoes, &c., are running wild in growth, whilst the pod and tuber production is indefinite.

During hot dry seasons it is possible to assist vegetation by giving ample waterings, and thus production is greatly accelerated. When heavy rains prevail it seems possible to do little but sigh for sunshine. The season started very late indeed. Soil was cold beneath, and the atmosphere above was cold also, accompanied by considerable gloom. Later abundant sunshine might have helped to catch up time somewhat, but the weather has been throughout deterring to productiveness, although coarse growth has been plentiful. Such vegetables as Cabbages and Lettuces have revelled in the abundant rains and low temperature, although it is worthy of remark that the winter stocks of Lettuces ran off to seed this year with exceptional speed.

Potatoes have made very tall, lanky tops, and it is to be feared no corresponding progress in the development of tubers. Broad Beans have run up tall where not stopped, and pods are swelling slowly, whilst on Peas the pods by no means keep pace with the haulm, which seems to be carrying off the chief portion of production. Very much indeed do Peas need sunshine to help the pods to fill, as also to give to the contents some flavour.

The lateness of the season, therefore, seems likely to conflict with the summer shows, and cottagers' products can hardly be up to the average. It is doubtful whether, on the whole, were the season studied, all such shows should not have been fixed a fortnight later than usual. Seasons vary somewhat, whilst shows apparently remain immovable in date. To invite from cottagers such products as Potatoes, Onions, Carrots, Turnips, and many similar products, which will only be matured by warmth, so early in the season, is hardly wise, as too often much growing material is destroyed in the effort to find for exhibition that which Nature has, so far, refused to produce. A. D.

FOREIGN CORRESPONDENCE.

PINUS CANARIENSIS, A LIME-LOVING CONIFER.

On the western Riviera, in my Grimaldi garden, and in that of my neighbour, Mr. Haubury, at Mortola, this beautiful Conifer (of which a full-page illustration was given at p. 721, vol. iii., n. s.) appears to thrive as well as in the Canary Islands, its native home; yet the soil is not volcanic, as in the island of Teneriffe, but the mere break-up of the limestone rocks which form the coast-line of mountains in this region. With me it is one of the Conifers that succeed the best; it grows rapidly, forming a succession of beautiful whorls, with clear interspaces, and is an elegant, handsome tree in all stages of its development, from a few feet, to twenty, thirty, or more. As its introduction on the Riviera is comparatively recent, we do not know yet what altitude it is destined to attain with us, but it grows as if it meant to be a very tall tree—boldly, vertically, compactly. I am grieved not to have known of it as a Conifer, suited to the soil and climate, twenty-five years ago, when I first began gardening on the Riviera. I now never pass one, large or small, without looking at it with admiration, and a feeling of satisfaction at having discovered a Conifer that seems so much at home in my rugged, limestone rocks, and which is such an ornament to the landscape wherever it appears. We propagate it from seed, which sprout like Beans in the seed-pan, not one in twenty failing.

This Conifer seems to do best in ravines and gullies, where, no doubt, there are crevices into which it can extend its roots. In such positions it grows rapidly, even when there is but little soil.

Planted in open situations, on the rocks, in a small amount of earth, it lives, but remains small—a mere shrub, like the *Araucaria excelsa*; but then, in such situations, there are no lateral crevices or fissures into which it can send its roots. I have had to remove all those so planted; not one has done well.

Mr Hanbury has some very fine tall specimens, but all, if I recollect right, are on the side of a deep ravine or gully.

The *Pinus canariensis* does so extremely well on our calcareous rocks that I cannot help thinking that in the Canary Islands it must also be growing on calcareous formations, that it is not confined to volcanic soils. Indeed, I would ask, is volcanic soil specially suited to Conifers? I do not recollect seeing any on the flank of Mount Vesuvius or Mount Etna. I have not, however, been higher than 5000 or 6000 feet up Mount Etna—to the Casa Inglese, so have no personal knowledge of the vegetation of the higher regions.

Although Conifers are more especially suited to granitic schistic soils, some species thrive admirably on calcareous formations, as recently stated in the *Gardeners' Chronicle*. The *Pinus halepensis*, or Aleppo Pine, for instance, covers the limestone rocks of the Mediterranean shores and islands everywhere. It is undoubtedly the commonest tree in the Mediterranean. All or nearly all the Cypresses thrive admirably in our calcareous rock soil. I have recently seen many small specimens of the *Abies Nordmanniana* doing very well on the Riviera, east and west of Genoa, but do not recollect meeting with any large specimens. I think, therefore, it must be a recent but successful introduction in these limestone regions.

Until recently I was afraid that the *Pinus canariensis* might thrive for a time, and then die—as has been the case with me with the *Wellingtonias* that I have planted—or that it might be naturally a short-lived tree, but these fears have been quite dispelled. Mr. Ernest Hart, the editor of the *British Medical Journal*, published last July in that journal a series of very interesting articles on the Island of Teneriffe, which he had recently visited. He therein states that the oldest tree in the island is a *Pinus canariensis*, which was already a grand old tree 400 years ago, when the island was first discovered, and is mentioned as such in the historical records of the time. Thus, so far from being a short-lived tree, it may be able to compete with its countryman the *Dracæna Draco*, or the American *Sequoia gigantea*. The climate of the Genoese Riviera is a marine climate, evidently akin to that of the Canary Islands.

It is sad to think that the entire Genoese Riviera might in all probability be clothed with the Norfolk Island Pine (the *Araucaria excelsa*) and the *Pinus canariensis*, but that such will never be the case, owing to the apathy of its southern inhabitants. They are rapidly cutting down their beautiful old Olive trees, and denuding the mountain sides of the Aleppo Pine, for fuel and timber, never planting trees but only Vines. The Mentone amphitheatre is rapidly deteriorating in beauty from this source, and ere long it will be as naked and barren-looking as the Vine-clad hills or mountains which surround Malaga. *Henry Bennet, M.D., June 20.*

NOTES ON ECONOMIC PLANTS IN HAVANA.

Some interesting notes on Tobacco culture, as well as on the introduction and cultivation of fibrous plants, in Havana, have recently been furnished to the Foreign Office, from which we gather the following facts.

Regarding Tobacco culture, it seems that the markets are affected by the general demand for light-coloured Tobaccos. This demand is said to cause injury to the plant, which, unless artificial bleaching be had recourse to, must be gathered before maturity, with loss of quality and aroma. There is as much Tobacco grown, and there are as good markets as ever, but the growers and manufacturers, in their race after quick returns, force and spoil the plant in the ground and the curing-house, and ship goods that not only no longer command the market, but are undersold by foreign and inferior, but probably more carefully prepared kinds. There is, as a matter of course, a large amount of exquisite and carefully handled Tobacco exported, but the price of this has become so high that it is above the reach of the middle-class consumer, this, however, ought not to

and need not be. Climate, soil, and acreage, are all in favour of a superior and large production that could hold the field against all comers, but the elements to make this a reality—namely, capital, labour, and frugal and unfettered administration—are wanting. The social and political state of the island is not of a nature to attract these elements, and prostration and uncertainty are seen everywhere. Although Tobacco grows well all over the island, the soil and climate of the south-west portion produces the finest. This is known as the *Vuelta Abajo*, and lies along the foot-hills of the Sierra stretching to Cape Antonio and the northern side of the great plain which reaches from sea to sea across the island. The very best land of the *Vuelta Abajo* lies near to Consolacion and the lomas on the eastern side of the Cayos which overlook the Palm-covered plain.

The planter's house-made cigars, called "veneros," or "farmers," are celebrated at Consolacion, and possess a delicious aroma, especially when smoked immediately on being made. The leaf is of a very rich, light, coffee-brown, with a slight hairy down on it, which is soft and tender. To test the leaf, the *vengero* always tries the strength of the material by passing it over his finger in the way one tries the skin of the glove. The "maduro," or the ripest, is considered the very best; but as of late years fashion has ruled in favour of light colours, the Tobacco is dried in such a manner as to get the required shade, but in the opinion of the best judges, to the detriment of the flavour.

The Tobacco seed is sown early in October, after the rains have well soaked the light sandy soil, and cuttings are taken between October and March. Some vegas lying along the arroyos, which are always full of good and abundant water, never fail; others produce only the "tripa," or kind used for working up to form the core of the cigar, the outer leaf being of a finer brand. In this consist most of the frauds which prevail very extensively in the trade.

A company called the Cuban Fibre Company (Limited) has been formed in London for cultivating and extracting the various fibres in Cuba, principally the *Sansevieria*, or *Leuga de Vaca* plant, which give the best fibres of their class. Preliminary arrangements have been made for planting about 1000 acres in different parts of the island; so that next year the export of the fibre will commence, and will, it is expected, be equal to the best Hemp and some kinds of Flax. The cultivation of these hitherto neglected plants is likely to prove a success, for they take up little of the planter's time, and grow readily on the poorest land, leaving him free to attend to more important cultures. In a single month, which may be in the early spring or in the rainy season, hundreds of shoots or cuttings may be planted, giving later a considerable crop. Cuban labourers with families, who are numerous in some districts, will find this new agricultural industry a steady means of gaining a livelihood.

THE HERBACEOUS BORDER.

ANEMONE NARCISSIFLORA.

This is a plant which, to grow well, only requires patience, as it is not particular as to soil, and likes a sheltered border better than an exposed rockery. Several have grown in my garden without any attention for several years. Those which have been longest established, and which as yet show no signs of deteriorating, are about 15 inches high, and as many across. I counted on one plant twenty-seven flower-stalks, nearly all of them five-flowered. The flowers in general appearance and size resemble Apple blossom, being pink in bud and white inside. On some plants the flowers are nearly all five-petalled and on others many petalled. Like *Anemone alpina*, the growth from seed is slow, at least three years being required to reach flowering. I have carefully compared my plants of *A. narcissiflora* with

some plants of the Himalayan *A. polyantha* sent to me from Kew. The leaf of the latter is more robust, and less divided: the flower-stalk thicker, with a tendency to form compound stalks above the bracts. The flowers seem to have the petals more concave on the upper surface. In all other points they resemble those of *A. narcissiflora*. *C. Wolley Dod, Edge Hall, Malpas.*

AQUILEGIAS.

It is not many years ago when the new varieties of *Aquilegia* caused quite a stir among lovers of hardy plants, and they were well deserving the notice they then received, and the high character they had; but, unfortunately, one of the best and most striking of them, *A. cœrulea*, seems almost lost, as it is very seldom one meets with it now. This, no doubt, results from its rather delicate habit, which led to dwindling and weak health, and the only way of keeping and growing anything like strong plants is to sow seed annually, and thus be constantly raising fresh ones and renewing the stock. Another undesirable feature is its tendency to sport; or rather, in common with all the Columbines, to become impregnated by the pollen of others; and therefore plants intended for seeding purposes should be isolated, or it is impossible to keep the sort true. The original kind when first introduced had long slender spurs and very large wide open flowers, the petals being of an exquisitely soft pale blue and white, and as the blooms stand nearly erect, they show off to the greatest advantage. As this *Aquilegia* comes early into growth, and is somewhat tender, and often suffers from spring frosts, it is necessary to place the plants in a sheltered position, and they also require a warm well-drained soil—that is, sandy, loose, and open—as they do not succeed well unless their fleshy roots are enabled to draw moisture from the subsoil. The next noteworthy Columbine is *A. chrysantha*, which has very long spurs, and much less distended flowers than *A. cœrulea*, the colour being of a delicate canary-yellow, and the habit of the plant tall and vigorous, the stems branching and blooming freely, which they continue to do for six or eight weeks in succession. With ordinary treatment, and a suitable position, there is no fear of losing this variety, as, unlike *A. cœrulea*, it is not only of strong growth, but it is a true perennial, and may be increased readily by division, the best time for doing this being just as the plants start in the spring.

Among the older forms of Columbine, *A. glandulosa* is one of the best. This has handsome blue and white flowers, and comes into bloom early, and the habit of the plant is strong, but it does not stand being interfered with so well as the one just referred to, and requires care in dividing. Besides the two named, and referred to above, there are now many hybrids, and the best of them are quite worth a place in the herbaceous border; but where they come in well, and are of great value, is in the wild garden, or alongside of woodland or shrubby walks, where, if planted in quantity with *A. vulgaris*, they will cross, and seed freely, and increase and spread, and form quite a feature in that part, where they will make a fine show. To raise the better kinds, seed should be gathered as soon as it is ripe, and either sown thin or in gentle heat in spring, but the plants come stronger if they are got up under hand-lights in August, and wintered by having the lights kept over, and tilted above them. *J. S.*

THE APIARY.

It is best in any year, whatever may be the weather, not to give much comb-building to do after the commencement of July, and this year certainly not. It always pays to give more foundation as the season goes on. If strong combs which will not break in the extractor are required, it is best to wire the frames. This can easily be done at home. Get some thin tin wire, No. 32, at any ironmonger's. This can now be bought in reels for the sum of a

penny. Lay the frame down on a piece of wood cut to fit easily inside the frame, and about half an inch thick. Bore about five holes, with a very thin awl, through the top bar, and equidistant apart; then bore five in the bottom bar, just opposite the others. Unwind some of the wire carefully from the reel, straightening it a little as you unwind. Put the wire through all the holes, and draw it tight, and fasten the ends so that when complete there are five pieces of wire hanging perpendicularly, and parallel to the two side bars. Now lay a sheet of foundation down on the piece of wood, and lay the frame on top of it. Get a Woiblet spur-embedder, which consists of a small wheel which easily turns on an axis at the end of a piece of metal. Warm the wheel in a flame, or some very hot water, and run the wheel along the wire. The warmth of the wheel, added to a gentle pressure, causes the wire to be embedded in the wax, and a sufficient amount of the latter will be melted, and will cover up the wire so that it cannot be seen. Do the same with the rest of the wire. Now lift the frame from the block, and the foundation will hang beautifully in the centre of the frame, and the wires will keep it perfectly straight and true, and it will keep so while the bees operate upon it. Some people put the wire diagonally on the frame as well, and by so doing make a firmer job of it; but the first-named way of fastening the wire is sufficient, if care be taken not to pull it too tightly. If it is pulled too much the bottom bar will be drawn up—i.e., if that bar is very thin. With all deference to our prominent framemakers, I would suggest that the bottom bar be made a little thicker than is mostly the case; then the wire can be drawn as required without the bar moving. Frames thus wired will not break when put in the extractor, however new they may be. *Bee.*

AMERICAN NOTES.

PACKING.

MR. PETER HENDERSON, of New York, finds storing empty pots in soap-boxes, and then piling up the boxes, better than using a pot-rack; there is less breakage, and the pots can be more readily removed where wanted. He has found the following method of packing the best for very cold weather:—The box is lined with heavy paper; then pieces of board which fit into the box are placed inside, and the box again lined with paper over them; the boards are withdrawn, and the space between the two linings of paper filled with sawdust; an inch thickness of sawdust is thus placed entirely around the plants, but separated from them by one lining of paper. Plants so packed have travelled long distances without injury in the coldest weather.

MAGNOLIA PARVIFLORA.

This is one of the choicest gems of our garden. We have a fine thrifty specimen between 4 and 5 feet high. It bloomed in May, 1886, but not in 1887, and I find that it is going to bloom again this year. Its flowers in size and form are not unlike those of *M. glauca*; and of a creamy-white colour, with crimson stamens, and powerfully and deliciously fragrant. The flowers opened May 23—after the foliage began to unfold—and dropped before May 30.

OTHER EARLY BLOOMING MAGNOLIAS.

Magnolia stellata (Halleana) began blooming with us about May 20, and was the earliest of all in flower. The plants assume a stocky bush form; the flowers are very numerous, and white, and the petals narrow and spread out or reflexed a little. It has not the stiffness of the other forms. The Yulan *Magnolia* began to open April 28. It is the most showy of all. The flowers are large, white, and abundantly produced on leafless bushes. While striking and beautiful almost anywhere, they are seen to best advantage when they are growing in front of tall evergreen trees, as Pines or Spruces.

Thurber's and several other Chinese *Magnolias*, all well worth growing, are also now in bloom with us.

COCKSCOMBS AS BEDDING PLANTS.

Many of the florists in attendance at the Chicago meeting of the S. A. F. noted the beds of *Celosias* and *Centaureas* at Lincoln Park in that city, and were much impressed with their beauty and oddity. They were certainly a departure, and very handsome. Head gardener Stromback was continually asked the question, "How do you keep the *Celosias* so dwarf and uniform in height?" In reply to these visitors, and for the information of other readers, we have obtained some notes on his method of handling the plants.

The variety he grows was obtained about ten years since under the name of President Thiers, and Mr. Stromback has kept up his stock by seed of his own saving ever since. The colour of the "comb" is a deep scarlet, approaching crimson. He sows the seed the latter part of March, in pure sand, as he finds that the seedlings damp off quickly if planted in soil. As soon as large enough to handle, the seedlings are pricked out in boxes of soil, and before they have made much growth in the boxes they are potted singly in 2½-inch pots, where they remain until the "comb" shows, when they are at once shifted into 4-inch pots. The temperature of the house is kept the same as for *Coleus*, and the plants are held a little close until the roots start after shifting. The young plants are kept rather dry at all times, as they are very prone to damp off.

The plants make no growth in height after the "comb" has begun to develop, and to keep them quite dwarf, growth must be retarded until it appears, when they may be treated more generously, as the whole strength of the plant then goes to the "comb." In spite of the greatest care, there will be some plants which are a little taller than is desired, and these can be used in a bed by planting them so much deeper than the others as will make all the tops uniform in height. *American Florist.*

FORESTRY.

CLEANING PLANTATIONS.—It is now high time that all young trees and shrubs were examined, and rank vegetation of whatever kind removed from amongst them. Such work must only be entrusted to careful men, for the damage oft inflicted on the tender stems and branches of young trees by the shearing-hook or scythe when swayed by a careless hand is hardly credible, and would scarcely be believed unless by those who have seen the evil results. The margins of plantations, particularly such as adjoin cultivated land, should likewise be run over, and all Thistles, Docks, and Nettles, cut over before the season of seed-shedding comes on. Thistles, if left too long, will ripen and shed their seeds, even after being cut over, so it is well to bear this in mind, and have them removed before the flowers are fully developed.

Pruning.—The summer pruning of young trees is of much importance, and the young plantations should receive the first attention. Rival leading shoots must be cut away, and ungainly side-branches and heavy-foliaged branches be cut back somewhat. Lop off all broken branches, dress the wounds neatly, and paint over with gas-tar. Now is a good time to open up views, to lop off overhanging branches from roads and walks, and to prune out dead wood from park trees and shrubs. The too close pruning of all large branches is to be avoided as much as possible, it being better to foreshorten first before the final amputation.

Barking.—This should now be all but completed, but the showery nature of the weather during the past six weeks has considerably retarded the harvesting process. Care will be necessary to avoid heating, which means discolouring of the bark, and happy is the forester who is well provided with drying sheds and tarpaulins in a season like this. Prices of the best Oak bark are likely to be low, but that damaged by the weather will not find a ready market.

Painting and tarring.—Hurry on during dry and warm weather the tarring of all fences, iron and wood, the painting of field-gates, outbuildings, and tool-houses. Gas-tar is preferable to the tar varnish now commonly in use for such purposes, and may, if too thick for applying with a brush, be thinned down to any consistency by applying a little crude naphtha. In tarring fences a good preliminary step is to have all grass and weeds cut low, particularly around the posts and stays, so that the tar may be applied well down to the ground-level.

Clearing the falls.—Where faggots and firewood have not yet been cleared from the falls this should be accomplished with as much speed as possible, else serious damage to the young and tender growth will be wellnigh inevitable. Clear out the branches and firewood first, and after that the heavy timber may be dragged or carted.

Dry weather should, if possible, be chosen in which to drag timber from the woodlands, for if such work is carried on when the roads are soft and gritty, the small stones are apt to adhere to the trees and cause serious annoyance to the sawyer when they are being converted into workable boards and planks.

Prices.—The larger branches, as well as crooked poles and tree stems, may be formed into cartloads, these selling readily enough at from 5s. to 7s. 6d. each. All the smaller sprays can be converted into faggots, these being usually formed into two kinds—one for fire-lighting and the other for oven-heating. Small faggots fetch 5s. per hundred, while those of larger size often realise as much as 10s. or 12s. per hundred.

Heavy timber is now at a discount—indeed, certain kinds are hardly saleable at any price. Oak, Ash, and Elm meet with a fairly ready market, and for local purposes they sometimes fetch a pretty remunerative price. The following list will show at a glance the average price per cube foot at present realised for English-grown timber of fair quality and size:—Oak, 1s. 6d.; Elm, 1s. 8d.; Ash, 1s. 8d.; Beech, 7d.; Birch, 9d.; Willow, 8d.; Alder, 10d.; Sycamore, 1s. 8d.; (the price of Sycamore timber varies very much with locality); Gean, 1s. 2d.; Chestnut (Spanish), 1s. 8d.; Horse Chestnut, 7d.; Hornbeam, 8d.; Plane, 1s.; Scotch Fir, 7d.; Larch Fir, 1s. 1d.; Austrian and Corsican Pine, 7d.; Yew (if of large size), 1s. 6d.; Cedar, 1s.; Lime, 9d.; Silver Fir, 8d.; Spruce Fir, 7d.; Poplar, 8d.

Local demand frequently affects the price of timber: thus, in boat-building districts, Oak, Elm, and Larch usually find a ready market, and at prices considerably higher than those above quoted. Alder and Birch, where clog-making is considered as an industry, sell very readily at the prices just mentioned, which may also be said of small-sized Sycamores. *A. D. Webster, Holwood Park, Kent.*

PLANTS AND THEIR CULTURE.

PRIMULA SINENSIS.—The earliest sowings will now be sufficiently advanced to be potted. If the pots used are 60's the compost may be rather finer than if a larger size be used, employing about one-half loam and one-half leaf-mould or sifted rotten manure and sand. Make the plants moderately firm, as if too loose, the soil does not keep in that equable condition of moisture so essential for the well-being of these plants. Do not pot the plants too high, or rotting at the collar will take place, but let the base of the leaves be so far in the soil that for some time no other support is required to keep the plants in position. Primulas like a temperature slightly above that of an ordinary greenhouse. A suitable place is a house or pit with a northern aspect, shaded from the sun only during the brightest part of the day, reducing the air as the sun declines, but always being careful to prevent it becoming stagnant. Damp down the house freely, but avoid wetting the plants.

Double Primulas.—These are easily increased by cuttings put in about this time, the old plants having had time to recuperate themselves since flowering, and are now growing afresh, and the cuttings are not so subject to damping off as earlier in the year. Take off healthy crowns, trimming off as few leaves as possible, and taking care that there is a good firm base to the cuttings. Insert them singly in small pots, using a light compost, with a pinch of sharp sand about the cuttings. Secure them to small sticks by neatly looping up the leaves. At this season a gentle hotbed, with some moderately moist

material in which to plunge the pots, is a good place in which to strike them.

Succession sowings of seeds should still be made, treating them as recommended at p. 527, April 28. Young seedlings are better pricked off into pans or boxes, as they are then not so much exposed to the varying state of wetness and dryness in the soil.

Old plants kept over from last season, if slightly reduced at the roots, and repotted, make fine specimens by the autumn. I have seen some so treated which were 2 feet over, and loaded with flower. It is better to plant them rather deeply in the pots, and give them a good soaking—afterwards watering sparingly until the pots are filled with roots. *F. Ross, Pendell Court, Blitchingley.*

THE FLOWER GARDEN.

FLOWER BEDS.—Those that are planted with the usual soft-wooded summer-flowering subjects are filling up rapidly, many of them making such rampant growth as to demand constant attention in regard to pegging down, stopping, thinning-out and regulating young shoots. Such work is imperative amongst Verbenas, Heliotropes, Petunias, Gnaphaliums and similar plants if a high degree of keeping is to be maintained. The beds containing Pelargoniums, Begonias, Calceolarias, &c., should also be looked over at regular intervals, keeping them free from weeds and the plants free from withered flowers, seed-pods and dead leaves. Iresines, Coleus, Perilla, Abutilons, and such like plants will require attention, and should have the points of all strong shoots pinched out so as to give them a shapely appearance. *Stachys lanata*, when used as an edging to the beds, should have all flower-stems and misplaced growth cut off, otherwise it will soon become unsightly as an edging plant.

Carpet beds will need unremitting attention for the next few weeks to maintain them in good order, bearing in mind that to be pleasing they must present a finished appearance. The various lines, panels, or figures of which a design may be composed should be kept as accurately as is practicable. No plants, perhaps, require so much attention as *Mentha*, *Sedums*, *Cerastiums* and *Golden Pyrethrum*; the last named should be kept within bounds by pinching back and not by clipping with hand-shears, as sometimes is the case, but which causes a stubby and unsightly appearance. Few varieties of *Alternantheras* require but little done to them beyond keeping them in line. *Echeverias* are generally considered to be more effective with the flowers taken off, but it is a matter of taste, and had better be treated as such. *Ageratums* and *Iresines* ought to be pegged down to keep them at the same level as other plants growing near them, and the strongest shoots of the last named should be stopped as often as it becomes necessary. *Mesembryanthemums* will need the shoots to be thinned out at times, in addition to the usual regulating and pinching back of leading growths.

Shrubs.—Evergreen and deciduous flowering subjects, when the flowers begin to fall, should be pruned; this will consist of shortening back such shoots as have produced flowers, leaving a greater or less length of wood, according to habit. Some plants will also be benefited by a judicious thinning out of the young growths, removing only the weakest and misplaced ones, which will have the effect of admitting more air and light to facilitate the ripening of the wood, without which abundance of flowers cannot be obtained the succeeding year. The present time is also opportune for taking notes with regard to planting and transplanting operations in the autumn.

Pinks.—Pipings of these may be put in without further delay, and may be taken off with a bud and cut just below a well ripened joint, cutting off the points of the leaves and putting them under a wet cloth immediately afterwards. Two modes of propagation may be resorted to: they may be inserted firmly in a sandy compost about 2 inches apart under hand-lights on a shady border, or they may be put in boxes or 6-inch pots well drained, and stood in a frame where they can have the assistance of a little bottom-heat as soon as rooted; gradually harden off, when they are struck, preparatory to planting out in beds. The last method I regard as being the better of the two, and if they are kept shaded from bright sunshine and properly attended to in regard to moisture few losses will occur. Propagate in quantity such varieties as *Mrs. Sinkins* and *Anne Boleyn*, these being two varieties most useful for cutting purposes.

Dahlias.—These are now making rapid growth, and will require close attention. Cut off weak lateral growths, and in tying up the leaders make due allowance for the stems to swell afterwards. If large blooms are required, it will be a good plan to pinch off all flower-buds that may be appearing at the present time. *J. Horsefield, Heytesbury.*

FRUITS UNDER GLASS.

VINES. Early houses from which the crop is cut should be kept cool and well watered, and if red-spider has attacked the foliage, well syringe the vines once a week with petroleum, in the proportion of a wineglassful to four gallons of rain-water heated to a temperature of 85°, and on all other days with clear water only. I once syringed a couple of Black Hamburgh vines with petroleum in the proportion recommended when the fruit was half-coloured. It completely destroyed the spider, but it arrested the colouring of the fruit, although it was quite as well flavoured as any other vine which was not so syringed. Houses in which the Grapes are ripe must be kept cool and airy, and if the weather be dull and wet a little warmth may be allowed in the hot-water pipes to prevent stagnation of the air. Muscats and other white Grapes will stand any amount of direct sunshine and be all the better for it; Black Hamburghs, on the other hand, will rapidly lose colour after they have reached maturity, and it is better therefore to afford the vines a light shade. This must, however, not be of such a nature as to darken the house, otherwise much harm will be done to the vines. Gros Colmar and other Grapes which hang during winter should be gone over now the fruit is on the point of colouring and any berries which are too close may be eased by removing some of them. The late rains have lessened the labour of watering outside borders, but borders inside must have strict attention in regard to watering, guano in small quantities being mixed with the water used with advantage when vines are swelling a heavy crop of fruit. Let a night temperature of 75° to 80° be maintained in houses swelling their crops, and it may be allowed to run up to 90° for a short time after the houses are closed, with abundance of atmospheric moisture, but after 6 p.m. air may be admitted in small quantities by the front ventilators and during the night.

Young vines which are being prepared for fruiting next year should have all the lateral growths pinched to one leaf, and kept to that in the meantime, the excess of sap being allowed to develop growth at the end of the rod. If the vines are very vigorous, two or three of the top buds may break, and when this takes place, these can be allowed to extend to two or three leaves, and then little danger to the future fruit-buds need be apprehended. Young vines which were planted this spring should be making rapid progress, and should be allowed to develop as much growth as there is space to occupy, as the canes will be cut back to the first wire after the foliage has dropped.

Any vines which have not yet been planted may be put in. Choose young plants struck from eyes this season; keep the house well syringed after planting, and good progress can yet be looked for. Such vines will have a decided advantage over others planted next spring.

When it is deemed advisable to renew the borders of any of the vineries after the crop is gathered, preparations should be made by getting the necessary soil and other ingredients mixed, so as to be ready when the work is undertaken. *W. M. Baillie, Luton Hoo.*

WEIGELA AMABILIS.—What a rich legacy of beauty the large amount of sunshine of the last summer left us, as seen in the abundant blossoming of, among other things, our old-fashioned shrubs. An old bush in the York Nurseries of *Weigela amabilis* has been very conspicuous in this respect. The bush has about 100 branches, each bearing twenty-five to thirty trusses of its rosy-pink flowers, with fifteen to twenty blossoms in a truss. Its appearance has been exquisite; the semi-drooping habit adding to its gracefulness of outline. *J. S. G.* [As a specimen shrub on the lawn when well grown, there are few better. *Deutzia scabra*, which flowers at the same time of the year, and which will grow to 6 feet in height, is an excellent companion to it—the one rose-coloured the other white. *Ed.*]

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W. RICHARDS, 41, Wellington Street, Strand, W.C.

APPOINTMENTS FOR THE ENSUING WEEK.

SHOWS.

MONDAY,	JULY 16	Newcastle-under-Lyne and Nuneaton.
TUESDAY,	JULY 17	Leek and Ulverstone.
WEDNESDAY,	JULY 18	Birkenhead.
THURSDAY,	JULY 19	Helensburgh, Hammersmith, Northamptonshire, and Salterhebble.
FRIDAY,	JULY 20	National Rose, at Darlington.

SALES.

TUESDAY,	JULY 17	Imported and Established Orchids, at Protheroe & Morris' Rooms.
WEDNESDAY,	JULY 18	The remaining Portion of the Collection of Orchids formed by the late John Day, Esq., also Water Colour Drawings of Orchids, Herbarium Specimens, &c., at Stevens' Rooms.
THURSDAY,	JULY 19	Valuable Established Orchids, from Mr. F. Sander, Orchids in Flower, &c., at Stevens' Rooms.
FRIDAY,	JULY 20	Established Orchids from the Collection of the late H. Littleton Esq., by order of the Executors: Imported Orchids, at Protheroe & Morris' Rooms.

Barren
Strawberries.

A SHORT time since we received complaints that a Mulberry tree which usually produced fruits was this year covered with male blossoms only. Every year complaints of similar character reach us with reference to Melons, Cucumbers, or some other plant, and, indeed, the facts are so common, and the inferences from them now so generally admitted, that it is a matter of surprise that practical gardeners have not yet discovered the means of so regulating the conditions of growth as to ensure the required fertility of the blossom in a large proportion of the cases. In some instances, indeed, matters are beyond our control, but with forced Strawberries or Melons there ought to be no great difficulty. Had we a properly organised experimental garden, a series of well-considered experiments carried on for two or three seasons would probably suffice to show what we could do and what we could not do, and ensure the grower, to a large extent, against failure.

Some Strawberries naturally bear male blossoms on one plant, female on another (dioecious), and the same plant that bore fruit one year may, under altered conditions, produce male flowers only in another. The original Strawberry, it is assumed, was dioecious, it subsequently developed stamens and pistils in the same flower, as in most of our European varieties, or remained in its dioecious state, as in some of the American sorts. We quote from DARWIN'S *Variation of Animals and Plants*, vol. i., 1868, p. 353. the following summary of facts gleaned by our great naturalist from the horticultural journals of this country and America:—

"Much has been written on the seeds of Strawberries; the true Hautbois properly bears the male and female organs on separate plants, and was con-

sequently named by DUCHESNE, dioica; but it frequently produces hermaphrodites; and LINDLEY, by propagating such plants by runners, at the same time destroying the males, soon raised a self prolific stock. The other species often show a tendency towards an imperfect separation of the sexes, as I have noticed with plants forced in a hot-house. Several English varieties, which in this country are free from any such tendency, when cultivated in rich soil under the climate of North America, commonly produce plants with separate sexes; thus a whole acre of Keen's Seedlings in the United States has been observed to be almost sterile from the absence of male flowers; but the more general rule is, that the male plants overrun the female. Some members of the Cincinnati Horticultural Society, especially appointed to investigate this subject, report that 'few varieties had the flowers perfect in both sexual organs,' &c. The most successful cultivators in Ohio plant for every seven rows of 'pistillata,' or female plants, one row of hermaphrodites, which afford pollen for both kinds; but the hermaphrodites, owing to their expenditure in the production of pollen, bear less fruit than the female plants."

There are some physiologists who maintain that these phenomena are indications of a particular inherited tendency or constitution and which is not affected by external conditions, and if so it would not be influenced by any cultural proceedings. To whatsoever extent this may be true, it certainly is not absolutely so. In illustration of this we cite a letter from a well-known Strawberry grower, which we commend to the notice of our readers:—

"Your correspondent on p. 18 touches on a subject just now of special interest, and a few more remarks may be appropriate. One of the chief causes of barrenness in plants is immaturity of crown, consequent on a dry soil, such as we had last season, where the roots are prevented from obtaining the amount of nutriment which is necessary to the production of fruit-buds. This immaturity may be brought about by poverty of soil, and the scarcity of root-fibre which this occasions also materially affects the productive powers of the plant. Again, undue lengthening of the roots in search of food is a source of failure, as food within short reach economises the work of the plant, and maturity is sooner attained. Strawberries especially require liberal mulching, as by means of this a continual growth of surface-root is secured. Transplanting also favours the growth of root, the growing points being broken by removal, fresh ones shoot in greater numbers to take their place, and forming the fibre-roots which are so essential to the production of berries.

"There are some varieties which cannot be induced to form fruit-buds under any circumstances. These probably have a tendency to propagate their kind solely by runners, and the tendency is intensified by the eager horticulturist, who, desirous of securing early and robust plants, neglects those varieties with comparatively few runners, and distributes the former wholesale to his friends forthwith, and may himself even plant a bed of them, only to find out too late their unsuitability. As an instance of productiveness we have Filbert Pine, which, until the fruit crop is gathered, produces no runners, the whole force of the plant seemingly being spent in the production of berries. Where varieties with this character are cultivated, and the fruit buds can be sacrificed, these latter should be taken out before layering the runners, and by this means favouring the growth of the plants. If a variety which may be easily fruited is by drought, poverty of soil, or other causes, prevented from bearing a full crop, or any crop, for a season, there is no reason why the plants should not be brought again into fruitfulness by judicious and careful cultivation; but if they are more than two years old it is preferable generally to make a new bed with runners obtained from trustworthy varieties. One of the best is Vicomtesse

Hericart de Thury, whilst two of the more uncertain bearers are British Queen and Sir Charles Napier. Soil and situation have a great influence on the more delicate kinds of Strawberries, whereas Black Prince or the Vicomtesse are sufficiently hardy to thrive almost anywhere.

"Another cause of barrenness is the layering of runners too late in the season, those layered in September being very open to this fault if not removed very early from the parent plants and from the bed where rooted. If, however, they are transplanted into a well prepared bed they seldom fail to fruit profusely. There are other causes of blindness in the plants such as overcrowding, and the shutting out of light and air by surrounding crops, bushes, and trees. Severe checks to growth, as the breaking and blackening of leaves by the wind, frost, or snow, will lead to failure in Strawberry growing, the plants by such disasters being often so weakened thereby that a full crop of fruit becomes impossible. Most nearly connected with the failures of the present season is the drought of last summer alluded to previously, although other causes may partly be accountable for them. Nearly everything in Strawberry culture depends on the maturing of the crown itself, the result of a healthy leaf and root development, early layering of stock, and this obtained from prolific plants. John Low, Driffeld."

THE ROYAL HORTICULTURAL SOCIETY.—The fortnightly meeting in the Drill Hall on Tuesday was remarkable for the interest, excellence, and variety, of the plants exhibited. Detailed notice is given elsewhere, but we cannot avoid special mention of the noble new Campanula-like plant exhibited from Central Asia by Messrs. VEITCH, a hardy perennial, the worst feature of which, to English growers, will be its name—Ostrowskya. The Kew collection was again most interesting; the same may be said of the illustrations of ornamental trees and shrubs exhibited by Messrs. PAUL & SON and Messrs. VEITCH, of the alpine and herbaceous plants of Messrs. WARE and PAUL, the Delphiniums of Messrs. KELWAY, the Begonias of Messrs. LAING, and others. The interest of these fortnightly meetings, which has always been great, has become more than ever so of late; so that connoisseurs and plant-lovers should make a point of seeing these exhibitions, and of lending their support to the Society.

COUNCIL MEETING.—In consequence of the great success of the last Apple and Pear Conferences, and in order to correct and bring up the reports then published to the present date, the Council of the Royal Horticultural Society has decided to hold another Apple and Pear Conference at the gardens at Chiswick, from the 11th to the 18th of October. Anyone desiring information in reference thereto is requested to communicate with Mr. A. F. BARRON, Superintendent of the Royal Horticultural Society's Gardens, Chiswick.

GARDENERS' ORPHAN FUND.—Mr. A. F. BARRON, the Hon. Secretary, requests us to state that the paragraph in our last issue, in reference to the Gardeners' Orphan Fund election, is incorrect, and was forwarded to the Press without the authority or knowledge of the committee.

MR. E. R. CUTLER.—The friends of this gentleman and the well-wishers to the Gardeners' Royal Benevolent Institution will hear, with regret, of a painful accident which has occurred to their energetic and zealous Secretary. Mr. CUTLER fell in the street a few days since, and has so severely injured his arm that it is feared several weeks must elapse before he can regain the use of it. We are asked to mention the fact, in explanation of any possible delay in conducting the correspondence of the Institution.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT SOCIETY.—The quarterly meeting of this Society was held at the Caledonian Hotel, Robert Street, Adelphi Terrace, Strand, on Monday even-

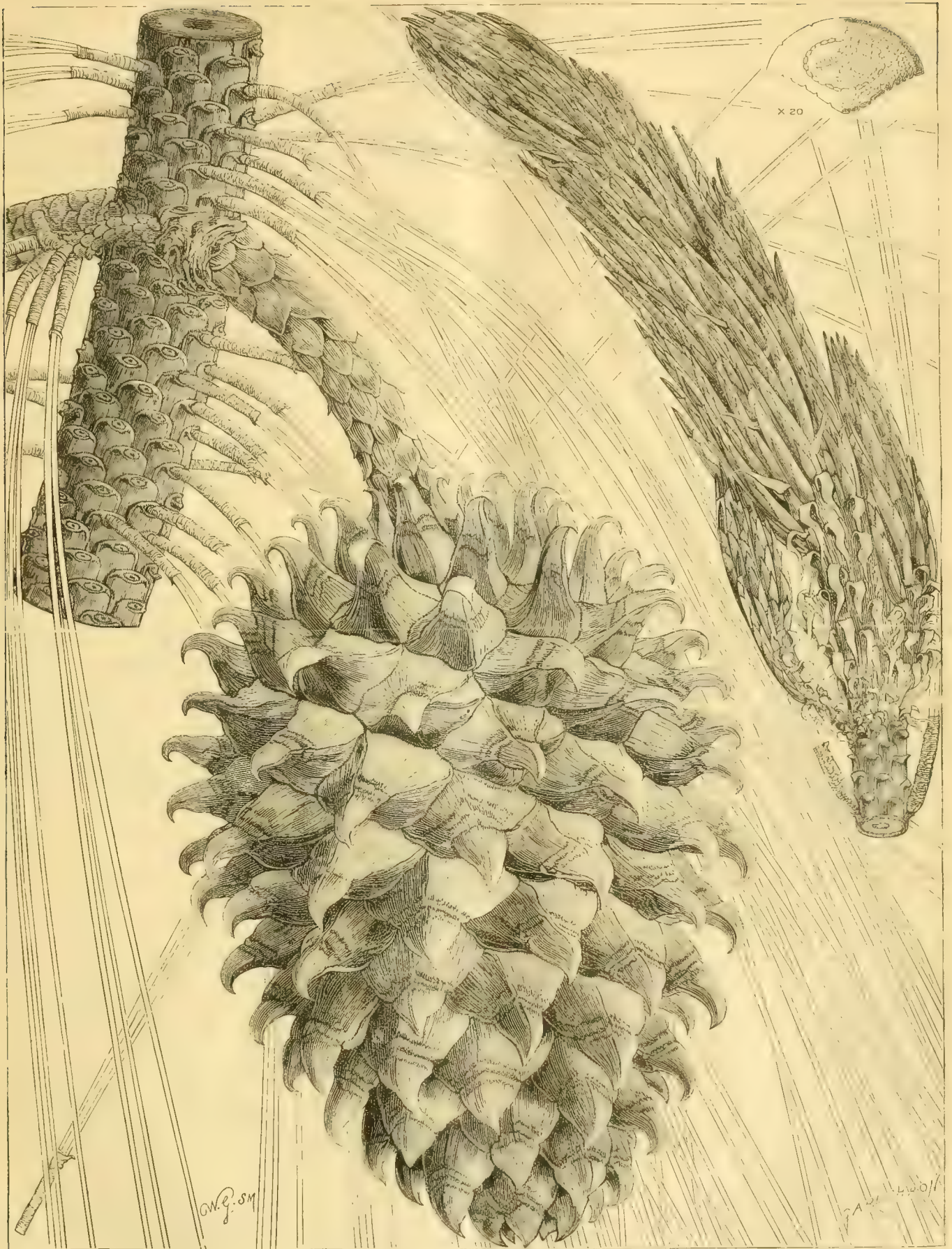


FIG. 4.—PINUS SABINIANA: LEAVES BLUEISH: CONE RICH BROWN. SECTION OF LEAF IN RIGHT-HAND CORNER. (SEE P. 44.)

ing, July 9, Mr. GEORGE WHEELER in the chair. Two new members were elected, making an addition this year of thirty-nine. The membership now stands at 291, including honorary members. The committee is very pleased to state that the Society is in a very healthy condition, no one being on the sick-list at the present time.

INTERNATIONAL HORTICULTURAL EXHIBITION, COLOGNE.—We have received from H.B.M. Consul at Düsseldorf additional particulars relating to this exhibition, which will remain open from August 4 to September 9:—

"I have the honour of drawing special attention to this exhibition, which promises to be the most successful one of its class ever held in the Rhenish province—the pearl of the German empire. A better opportunity for promoting the export trade to the Continent in the branches of industry concerned could hardly be afforded—within so easy reach of British ports—elsewhere than at Cologne, one of the most central points of traffic in the most industrial and thickly populated provinces of Germany.

"In the Rhenish Westphalian provinces great progress has been made of late years in the cultivation of gardens and parks on the English system, a taste which is daily being more and more developed with consequent increased requirements.

"In some branches of horticulture Holland and Belgium rank very high, but in most classes of industry connected therewith the English products and manufactures are superior; however, in these days of world-wide competition mere advertisement and issue of circulars no longer suffice; to ensure success the quality must be proved by exhibition wherever and whenever opportunity is afforded.

"The programme in German, (list of chief products and manufactures in English), including no less than 750 kinds of exhibits, is a very comprehensive and extended one, even to which exhibitors are not strictly limited; all classes of products and manufactures in any way, even indirectly connected with horticulture and model farming will with pleasure be received, and every facility will be given for cheap and expeditious transport, suitable mode of exhibition and representation, no charge being made for space. All applications for further information made to the Executive Committee, 'Gartenbau, Ausstellung,' Cologne, will be promptly attended to.

"The departments which would appear to offer the most chances of success to British exhibitors are of vegetables, seeds and their products, and manufactures therefrom, of all classes, but especially grass, Wheat, Oats, and Barley seeds, which are inferior in this country; small pumping engines, worked by steam, water, or gas-power; gearing and appliances connected therewith, for irrigating and syringing, as well as for the extinction of fire purposes.

"Grass-mowing machines, rollers, garden and model-farm water and other carts, implements, weighing machines and tools—in which the Americans are our greatest competitors—garden, park, conservatory, and dwelling-house illuminating lamps and appliances; hot-water, air, and steam heating apparatus; tents, summer-houses, and garden furniture; park phaetons and other vehicles, harness, saddles, and bridles; Bath-chairs, appliances for outdoor games connected with a country gentleman's residence, will also doubtless be admitted.

"Since writing the foregoing, I see, by a supplementary programme, that 21,700 marks (= £1085) have been subscribed for money prizes. T. R. MULVANY, H.B.M. Consul for Westphalia and the Rhenish Provinces, British Consulate, Düsseldorf-on-the-Rhine, June 9, 1888.

AMERICAN POMOLOGICAL SOCIETY.—The receipt of this Report year after year makes us feel how sadly behindhand we in this country are in the matter of commercial fruit-culture. It may seem strange to read it, but it seems the fact, that our American cousins understand the virtue of common action and reciprocal counsel better than we do.

They do not dissipate their energies over minor associations, but they weld all in one common federation, to the advantage of all. We observe that our friends across the Atlantic are devoting great attention to Russian Apples. The conditions here are, of course, quite different, nevertheless it may be of use to note that in this climate the Russian Apples have, as a rule, not proved worth growing. The Report contains papers and discussions on fruit and fruit-growing similar to those at our own Fruit Congresses, and a catalogue of the best fruits for each State in the Union. This catalogue is revised at short intervals.

DISEASED TOMATOS.—Tomatos, whether indoors or out-of-doors, are much troubled with disease of various kinds. This season the plagues seem especially virulent. A full description of the diseases caused by the attacks of the Potato fungus, *Peronospora infestans*, on the Tomato, by the black spot (*Phoma*) which forms on the top of the berries, by the *Dactylium* and the *Cladosporium*, have been given in our columns, with illustrations, by Mr. PLOWRIGHT and Mr. WORTHINGTON SMITH. We must refer our readers to our numbers for November 12, 1881; August 6, and October 1 and 29, 1887, for full details as to the nature of these several diseases. Unfortunately a knowledge of the remedial measures to be adopted has not kept pace with our knowledge of the diseases themselves. Experts have told us to what fungi the diseases are due, but they have not hitherto been able to suggest a remedy. This is in large measure due to the fact that the fungi in question are chiefly of internal growth, and no remedy applied externally can be expected to be efficacious. The consequences, however, are so serious, that it behoves practical men, now that they are made acquainted with the nature of the foe they have to contend with, not to be satisfied with mere "stamping out" by destroying affected plants, replanting in fresh soil, and the like—procedures often very imperfectly carried out—but to avail themselves also of known fungicides or fungus-destroyers, such as bisulphide of carbon, sulphur or sulphide of potassium. In particular we would recommend the use of sulphate of copper mixed with lime, in the manner and in the proportions mentioned in a recent article (see p. 15). It is possible that by such measures the disease may be controlled; at any rate, trial should be made. It is in such cases as these that the need of experimental gardens and laboratories becomes evident. Private growers have rarely the leisure or the competence to undertake the necessary experiments. The Ministry of Agriculture which it is proposed to establish might most appropriately signalise its inauguration by the establishment of institutions of this kind, the cost of which would ultimately be repaid a hundredfold by the benefits conferred. As it is, one set of men give freely their time, their labour, and their brains to the investigation of these diseases, and the practical men, so-called, instead of availing themselves of the information furnished them, do nothing but grumble and go on as before. It is time a new departure was made.

A PARTICOLOURED IRIS.—We have had occasion to figure *Calanthe* and other hybrid flowers in which the colour has been distributed unevenly, but we have not before witnessed a similar occurrence in any Iris. Mr. KRELAGE has now obligingly sent us a flower of the so-called English Iris, "Max Roosees." Under ordinary circumstances this flower is of a deep rich velvety-purple, with a central blotch of yellow and a spotted midrib to each of the sepals or "falls." In the flower in question one of the falls has a pale lilac ground, with a few deep violet blotches radiating from the broad midrib. Two of the petals or standards are of their normal purple colour, while the third is purple on one side of the centre, pale lilac striped with violet on the other. We do not know the parentage of this particular Iris, but it is reasonable to suppose that this peculiar distribution of colour may be the result of a tendency to separate the heretofore blended elements, and to revert to the condition of one or other parent. A second flower on the same spike, which opened in water, was quite normal. Mr. KRELAGE tells us he has observed similar variation in Iris Victor Verdier.

HARDY AZALEAS.—We have received from Mr. ANTHONY WATERER, Woking, cut specimens of these, and very fine they were too. The colours are bright and varied, and the bloom of good size. Specimens

of these plants, and also of *Rhododendrons*, from Mr. A. WATERER, formed a feature at the recent evening *fête* of the Royal Botanic Society, one tent being full of them.

POISONING BY MISCHANCE.—A fatal accident has occurred at Monmouth in consequence of a workman drinking, by mistake, a quantity of some fluid used to kill weeds, and which he obtained from a barrel. The barrel was properly labelled, but it seems from the report before us to open the question whether or no all barrels containing poisonous matters should not be of a particular shape, so as to avoid the mischance of mistaking a barrel of poison for one of beer or cider. No blame attached to the master.

PINUS SABINIANA.*

For the opportunity of figuring the cone of this noble species we are indebted to M. Naudin, of Antibes. The botanical history of the tree is pretty well known, so that we need not say much upon that point. It was introduced from California by Douglas in 1832. In cultivation in this country the tree forms a rounded or oblong head, with long, loosely set branches upturned at the ends, so that the light penetrates freely, while the very long, pendulous, grey leaves, waving with every gust of wind, give a peculiarly distinct look to the tree. The old bark is reddish-brown, or smoky, according to the locality in which the tree is growing; the younger bark is glaucous, or blueish-grey; the young shoots destitute of leaves except at the tips, but covered more or less with the marks of the bud-scales, which, when recent, are reflexed, membranous, lanceolate, fringed at the edges. The buds are cylindric, reddish-brown, and covered with resin; they begin to shoot early in spring, the terminal bud starting into growth before the lateral ones.

The leaves are very long, triangular in section, with the dorsal surface convex, the others concave. There is a very thick layer of hypoderm, or thick woody cells which contribute to the strength of the leaves, and which are only interrupted by the numerous breathing pores or stomata. Within this is the green substance of the leaf, traversed by two or more resin-canals, and in the centre is a double fibro-vascular bundle, surrounded by an elliptical endoderm or bundle sheath of a single row of elliptical cells, as shown magnified in our illustration (fig. 4). The male flowers are yellow, in oblong clusters, while the appearance and size of the noble rich brown cones is sufficiently shown in our illustration. The tree is quite hardy—not very particular as to soil—but should be planted in a sheltered situation. The seedlings produce a relatively large tap-root, which renders them rather difficult to transplant.

In this country *P. Sabiniana* can only be regarded as an ornamental tree, as the growth is slow and the wood soft.

Our notes have been taken principally from the trees at Kew and at Pampesford.

In the Sierra Nevada this Pine is known as the Nut Pine, owing to the agreeable flavour of the seeds, which are collected by the natives for food.

Mr. Muir, in an article in *Harper's Magazine*, on the coniferous forests of the Sierra Nevada, gives the following account of this tree, which for its interest is worth transcribing:—

"The first coniferous tree met by the traveller in ascending the range from the west is the Nut Pine, remarkable for its loose, airy, tropical appearance, suggesting a region of Palms rather than cool resinous Pine woods. No one would take it at first sight to be a Pine or Conifer of any kind, it is so loose in habit and widely branched, and its foliage is so thin and grey. Full-grown specimens are from 40 to 50 feet in height and from 2 to 3 feet in diameter. At a height of 15 or 20 feet from the ground, the trunk usually divides into three or four main branches, about equal in size, which, after bearing away from one another, shoot straight up, and form separate summits; while the crooked

* *Pinus Sabiniana*, Douglas. See especially Engelmann, in *Botany of California*, ii., p. 137.

subordinate branches aspire, or radiate, or droop in loose ornamental sprays. The slender, greyish-green needles are from 8 to 12 inches long, loosely tasselled, and incline to droop in handsome curves, contrasting with the stiff, dark-coloured trunk and branches in a very striking manner. No other tree of my acquaintance, so substantial in body, is, in its body so thin and so pervious to light. The sunbeams sift through even the leafiest trees, with scarce any interruption, and the weary, heated traveller finds but little protection in the shade. It grows only on the torrid foot-hills, seeming to delight in the most ardent sunheat, like a Palm, springing up here and there singly, or in scattered groups of five or six, among scrubby white Oaks and thickets of *Ceanothus* and *Manginita*: its extreme upper limit being about 4000 feet above the sea, its lower about from 500 to 800 feet. The generous crop of sweet nutritious nuts [seeds] which it yields makes it a great favourite with Indians and with bears. The cones are truly magnificent, measuring 5 to 8 inches in length, and not much less in thickness; rich chocolate-brown in colour, and protected by strong, down-curving hooks, which terminate in scales. Nevertheless, the little Douglas squirrel can open them.

"Indians gathering the ripe nuts make a striking picture. The men climb the trees like bears and beat off the cones with sticks, or recklessly cut off the more fruitful branches with hatchets, while the squaws gather them in heaps, and roast them until the scales open sufficiently to allow the hard-shelled seeds to be beaten out. Then, in the cool evenings, men, women, and children, with their capacity for dirt greatly increased by the soft resin with which they are all bedraggled, form circles around the camp fires on the bank of some stream, and lie in easy independence, cracking nuts, and laughing and chatting, as heedless of the future as bears and squirrels."

ENTOMOLOGY.

THE PEAR MIDGE.

THE extraordinary meteorological conditions of the last, and the commencement of the present, year induced the production of a splendid amount of bloom on our fruit trees, especially on the *Beurré Clairgeau* Pears, which were literally covered with sheets of blossoms. But notwithstanding the great cold which afterwards cut off the wall-fruit blooms before they had time to set the fruit, the insects which attack the Apples and Pears in the youngest state of the leaves and fruit were most abundant, especially the leaf-rolling caterpillars of the small moths of the family *Tortricidae* and the gall-midges and sawflies, the larvae of which live in the heart of the young fruit.

The history of a small species of midge, parasitic on Pears, was first investigated by Joseph Schmidberger, Canon of St. Floriac, in a report made to the Imperial Agricultural Society of Vienna, which was embodied by M. Kollar, the head of the Natural History Museum of Vienna, in his "Treatise on Insects Injurious to Gardeners, Foresters, and Farmers," (Vienna, May, 1837), translated by J. and M. London (with notes by the present writer, and published by W. Smith, London, 1840, in 12mo). Schmidberger considered his insects to be identical with the *Cecidomyia nigra* of Mergon, "because the description which Mergon gives of the black gall-midge completely agrees with them." More recent writers on the *Diptera* have doubted the correctness of this identification, and Dr. Riley has given the name of *Cecidomyia* (*Diplosis*) *pyrivora* to the Pear midge.

It was in the winter of 1831 that the insects first appeared in the perfect winged state, and by February 15 more than a hundred had appeared in the Canon's glasses, from pupæ placed there in the previous autumn. He says, "When the blossom-buds of the Pear tree were so far developed that in the single blossoms a petal showed itself between the segments of the calyx, I found the first midge in the act of laying the egg on the blossom, on April 12. It had fixed itself almost perpendicularly on the middle of a single blossom, and having pierced the petal through with its long ovipositor, it laid its

eggs on the anther of the still closed blossom. On cutting the pierced bud open the eggs were found lying in a heap one upon another on the anthers—from ten to twelve and even twenty in number. The midges ceased appearing in the garden and laying their eggs as late as April 18. On the fourth day after oviposition the small larvae were found on the embryo of the blossom, into which they began to bore, usually in or near the stem of the calyx; they then descend to the core, when they begin to devour the fruit on all sides. When they have attained their full size, and consumed the pulp of the young fruit, they make their way out, and as soon as they get to the surface of the now hollow little Pear, they bend themselves into a flattened ring, and, by suddenly straightening the body, they make a spring of several inches and fall to the ground to bury themselves. Generally, however, they remain within the Pear till it falls, which it is



FIG. 5.—THE PEAR-MIDGE.

ready to do by its continued want of growth, when they escape by cracks in the skin, and enter the earth, being fully grown by the middle of May; it is not, however, until the middle of December and January that they assume the winged state from the pupa, and it is only in the following spring that they creep out of the ground and propagate their species in the open air."

For many years past we have received communications from our correspondents concerning this Pear midge. In 1855, and again in 1883, it was very abundant, the larvae remaining in that state even until the end of June. With the view of clearing up the question of its history and nomenclature, as well as that of another Pear insect described by Nördlinger, in *Die Kleinen Feinde*, in 1869, under the name of *Cecidomyia pyricola*, the natural history of the true Pear midge has formed the subject of investigation by Professor Mik, of Vienna; Dr. Riley, the celebrated American State entomologist, (whose description with figures appears in the

American Report of the Entomologist, published at Washington in 1886); Miss Ormerod (*Report of Observations of Injurious Insects for 1884*). Mr. Inchbald, whose memoir appeared in the *Entomologist* for February, 1887, to whom the present writer is indebted for specimens of the perfect insect, and especially to Dr. R. H. Meade, who has just published a careful and elaborate article in the last-named periodical.

The insect belongs to the subgenus *Diplosis* of Loew (one of the sections of the extensive genus *Cecidomyia*); it measures from 2 to 3 millimetres in length, the female being rather larger than the male. It is of a dark ashy-black colour, with pale hairs, the thorax with three broad black lines, and rows of yellowish hairs. The antennæ of the males are twenty-six jointed, and those of the female are fourteen-jointed, including two very short basal joints closely soldered together. The abdomen is blackish, with narrow paler cross-bands. The wings are pale ashy, with long fringe of fine hairs; and the legs are brown, with paler-coloured hairs.

Our woodcut (fig. 5) represents—1, a young Pear cut open, showing the hollow made by the five enclosed larvæ; 2, the larva of the natural size; 3, the same magnified; 4, the same preparing to leap; 5, the male midge, the natural size indicated by the small crossed lines, the jointed process at the right side of the antennæ, representing one of the palpi; 6, five of the terminal joints of the male antenna; 7, apex of the wing, showing the thickened margin continued into the extremity of the main vein of the wing; 8, three of the middle joints of the female antenna; 9, the elongated telescope-like ovipositor of the female. *I. O. Westwood.*

SCOTLAND.

THE SEED AND NURSERY TRADE ASSOCIATION AND NON-WARRANTY.

ABOUT twenty-five of the members of the above Association met in the Waterloo Hotel on the 4th inst., as was arranged at the annual meeting held last month to further consider the attitude that should be adopted by the trade towards the non-warranty clause, and towards those who use it in transacting their business. Mr. Watt (of Messrs. Little & Ballantyne, Carlisle), presided, and in reply to Mr. Mather, Kelso, said that his firm had never used the non-warranty clause in their retail business but gave a special guarantee. They used a non-warranty clause in their wholesale business, but having no sympathy with the principle it was their intention to withdraw or regulate it according to the resolution of that or some future meeting. The large London firms seemed determined to stand by the clause, and he suggested that subscriptions should be raised throughout the trade to carry the case of Messrs. Smith & Son, Aberdeen, to the House of Lords, and endeavour to obtain a reversal of the decision of the First Division of the Court of Session. The retail merchants were placed in an awkward position in being obliged to buy without any warranty while they were held responsible to the farmers for the kind and quality of the seeds they sold. The fact that he presided at the former meeting of the trade and again that day showed that he did not approve of the clause as adopted by the London wholesale merchants. Having read a letter from Mr. Tait, of Manchester, President of the Seed and Nursery Trade Association, in which he offered a subscription of £10 towards the expense of an appeal in Messrs. Smith's case, the Chairman said his firm would contribute a similar amount.

Mr. James Elder, Haddington, inquired what position they would be in as a trade in the event of the case being lost in the House of Lords?

In reply, the Chairman said there was an impression abroad that the decision of the Court of Session was not in accordance with moral law, and that a different judgment might be given in the House of Lords. Most of those in the trade with whom he

had spoken thought it unreasonable that a seller should have the power to forward an article different from that ordered, and that the buyer should be compelled to accept it simply because the non-warranty clause was printed on the top of the invoice. As to the question of remedy, he was not in favour of a union: his idea was that the President of the Board of Trade should be approached with the view of getting a clause inserted in the Mercantile Law Amendment Act, making it illegal for seedsmen to contract themselves out of liability by a non-warranty clause.

Mr. Robson (Messrs. Smith & Son, Aberdeen), said his firm had not lost faith in their case, and that in the event of their being supported in carrying an appeal to the House of Lords they would give a substantial subscription towards it. He confessed to their having used the clause themselves, but they had come to recognise it as bad. He advised the formation of an association of all seed growers and merchants who disapproved of the clause, and who would refuse to deal with merchants adopting it. In putting themselves entirely in the hands of those who used the clause they were liable to get any one kind of seed for any other kind. They might not only get Rape for Turnip, but perhaps Cucumber for Carrot.

Mr. T. B. Park, Haddington, moved:—"That a strong recommendation be made to all the trade to buy from those merchants only who do not use the clause." He had, he said, faith in the honesty of the trade, and he believed that if a wholesale seedsmen came manfully forward and abolished the non-warranty clause he would get the support of the trade.

Mr. Ireland (Messrs. Ireland & Thomson, Edinburgh) seconded; while Mr. Davie, Haddington, said, that as he was bound to purchase under the non-warranty clause he could not sell under any other conditions. He sympathised, however, with Messrs. Smith & Son, and thought the trade should assist them in their appeal. To that end he would be glad to contribute, and meantime he moved:—"That it be remitted to a committee to consult the whole trade on the question of raising a fund to carry forward the appeal." Mr. Carter, Berwick, seconded.

Mr. Robson did not think a recommendation such as was proposed in the motion would be of any use. Unless there was to be a combination among the retail dealers no attention would be paid to the recommendation. He moved as an amendment—"That an association be at once formed of all seed growers and merchants who disapprove of the non-warranty clause now used by many wholesale and retail firms, and who should agree not to recognise the said clause in any of their business dealings." Mr. Taylor Dalkeith believed something stronger than was contained in the motion was required, and he, therefore, seconded the amendment. Mr. Mather supported the motion, believing that it would be impossible to carry out the combination proposed. Mr. Park concurred with the last speaker, and said his belief was that if the motion were adopted they would get such support from the trade as would influence the wholesale merchants to withdraw the obnoxious clause. Mr. Cross, Leith, suggested that those present should sign the circular embodying the recommendation to the trade, and Mr. Robson said if the meeting agreed to that he would withdraw his amendment. The Chairman said he could not consent to sign such a document. It would be, he considered, boycotting the members of the wholesale trade, and would place retail merchants in such a position as to appear incompetent to manage their own business. He was prepared to say that under ordinary circumstances he would not deal with any member of the wholesale trade who adopted the clause, and that he would not adopt that clause himself, but beyond that he could not go. On its being suggested that the terms of the motion should be altered so as to apply to the purchase of "root seeds" only the Chairman signified his willingness to sign the circular so amended. In that form the motion was unanimously agreed to. To the Secretary (Mr.

David Hunter, S.S.C.) was remitted the question of raising a fund to assist Messrs. Smith & Son to carry their appeal to the House of Lords, with instructions to duly report progress to his Association. The proceedings terminated with a vote of thanks to the Chairman.

THE SCOTTISH HORTICULTURAL ASSOCIATION.

The ordinary monthly meeting of this Association was held in 5, St. Andrew Square on the 3rd inst.; Mr. Robert Morison first, and Mr. Alex. Milne subsequently, occupied the Chair. A paper was read by Mr. Bell, gardener, Morton Hall, on the Tomato. The history and botanical relationship of the plant were sketched. A native of South America, it was introduced in 1596, and was long cultivated in this country merely for the ornamental character of its fruit. Only of late years had its merits as an esculent been recognised in Britain, but so rapidly had it increased in favour that it is now an almost universal article of diet, and an important commercial product. Comparing the two classes of Tomatos, viz., those with smooth and those with corrugated fruit, the writer said the latter were perhaps the heaviest croppers, and were consequently more largely grown by those who catered for market, but the former had a better appearance, brought better prices, and were most in favour for the purpose of competition. It was questionable whether the yellow-fruited sorts would ever obtain the same amount of favour as the red-fruited, though some contended that they were superior in quality and flavour to the latter. The cultural instructions were thoroughly practical and excellent. In the discussion that followed, the point as to whether the Tomato is a vegetable or a fruit was raised. It was pointed out by one member that it had been exhibited in collections of fruit at recent flower shows, and by others that it was frequently served up at dessert, but members were pretty equally divided as to the propriety of placing it in the category of dessert fruits.

Mr. Alexander Mackenzie, Warriston Nursery, read a paper by Mr. Hugh Gorrie, gardener, Mauldslee Castle, on "Select Stove Plants," which contained an excellent enumeration of foliage and flowering stove plants, with notes on their culture. Both writers were warmly thanked for their communications.

Amongst the exhibits a handsome Strawberry, sent in by Mr. John Fraser, station-master, Annan, Dumfriesshire, received a First-class Certificate. It is said to be a cross between Dr. Hogg and Black Prince. Its chief merits are earliness, having been ripened in Annan on June 18, even in such a late season as this; good size, being intermediate between both parents; excellent flavour and solid flesh, bespeaking good carrying qualities. It is named John Ruskin. Mr. Charles Buchanan, Pennycook House, exhibited a spray of Bougainvillea glabra, 3 feet long, the superb colour of which was much commented upon, along with the fact that it was grown and flowered in a Camellia-house.

Other exhibits were Cattleya Harrisiana (?), which looked like C. Mendelii, from Mr. Grant, St. Leonard's Hill, Dunfermline; seedling Pansies and decorative Pelargoniums, from Messrs. R. B. Laird & Sons; Saxifraga corymbosa, with a spike 3 feet long, from Mr. Henderson, of Clermiston; and branches of Colletia horrida and cruciata from the open air, by Mr. Hugh Fraser, Leith Walk Nurseries.

HOME CORRESPONDENCE.

CREEPERS ON A HOUSE.—The southern front of my house is covered with a dense mass of ivy, Ampelopsis Veitchii, Gloire de Dijon Rose, Clematis montana, C. azurea, C. Jackmanni, and the variegated Lonicera brachypoda, besides half-a-dozen creepers of less rampant growth. Every year by about midsummer the mass of branches and foliage becomes an unmanageable wilderness. The young shoots cling to the woodwork of the windows, get behind the spouts and lift the slates, and hang down in long matted bundles that have a most untidy appearance. I should be grateful for advice as to the best way of dealing with them. The most troublesome are Clematis azurea, whose long slender sprays cling to each other and refuse to be fastened up without an

amount of trouble and time which cannot be given to them; and C. montana, whose huge snake-like stems have become white and bare, and a large part of whose flowering sprays are obliged to be cut off in the late summer because nothing else can be done with them. If C. montana were cut down to within 6 feet of the ground and all its overgrown top pulled out and cleared away, would it shoot out afresh? But my chief despair is C. azurea. If I cut away the unruly growths I get no flowers next year. If I leave them alone they soon shut out the light from the windows. If I tie them up in masses they crush and break, and to separate and nail them up is impracticable. F. T. M.

MELON GROWING.—At Orwell Park Gardens, Mr. Wallis, Col. Tomline's gardener, adopts a capital plan of utilising all space over the path at the back of the Pine-stoves, which he covers with Melons during the summer, and gets a double lot to ripen, as directly one batch is over he at once puts fresh plants in, and thus keeps up a regular succession. These are grown in Seakale or bottomless pots, which are stood or plunged on or in the leaf-bed between the Pines, and the pots are filled with strong turfy loam, and when the fruit is set, liberal supplies of liquid manure are given, and plenty of tepid water when required, to help it to swell. The plants are run up with clean single stems, some 3 or 4 feet, and are then trained on temporary trellises made of laths of wood, and the fruit is supported by pieces of square board slung up, or Rafia-grass run round and tied. As the roots of the Melons can get through into the leaf-bed, the half bushel or so of soil the plants have suffices for them to carry three fruits on each, and these being so fully exposed to light and air, are always well finished and of good flavour. In pits and frames Melons follow the Strawberries and Potatoes with no other preparation than soil from the kitchen garden quarters being put in; and the thick leathery foliage the plants have, and the number of Melons fast swelling, show plainly what may be done without spending time and labour in making up hotbeds. J. S.

CHELSEA GEM PEA.—This variety, which was sent out by Messrs. James Veitch & Sons, is a valuable acquisition as an early Pea, and is one of the earliest, if not the earliest, of all. It was ready for gathering out-of-doors here ten days before any other early Pea. It is an amateur's Pea, and suitable for small gardens, as it is not only very productive and of good quality, but is only 12 inches in height, of branching habit and requires no sticks. The pods are well filled with large, well flavoured Peas, and it only wants to be known to be appreciated. W. Gallop, Bradford Peverell.

GREAT PROMISE OF STRAWBERRIES.—I hear many complaints of Strawberries being a non-success this year. I planted 1500 last autumn, and every plant is in good condition as regards foliage and fruit. I picked for the first time on June 24, King of the Earlys. It was fit to gather, and has been followed by Laxton's Noble; and the new Strawberry Waterloo, and several other leading varieties are setting their flowers well. The plants had a good mulching of manure after being planted, and the beds were well watered throughout the dry time afterwards. The fruits are thinned to six on a plant. G. Humphreys, Streatham.

WHITE PINKS.—These are among the most valuable of white flowers for cutting, as, besides their purity and adaptability for bouquet work, and the dressing of vases or glasses, their perfume is very agreeable, and for a long time they have been general favourites in gardens. A few years ago a new one, under the name of Mrs. Sinkins, made its appearance, and a fine thing it is, and when it was first introduced it bid fair to drive the old-fashioned one out of cultivation; but as this is at least a fortnight earlier in bloom it still holds its own, and is likely to do so for some time yet to come. The best examples of this last-named Pink I have ever seen are at Orwell Park, where Mr. Wallis has large beds of it, in such vigour and colour of foliage that one could hardly believe the plants to be those of the old double white without his assurance that they were that variety, as, besides the great strength and rich metallic hue of the "grass," they have stout sturdy stems a foot or so high, and big pink flowers to match. The soil these plants are growing in is a very stiff loam, which not only suits them but Carnations also, as large numbers of these are in the same gardens, and look equally healthy and vigorous.

As to Mrs. Sinkins Pink, it is invaluable to form a succession in the borders; for besides coming on just after the other and blooming in a mass with almost equal freedom, it produces a few flowers nearly the whole summer through. For pot culture none other equals it, but to have plants strong and fit for forcing they should be propagated early, and as soon as struck hardened off, and then planted out in the open. By the end of September they will have made good growth, and may then be lifted and potted in 32-sized pots, after which they should be plunged in cold frames, with their heads well up to the glass, and have air whenever the weather is favourable. *J. S.*

LETTUCES.—Every one who has to keep up a supply of Lettuces during the summer and autumn months knows how difficult it is to grow them without having them bolt if they are transplanted, and especially is this so if the weather at the time of their removal happens to be dry and unfavourable, but this tendency to run may easily be checked, and in most cases prevented, by sowing the seed where the plants are to stand, which is a far better plan than raising them in beds, for, however carefully they may be lifted the tap-roots must of necessity be broken, and this check causes the evil referred to. A good way of treating Lettuce at this season of the year is to make provision for them between rows of Celery, which should be done by spreading a thin layer of quite rotten manure on the surface of the ground, between the trenches, before they are dug out, and the soil that comes from them then laid on the top. As soon as the Celery is planted the next thing is to flatten and make level the land between, by raking, and as soon as this is done a shallow drill down the centre should be drawn and the seed dotted in thinly, in patches a foot apart, or sown in the ordinary way and then covered, but previous to the sowing, it is sometimes advisable to sprinkle or water the drill row, which, in dry, hot weather assists greatly in the germination of the seed. Another good situation for summer Lettuce is a north or other partially shaded border, where they can be kept cool, but others that come on later cannot well be too much exposed. What they do like is a deep rich piece of soil, and with the tap-roots intact, if they can get that they will take care of themselves. One of the best to grow at this season of the year is the old Paris White Cos, and for the autumn, winter, and spring none equal the Bath Brown and Hicks, both of which are crisp and of excellent flavour. These two will stand any ordinary amount of frost, if they have a favourable position—the best for those to remain through the winter and yield the first supply being under the foot of a south wall, or on a sloping border having the same aspect, where they may be planted a foot or so apart, in rows of a like distance asunder. *J. S.*

THE STORM IN SOUTH LINCOLNSHIRE.—A terrible thunderstorm passed over this neighbourhood on Thursday, the 5th inst.; the rain and hail poured down in torrents, and it is some years since we witnessed such a storm. The lightning was very vivid, and was followed almost immediately by heavy peals of thunder. A man who was drilling Turnips in a field was killed on the spot with the horse he was driving; a lad who was with the drill was injured, and several sheep in the field were killed. In the pleasure grounds of Bloxholm Hall several trees were struck, one a very fine *Pinus austriaca*, about 52 feet high, was struck, the lightning passing from top to bottom, taking off a strip of bark the whole length of the stem. One Oak, one Ash, and some Elms were struck in the same way. Sad havoc has been made by the hail in the flower garden, and in the kitchen garden Peas, Marrows, Spinach, Onions, French and Runner Beans, were very much injured by the hailstones, which were large, and fell to the depth of an inch. Rain and hail fell, as measured by the rain-gauge, to the depth of $1\frac{1}{2}$ inch in forty minutes, from 12 noon to twenty minutes to 1 o'clock. The storm was confined to two parishes—Bloxholm and Ashby. *David Lumsden.*

BROCCOLI, GILBERT'S VICTORIA.—I have been expecting to see some further remarks respecting this Broccoli from your correspondent Mr. H. Markham, who, writing in the *Gardeners' Chronicle*, June 9, p. 29, refers to this variety as looking very promising. If I may judge from the way in which it has behaved with me, I feel sure that it has fully borne out that promise, and that Mr. Markham is well pleased with it. I have grown every variety of Broccoli which has been sent out within these last ten years (as well

as older ones), but the variety in question is by far the best of them all. The flavour is remarkably mild. It is also very hardy, thoroughly protecting, and very late. I cut the last heads on June 21. It also has another excellent property, viz., the leaves do not spread out like other kinds, but grow close together and nearly upright, consequently it can be planted much closer together than other varieties. I might mention that our soil is very light and near the rock, this perhaps suits the above variety better than the others. *J. H.*

NARCISSUS POETICUS GOING BLIND.—I am of opinion that the blindness of flowers of *Narcissus poeticus* is brought about through cold and late frost, as we had many here this season so affected, and I know a grower who has plants on an exposed piece of heavy land where they seldom open a bloom, and he has others on warm light soil where they expand fully and freely, and give him a good supply for the market. What this *Narcissus* appears to require is a sheltered position, backed up by shrubs, in a border, and in place of this kind near here I saw a row this spring with hundreds of blooms, which shows what a little protection will do for the plants. The earthing up around the leaves, or burying deeper, may be the means of retarding growth and flowering, and thus save the bloom, but the same thing may, I think, be done by sticking a few pieces of Laurel or other evergreen closely around or among the beds and rows, just before the flower-heads emerge from the foliage. *J. S.*

SOCIETIES.

NATIONAL ROSE.

JULY 7.—The National Rose Society held this season's exhibition at its former home—the Crystal Palace. A large attendance of visitors made it very difficult to see the fine beauty of the display, which was of a uniformly high character—dark coloured Roses being best shown, the lighter sorts having apparently suffered from the recent heavy rains.

Nurserymen's Division.—In the leading class for seventy-two distinct, single trusses, Mr. F. Cant, Colchester, took the 1st prize and trophy with an excellent collection of large, bright, clean flowers, in a close competition. The most conspicuous blooms were *Pride of Waltham*, *Alphonse Soupert*, *Madame Bravy*, *Maréchal Niel*, *Annie Laxton*, *Ulrich Brunner*, *Madame de Watteville*, *T. Mills*, *Victor Hugo*, *La France*, *Crown Prince*, *Captain Christy*, *Her Majesty*, *General Jacqueminot*, *Merveille de Lyon*, *Baroness Rothschild*, and *Madame Gabrielle Luizet*. Messrs. Paul & Son, Cheshunt, were accorded 2nd, and followed very closely with *General Jacqueminot*, *Madame C. Wood*, *Her Majesty*, *Mrs. J. Laing*, *Ulrich Brunner*, *Paul Néron*, *François Michelin*, *Duke of Teck*, *La France*, *Xavier Olibo*, and *Niphetos*, as the finest; Mr. B. R. Cant, Colchester, came 3rd; and M. J. Cranston & Co., Hereford, were 4th, each having first-class blooms. The Silver Medal for the best H.P. in the show (nurserymen's division) was awarded to the last-named firm for a specimen of *Etienne Levet* shown in this class.

In the competition for forty-eight triplets, Mr. B. R. Cant led with a varied collection, finely grown, in which were *General Jacqueminot*, *Baroness Rothschild*, *Sultan of Zanzibar*, *Catherine Mermet*, *Prince Camille de Rohan*, *Marie Van Houtte*, *Ulrich Brunner*, *A. K. Williams*, *Souvenir d'un Ami*, *Thomas Mills*, *Marie Baumann*, *Madame Ducher*, and *Marie Verdier*. Messrs. Paul & Son, Cheshunt, were again 2nd, with slightly smaller blooms, *General Jacqueminot*, *François Levet*, *A. K. Williams*, *Duke of Edinburgh*, *Merveille de Lyon*, *Camille Bernardin*, and *Mrs. J. Laing* being well represented. And of almost the same varieties was the lot from Mr. F. Cant, which took the 3rd prize. Mr. C. Turner, with capital *Merveille de Lyon* and *Viscountess Folkestone*, taking 4th.

In the forty-eight singles, Mr. W. Rumsey, Waltham Cross, N., showed one of the finest stands in the show, carrying off 1st honours against Messrs. J. Jeffries & Son, of Cirencester. In the 1st prize lot a number of specially good blooms—*Etienne Levet*, *Heinrich Schultheis*, *Madame Verdier*, *A. K. Williams*, *Alfred Colomb*, *Lord F. Cavendish*, *General Jacqueminot*, *Le Havre*, and *Ulrich Brunner*, being worthy of particular note. Messrs. Jeffries' blooms were not quite so bright, *Louis Van Houtte*, *Duke*

of Albany, *Merveille de Lyon*, *Etoile de Lyon*, being good. The 3rd prize went to Messrs. G. Cooling & Sons, Bath, for a neat and clean stand, comprising *Merveille de Lyon*, *Madame Lambard*, *Annie Olivier*, *Madame Clemence Joigneaux*, *Madame Charles Wood*, and *Marie Finger*.

Messrs. G. & W. H. Birch, Peterborough, showed the best thirty-four distinct, of fair quality and size, *Heinrich Schultheis*, *Niphetos*, *Ulrich Brunner*, and *Countess of Oxford*, being their best. Mr. Mount, Canterbury, came a close 2nd with *Maréchal Niel*, *Ulrich Brunner*, *Catherine Mermet*, and *Marie Rady*; the 3rd place being accorded to Mr. J. House, Peterborough, showing popular varieties.

For twenty-four varieties, in triplets, the place of honour was assigned to Mr. G. Prince, Oxford, whose blooms were very satisfactory in all respects, *Comtesse de Nadaillac*, *Madame G. Luizet*, *Anna Olivier*, *Marie Van Houtte*, *Duke of Edinburgh*, and *Merveille de Lyon* being represented by finely formed examples. Messrs. Jeffries and Messrs. Cooling were respectively 3rd and 4th, each showing well; in the former stand *François Michelin*, *Rubens* and *Madame Lambard* were best, and in the latter *Magna Charta* and *Madame G. Luizet*.

In the Tea and Noisette division the nurserymen were showing well, and competition again ran close. For twenty-four distinct singles Mr. Prince showed a very high-class lot of blooms, finely coloured and bright, and was awarded 1st, *Jules Finger*, *Comtesse de Nadaillac*, *Souvenir de S. A. Prince*, a white sport from *Souvenir d'un Ami*, and *Madame Lambard* being the most conspicuous; Mr. B. R. Cant, 2nd, with *Mrs. Welch*, *The Bride*, and *Anna Olivier* in fine form; 3rd, Mr. F. Cant (all Teas), *Madame Cusin* being well represented.

Mr. J. Mattock, Oxford, was 1st in the minor class for eighteen distinct, showing splendid blooms of *Madame Lambard*, *Edith Gifford*, and *Jean Ducher*, to which last the Silver Medal for the best Tea or Noisette (nurserymen's section) was awarded.

Mr. Prince showed the best twelve of any Tea or Noisette with *Hon. Edith Gifford* in fine condition; 2nd, Mr. C. Turner, with richly coloured *Catherine Mermet*. The competition here was large.

Mr. Prince had the best eighteen Teas or Noisettes, staging a grand lot, in which *Comtesse de Nadaillac*, *Anna Olivier*, *Alba rosea*, *Madame Cusin*, *Madame Lambard*, and *Jules Finger* were prominent flowers. Mr. F. Cant was 2nd, showing *Rubens*, *Madame Cusin*, *Madame Lambard*, and *Souvenir d'un Ami*.

Amateurs.—The amateurs made a first-class display in all classes, especially in the larger ones. The leading prize-winner here was Mr. R. N. G. Baker, Heavitree, Devon, who led with the best forty-eight singles, and again for twenty-four triplets, having blooms of great brightness and very clean in both instances. The following were the best:—*Prince Camille de Rohan* (very fine colour), *La France*, *Ulrich Brunner*, *Duke of Edinburgh*, *Alfred Colomb*, *François Michelin*, *Auguste Rigotard*, *Dupuy Jamain*, *Etienne Levet*, *Duke of Teck*, *Marie Baumann*, *Marquise de Castellane*, the old *Centifolia rosea*, *Merveille de Lyon*, *Madame G. Luizet*, and *General Jacqueminot*. Mr. Grant, Ledbury, Hereford, was 2nd in the forty-eight's, running very closely, and showing the usual popular varieties—*A. K. Williams*, *Dupuy Jamain*, and *Eugene Verdier* being fine. The 3rd place fell to Mr. R. Slaughter, Steyning, whose *Duke of Edinburgh* and *François Michelin* were excellent blooms; Mr. T. B. Hall, Rock Ferry, 4th. Mr. Grant was again 2nd in the class for triplets, but here his blooms were certainly smaller than Mr. Baker's, but were none the less of high quality—*Madame Eugene Verdier*, *General Jacqueminot*, *Marie Verdier*, and *Ulrich Brunner* being the best. 3rd, Mr. S. P. Budd, Bath, with *Merveille de Lyon*, *Comtesse d'Oxford*, and *François Michelin*, in fine form.

Mr. J. Ridout, gr. to T. B. Haywood, Esq., Reigate, was also a very successful exhibitor, leading for thirty-six distinct singles, and for eighteen distinct triplets; the blooms were not over-sized, uniform throughout, and in colour and form were first-rate. Mr. E. B. Lindsell, Hitchin, and Mr. J. Brown, gr. to Mrs. Waterlow, Great Doods, Reigate, were respectively 2nd and 3rd in both classes, but the best flowers were in the single class. Mr. Ridout's finest were *Ch. Lefebvre*, *Mrs. J. Laing*, *Marie Baumann*, *Etienne Levet*, *Captain Christy*, *General Jacqueminot*, *Marie Finger*, and *François Michelin*; of Mr. Lindsell's, *Ulrich Brunner*, *A. K. Williams*, *Alfred Colomb*, and *Comtesse d'Oxford*.

Mr. R. E. West, Reigate, led for twenty-four singles, and also for twelve triplets, having a pretty, clean lot, in which *Etienne Levet*, *Innocente Pirola*,

François Michelin, Gabriel Luizet, and Duke of Edinburgh were the finest. The Rev. H. A. Berners, Ipswich, was 2nd for singles, with Ulrich Brunner, Gloire Lyonnaise, and Baroness Rothschild—very close.

For triplets the 2nd prize fell to Rev. A. Foster-Melliar, Ipswich, also close—Mrs. Baker, Etienne Levet, and Duchesse de Morny being the best examples.

Mr. H. Foster, Ashford, Kent, sent the best six in threes with Ulrich Brunner, Dupuy Jamain, and Duke of Edinburgh as his best blooms; and with a very bright lot took 1st for eighteen singles with Dupuy Jamain, A. K. Williams, Pride of Ashford, and Duke of Wellington; 2nd to Miss. F. Baker, Reigate, showing well Duke of Edinburgh, Madame G. Luizet, and Ch. Lefebvre.

For the best twelve distinct singles, Rev. A. Cheales, Brockham Vicarage, Surrey, led with a very fine lot, taking the Silver Medal for the best (amateurs) H.P. with Camille Bernardin, shown in this lot with Dupuy Jamain, Duke of Edinburgh, and Beauty of Waltham.

In Teas and Noisettes the Rev. F. R. Burnside, Gloucester, led for eighteen with a handsome lot, neat and even, and finely coloured—Madame Lambard, Souvenir d'un Ami, Jules Finger, Marie Van Houtte, Madame Bravy, and Maréchal Niel were fine blooms. Rev. F. P. Roberts, Scole, 2nd, with a close lot—Madame Cusin, Catherine Mermet, and Madame de Watteville, being well shown.

Mr. R. L. Knight, Sittingbourne, had the best twelve, Mr. O. G. Orpen, Colchester, being 2nd—both having good stands; and to a bloom of Madame Cusin from Mr. Knight the Silver Medal for the best Tea or Noisette (amateurs) was awarded; Marquise de Sanina, Souvenir de Paul Néron, and Comtesse Riza du Parc, were also well shown.

The best nine singles came from the Rev. L. Garnett, Chester, a good even lot—Jules Finger and Madame Cusin being fine. The Rev. F. R. Burnside had the best twelve in triplets, neat and average size; Madame Cusin, Souvenir de G. Druet, Madame Lambard, Jules Finger, and Rubens, were fine. 2nd, the Rev. H. A. Berners, with good Madame de Watteville and Comtesse de Nadaillac. The Rev. A. Foster-Melliar had the best six of any sort, showing large and well coloured specimens of Marie Van Houtte.

Open Classes.—For the best twelve single trusses of any yellow variety except Maréchal Niel there were four competitors. 1st, Mr. G. Prince, Oxford, with superb blooms of Comtesse de Nadaillac, all, with one exception, being in that partially open state in which this Rose looks best; 2nd, Mr. F. Cant, Colchester, with Marie van Houtte—fine half-expanded blooms.

Twelve single trusses of any white Rose except Niphotos.—Here eight competed, and the 1st fell to Mr. S. P. Budd, 8, Pay Street, Bath, who had very fine full fresh blooms of Merveille de Lyon; 2nd, Messrs. Paul & Son, Old Nurseries, Cheshunt, with The Bride, a white Rose, with a greenish tinge and not large blooms; 3rd, Mr. B. R. Cant, Colchester, with Merveille de Lyon, good specimens, but slightly injured by rain. In the unsuccessful stands blooms of Captain Christy and Merveille de Lyon came out well from all others.

Twelve single trusses of any crimson Rose, except Marie Baumann or A. K. Williams.—In this class the competition was severer than in any other—eleven competitors entering, and the Colchester Roses of Mr. B. R. Cant won the 1st place, his Duke of Edinburgh being of perfect form, fine substance, and had been cut at the right moment. Mr. F. Cant was 2nd, with the same variety; and Mr. C. Turner, Slough, was 3rd, with perfect but rather small flowers of Camille Bernardin. Ulrich Brunner, Etienne Levet, were very good in other stands.

Twelve single trusses of any dark velvety Rose.—In this class five competitors entered, and here Mr. C. Turner came in 1st with Prince Arthur, fine in colour, and thick in petal, and of large size; Mr. B. R. Cant was placed 2nd with Prince Camille de Rohan, a good stand, and even; Messrs. Paul & Son, Old Nurseries, Cheshunt, were 3rd, showing also Prince Camille de Rohan, pretty blooms, but unequal in size. Eclair was shown by others, but its petals are too much folded in, and the flowers too small for an exhibition Rose; Louis Van Houtte, as seen in one stand, was rough—perhaps the effect of bad weather.

The class for twelve trusses of Maréchal Niel brought only one competitor—Mr. B. R. Cant—who was awarded the 3rd prize.

Twelve single trusses of Marie Baumann.—In this class four competed, and the 1st prize fell to Mr. C. Turner, for a stand of blooms perfect in all points;

Mr. G. Mount, Rose Nurseries, St. Dunstons, Canterbury, was 2nd, his flowers being fresh, and good in shape, but irregular as to size.

Twelve single trusses of Lady Mary Fitzwilliam.—Mr. G. Prince, always strong in Teas and Hybrid Teas, came in 1st with massive blooms, grown to their fullest size; 2nd, Messrs. Harkness & Son, Bedale, with fine blooms, but which had suffered from the rain.

In the class for twelve single trusses of A. K. Williams—1st, Mr. B. R. Cant, with fine quality, but under-sized blooms; 2nd, Mr. F. Cant, whose blooms dwindled from medium-sized to quite small ones: eight competed.

For twelve single trusses of Her Majesty, the 1st prize was taken by Messrs. Paul & Son, Cheshunt. As shown the flower was not coarse, was very symmetrical, and in the half-opened bud state most pleasing. No other competitors.

For twelve single trusses of Niphotos, Mr. B. R. Cant took the 1st and only prize awarded.

Twelve single trusses of any new Rose, except Her Majesty.—1st, Messrs. Paul & Son, Cheshunt, with Mrs. John Laing, a flower of a deep rose colour, bold, and of fine substance and form—the colour is not a common one in modern varieties; 2nd, Mr. B. R. Cant, with The Bride the half-open buds of which are pretty.

New Roses, distinct, twelve single trusses.—In this class only two growers competed—Messrs. Paul & Son, Cheshunt, who took 1st prize with Her Majesty, Madame Hy. Perriere, Mrs. J. Laing, Madame Norman Neruda, Lady Alice, Madame Baulot—a flower the colour of Comte de Paris, Victor Hugo, The Bride, Grand Mogul, and Madame Massicault, a Rose with the colour of Her Majesty, and pretty as a half-opened flower. Mr. B. R. Cant 2nd, with some handsome varieties of which may be specified Lady Helen Stewart, Earl Dufferin, Gloire de Margottin, bright crimson, a pleasing flower; Madame Joseph Desbois, delicate flesh colour, approaching white, and a compact flower; Mr. F. Bennett, purplish-crimson, which, when half opened, is pretty, but the petals are too few to make a good exhibition flower. The 3rd prize was withheld.

In the class for three single trusses of any new seedling Rose, or distinct sport, not yet in commerce, no award was made, although Mr. G. Prince showed Souvenir de S. A. Prince, a semi-transparent petalled, white Tea.

Collection of garden Roses, excluding all H.P.'s, T's, and N's mentioned in the N.R.S.'s catalogue of exhibition Roses.—In this class nurserymen only have a chance of receiving 1st honours, and so it happened that the 1st and 2nd fell to Messrs. Paul & Son, Cheshunt, and Messrs. G. Bunyard & Co., Maidstone; and the 3rd to the Rev. J. H. Pemberton, Havering-atte-Bower, Romford, who showed a fine collection, but unnamed.

For twelve bunches of Moss and Provins Roses Messrs. G. Bunyard & Co. were 1st—a very good collection in full flower; 2nd, Mr. J. House, Peterborough.

Four lots of button-hole Roses were shown, Mr. J. Mattock, Headington, Oxford, taking the 1st prize; Messrs. Paul & Son, Cheshunt, the 2nd.

Flowers, Fruits, and Vegetables.—Messrs. J. Veitch & Sons, Chelsea, exhibited eight boxes of superior blooms of H.P.'s; Messrs. J. Cheal & Son, Crawley, Sussex, exhibited boxes of cut Roses and of hardy flowers; Mr. C. Turner, Carnations and Picotees in pots; Messrs. Dobbie & Co., Rothesay, N.B., showed many stands of various breeds of Pansies—show, fancy, spotted; also varieties of Violas. The show of these flowers appeared to afford much pleasure to those who do not know how much Pansies and Violas have been improved by Northern growers, and how much better they are able to grow them than we in the South.

Mr. Stacey, Danmow, exhibited a choice lot of Verbena blooms, and Mr. Taylor, Hampton, Roses.

Mr. J. House, Peterborough, had one, two, and three-year plants, grown in the open ground, of his Strawberry Victory, and stated by him to be raised by crossing President and British Queen. The plants were very robust in growth, and carried, some of them, about a hundred fruits. The fruit-stalk is stout, like President, and carries its fruit well off the soil; colour of fruit like British Queen when well ripened, the flavour also is distinctly that of that variety, and the shape is either cockscomb or wedge. The plant is said to bear well on one-year-old runners. The variety must be regarded as an acquisition of no mean merit, and in a good season the flavour would be still more decided than is the case now.

Messrs. Sutton & Sons, Reading, offered prizes for Peas and Melons. Mr. Palmer, gr. to W. H. Hume-Dick, Esq., Thames Ditton, took 1st for Melons with a good Hero of Lockinge; and Mr. C. J. Waite, Glenhurst Gardens, Esher, 2nd, with Imperial Green-flesh; and 1st for Peas with a good dish of well developed pods.

Messrs. Carter & Co. also offered prizes for Melons. Mr. G. Collins, gr. to J. A. Rose, Wandsworth Common, and Mr. Waite were respectively 1st and 2nd, both sending fine fruits.

From Messrs. Cannell & Sons, Swanley, Kent, was a large group of tuberous Begonias; and from Messrs. T. Rivers & Sons, Sawbridgeworth, was sent a fine collection of dishes of fruit and fruit trees in pots, Cherries, Peaches, and Nectarines being largely shown, and also Citrus vulgaris (the Myrtle-leaved Orange) in fruit, the trees being about 3 feet high, and bearing numerous fruits.

ROYAL HORTICULTURAL.

TUESDAY, JULY 10.—A small collection of exhibits were observed on the above occasion at the Drill Hall, Westminster, the best of them perhaps being the plants and flowers from Kew; flowering shrubs, and Peas from Messrs. J. Veitch & Son's nursery, and a new Campanulaceous plant, *Ostrowskya magnifica*, noticed in our last issue. Some tuberous Begonias were shown in competition in response to an offer of prizes by Messrs. J. Laing & Sons, Forest Hill; and hardy flowers were shown by Mr. T. S. Ware, Messrs. Kelway & Sons, and others.

Floral Committee.

Present: G. F. Wilson, Esq., in the chair; and Messrs. S. Hibberd, W. Holmes, R. Dean, H. Herbst, J. Walker, J. Laing, Rev. W. Wilks, T. Baines, C. Noble, B. Wynne, J. Dominy, H. M. Pollett, J. O'Brien, A. F. Lendy, W. Goldring, E. Hill, and J. Nicholson.

From Messrs. J. Veitch & Sons were the very dwarf rock plant, *Pratia angulata*, covered with its small white blossoms; *Gymnogramma Pearcei* robusta, a variety with finely-cut fronds of a triangular shape, which are from 12 to 18 inches long, the colour a tender shade of green, but without farina; *Clethra alnifolia*, many plants well-flowered; the dwarf floriferous *Philadelphus microphyllus*, with white flowers, three-quarters of an inch in diameter; *Ostrowskya magnifica*, hardy perennial of 5–6 feet in height, the stems being crowned with campanulate flowers of pale lilac colour, veined with a darker shade of colour, and 4 inches across the mouth; it was received from M. Max Leichtlin, Baden, and is now flowering for the first time in this country. A novelty in flowering shrubs was *Ceanothus Marie Simon*, the flowers numerous, in corymbs, of a reddish-pink; also *Hydrangea* species, from Japan, with corulean blue flowers. Other exhibits were *Escallonia philippiana*, *Andromeda speciosa* var. *pulverulenta*, *Carpenteria californica*, *Clematis coccinea*, *Spiræa palmata* purpurea, and some flowers of new warm-house *Rhododendrons*, of which *Souvenir de J. H. Mangles*, an orange-red, and large truss, was considered by the committee to be the best. Several bunches of showy varieties of *Gladiolus racemosus* came from the Veitchian nurseries.

G. Thorpe, Esq., Manningham Thorpe, Bedford, showed *Grammatophyllum Ellisii*, a charming Orchid with two massive spikes of white and rich brown coloured flowers, to which a Cultural Commendation was awarded.

Mr. Eckford, gr. to Dr. Sankey, Boreatton Park, Shrewsbury, exhibited, as usual, many varieties of Sweet Peas, some which were new shades of colour, and all were Highly Commended. The handsome North American shrub, *Carpenteria californica*, was shown in flower by Miss Jekyll, Munstead, Surrey. Sweet Williams and Sweet Peas, Dutch Honeysuckle and garden Roses came from Mr. J. Walker, Thame.

Flowering stems of *Lilium Hansonii*, L. Szovitzianum, and cut blooms of *Erigeron multiradiatum*, a Himalayan species, with blue-purple ray florets and orange disc, came from the garden of G. F. Wilson, Esq., at Wisley. The Lily stems were from 6 to 7 feet in height.

Messrs. Kelway & Sons' exhibit contained many cut blooms of *Gaillardia*, *Amaryllis*, and *Delphinium*; of the latter, *Ustane*, a light blue, and *Prince of Naples*, a handsome metallic-purple coloured variety, were considered to be the best.

Mr. T. Ware, Hale Farm, Tottenham, contributed his usual large show of cut flowers of hardy plants, and *Allium pedemontanum*, a plant with umbels of

tubular flowers, short, and of a rosy-purple colour, the flower-stalk 18 inches in height. The plant is destitute of odour.

The valuable exhibit from the Royal Gardens, Kew, was composed of such a number of rare plants, that we herewith append a complete list:—

Plants.—*Begonia Haageana*, n. sp.; *Schubertia grandiflora*, *Isoloma hirsuta*, *Eugenia myriophylla*, *Pritchardia Thurstoni*, *Medinilla erythrophylla*, *Hæmanthus Katherineæ*, *Olearia insignis*, n. sp.; *Ornithochilus fuscus*, *Astelia montana*, *Albucca Nelsoni*, *Chironia linearis*, *Salvia scapiformis*, *Sarracenia Courtii*, *Sempervivum holochrysum*, *Statice Bourgei*, and *Schoenia Cassiniana*.

Ferns.—*Chilanthus radiata*, *Davallia pulchra* var., *Diacalpe aspidioides*, *Aspidium* sp., *Asplenium formosum*, *Davallia feniculaceum*.

Flowers.—*Tweedia corulea*, *Streptocarpus Rexii* vars., *S. Dunnii*, *S. Watsoni* ×, *S. Kewensis*, *Gasteria Oronchera*, *Passiflora corulea* × *racemosa*, *P. c. × Kermesiana*, *Nymphæa stellata purpurea*, *N. zanzibarensis*, *Hedychium longifolium*, *Milletia megasperma*, *Aristolochia braziliensis*, *Lissochilus Krebsii*, *Watsonia plantaginea*, *Aristolochia elegans*, *Gongora quinquevulnera*, *Nymphæa kewensis*, *N. Lotus*, *N. Ortgiesiana*, *Anemopygma racemosa*, *Begonia Chamberlayni*.

Herbaceous Plants.—*Campanula Rainieri*, *Erpetion reniforme*, *Erythraea diffusa*, *Linaria triornithophora*, *Pentstemon rotundifolius*, *Phyteuma limonifolium*, *Primula mollis*, *P. erosa*, *P. imperialis*, *Wahlenbergia saxicola*, and *Pratia littoralis*.

Flowers of Herbaceous Plants.—*Alstroemeria aurantiaca*, *A. aurea*, *Campanula Hendersoni*, *Allium coruleum*, *Dianthus Greivei*, *Galax aphylla*, *Mimulus cardinalis* var., *Podophyllum Emodi*, *Statice leptostachya*, *Senecio macrophylla*, *S. japonica*, and *Veronica Traversii*.

Flowers of Shrubs.—*Carpenteria californica*, *Periloba græca*, *Rosa indica monstrosa* (Rose Verte), and *Vaccinium madeirense*.

Senecio japonica makes a pretty object with its flower-heads 2 inches across, and all bright yellow; but is beaten for effect by the flower-spike of *Senecio macrophylla* densely packed with small yellow flowers. *Primula mollis* has pretty rosy-lilac flowers, and would be very attractive if the flowers were only produced in greater profusion. The numerous produced flowers of *Linaria triornithophora*, deep lilac with yellow crests, render it a favourite, and the green Rose is noticeable more on account of its strangeness than its beauty. *Viola* (*Erpetion*) *reniforme*, a pretty little plant attaining about 4 inches in height with flowers of violet tipped with white, was shown in a pan and looked well. *Isoloma hirsuta* is a striking plant, flowers bright scarlet, leaves deep dull green, marked sparingly with red-brown, and densely covered with hairs. The various *Streptocarpi* made a pretty display in a cut state, but the plants are not graceful in growth. One of the most conspicuous of the plants in this exhibit was a fine specimen of *Begonia Haageana*, a new Brazilian species in the way of *B. echinosepala*, but much larger. The flowers are produced in large clusters, each flower measuring about 1 inch in diameter, pale pink in colour. *Olearia insignis* is a pretty shrub, and is almost, if not quite, hardy in this country; it was shown in flower. *Medinilla erythrophylla* was represented by a flowering plant; this is a remarkable species, producing its small flowers on the stem from the base upwards almost to the top. Of the Ferns *Chilanthus radiata* is a strange one, greatly resembling in appearance *Adiantum hispidulum*; it is a new species. Mention should also be made of *Pritchardia Thurstoni*, a new Palm, the plant shown being about 3 feet high.

From Messrs. Paul & Son, Cheshunt, was sent a group consisting chiefly of ornamental foliaged hardy trees, which were very numerous, and among which was *Prunus domestica variegata*, with bright yellow variations towards the margin of the leaf, to which a certificate was awarded. Others were a silver-leaved Elder, white, with green spots; golden forms of *Ulmus plumosus*, and of *Philadelphus*, *Ligustrum*, *Corylus*, *Laburnum*, and of *Spirææ*. Of purple-leaved trees the best examples were *Prunus pissardi*, which is also a good flowerer; the purple Peach, and the purple Elm. The bright red fruits of *Acer tartaricum* render it a striking object. A variegated form of the Turkey Oak, the variegations being almost white, is very pretty. Plants of *Veronica Traversi præcox*, flowering at about 1½ foot in height, were also shown; *Acer Negundo aureo variegata*, and a cut-leaved *Sambucus racemosa*. The same firm also sent a collection of garden Roses, containing

such varieties as *W. A. Richardson*, white Provence, *Rosa rugosa*, *Mercedes*, *Simplex*, *Bennett's Seedling*, &c.; and they also sent a few alpine and rock plants, showing several *Campanulas* and *Belliums*, and also *Hydrangea japonica rosea*, very pretty.

Mr. B. Noakes, Brockley, and Messrs. Hooper & Co., Covent Garden, sent Carnations, all pale yellow; to Germania, from the latter, a Certificate was given, it is sulphur-yellow, good form, and slightly scented, and will probably be very useful for cutting purposes: it is likely to be more popular than *Pride of Penhurst*, which it closely resembles, but is a shade or two lighter in colour.

Prettily spotted *Gloxinias*, and a rich red and brown *Coleus* were sent by Messrs. H. Cannell & Sons, Swanley, Kent.

A bright show was made by the boxes of cut blooms of *Begonias* staged by Messrs. J. Laing & Sons, Forest Hill, S.E., the flowers being large and of varied colouring, both double and single varieties being represented, one bloom of a double yellow measuring quite 3 inches in diameter.

Orchids were not numerously shown. Mr. Ridout, gr. to T. B. Haywood, Esq., Reigate, showing two boxes of cut spikes of *Odontoglossums*, the large majority of which were forms of *O. crispum*; it made a gay exhibit. He also sent *Odontoglossum Harryanum*, *Cypripedium bellatulum*, and a good white form of *Miltonia vexillaria*.

A flowering plant of *Cœlogyne Sanderiana* was shown by Mr. Jaques, gr. to Baron F. de Rothschild, Waddesdon Manor, Aylesbury; the flowers are fairly large, dull white, with a yellow crest, the throat being lined with brown.

G. F. Tautz, Esq. (gr., Mr. Crowley), Studley House, Shepherd's Bush, sent *Dendrobium hircoglossum*, pale rose-lilac, well-flowered; *Cattleya Gaskelliana superba*, finely coloured, with a broad expanded lip, very deep in colour, and regular narrow margin of the ground colour; also *C. G. alba*, pure white, with a yellow throat; and *Cypripedium Wallisii*, which has long tails, like caudatum, with a marble-like white intuned edge to the lip.

Lælia majalis, *L. Crawshayana* and *L. autumnalis*, were sent by Messrs. F. Sander & Co., St. Albans, the first named only being in flower.

A few exhibits of cut Roses were attractive, T. B. Haywood (gr., Mr. Ridout) sending a lot of clean and bright blooms of Duke of Wellington, Captain Christy, Xavier Olibo, A. K. Williams, Marquise de Castellane, Etienne Levet, and Mlle. M. Verdier were good blooms. Messrs. Keynes, Williams & Co., Salisbury, sent six boxes of cut bloom, which were rather past their best. Messrs. W. Paul & Son, Waltham Cross, N., also sent Roses. Mr. C. J. Graham, Croydon, S.W., sent a few very bright blooms. A good specimen of *Lilium Thompsoni* Kramerii also came from him.

An extensive collection of Ferns from Mr. May, Dyson's nursery, Upper Edmonton, N., was a feature, the numerous species and varieties being tastefully arranged. *Pteris hybrida* is compact and erect, *P. tremula elegans* is one with a graceful spreading and drooping habit, also very pretty. Other *Pterises*, with *Cheilanthes* and *Adiantums*, including *A. Weigandi*, were the chief constituents.

Competing Class.—Prizes offered by Messrs. J. Laing & Sons, Stanstead Park Nursery, Forest Hill, for six and three specimens of tuberous *Begonias*. Six plants.—1st, Mr. Newell, gr. to Sir E. Sanders, Fairlawn, Park side, Wimbledon, massive well-bloomed old varieties; 2nd, Mr. Wright, gr., Devonhurst, Chiswick; 3rd, Matthew Hodgson, Esq., Shirley Cottage, Shirley, Surrey, small plants, freely bloomed. Mr. Hodgson also took the 1st prize in the smaller competition, and Mr. Wright was awarded a 3rd prize for his exhibit of three plants.

FIRST-CLASS CERTIFICATES.

To *Prunus domestica variegata*, from Messrs. Paul & Son.

To *Delphinium Ustane*, from Messrs. Kelway & Son.

To *Delphinium Prince of Naples*, from Messrs. Kelway & Son.

To *Allium pedemontanum*, from Mr. T. S. Ware.

To *Pteris tremula elegans*, from Mr. H. B. May.

To *Ostrowskya magnifica*, from Messrs. J. Veitch & Sons.

To *Gymnogramma Pearcei robusta*, from Messrs. J. Veitch & Sons.

To *Rhododendron Souvenir de J. H. Mangles*, from Messrs. J. Veitch & Sons.

To *Escallonia Phillipiana*, from Messrs. J. Veitch & Son.

To *Carnation Germania*, from Messrs. Hooper & Co.

To *Cœlogyne Sanderiana*, from Baron F. de Rothschild.

To *Carpenteria californica*, from Miss Jekyll.

MEDALS.

Silver Banksian.—To Messrs. Kelway & Son, for *Delphiniums* and *Gaillardias*; to T. B. Haywood, Esq., for *Roses* and *Orchids*; to Mr. T. S. Ware, for cut flowers; to Messrs. Paul & Son, for group.

Bronze Banksian.—To Messrs. Keynes, Williams & Co., for cut *Roses*; to Mr. May, for *Ferns*; to Messrs. J. Laing & Sons, for cut flowers of *Begonias*.

Fruit Committee.

Present: H. J. Veitch, Esq., in the chair; and Messrs. R. D. Blackmore, J. Wright, P. Crowley, J. Willard, and J. Roberts.

Of the exhibits of interest in this section were the Peas, haulm and all, from Messrs. J. Veitch & Sons, Chelsea. These were hung up by the heels on a pole, and thereby afforded a good idea of their relative height when fully grown and in bearing; and being, moreover, arranged according to the dates at which each came into use, afforded an excellent idea of their earliness and bearing character. Beginning with the earliest, at the left-hand, we found Veitch's Extra Early, a short-podded Pea, abundant cropper, apparently nearly all ready to pick at one time. Fit to gather June 27. Height 2 feet. Earliest of all, is of the same height, a good bearer, and ready at the same date as the first named.

Emerald Gem is a free variety, with a short thick pod; and William I. (Chelsea Gem), 1½ foot in height, free bearer, small pods and seeds. Ready on June 28. American Wonder, a poor bearer, also Little Gem, but little better, were ready June 29. William Hurst has a thin scimitar-shaped pod.

Of the taller varieties we may mention the Auvergne, an old Pea; Telephone, Telegraph, and Duke of Albany, as being good bearers. The first named being one of the earliest (July 7), and certainly the best cropper.

Messrs. W. Lovel & Sons, Driffield, Yorks, sent Strawberries *La Grosse Sucrée* and *Vicomtesse H. de Thury*. A Melon, and Tomato Favourite came from Mr. Palmer, gr. to W. F. Hume-Dick, Esq., Thames Ditton, the Tomato being sent as an early variety. Early Hereford Cauliflower—the heads being about 4 inches across, and the plant dwarf, was shown from the Society's gardens at Chiswick; it is a capital sort, delicately flavoured.

BRAINTREE AND BOCKING HORTICULTURAL.

In stormy weather the annual *fête* of this persevering and well-managed Society came off on Thursday, July 5, and in the several large marquees a display was arranged which, if a little less in quantity than in some previous years, was better than ever in quality. The table decorations, and especially those with wild flowers, in which class Mrs. Soder took 1st prize, being remarkably good.

The Silver Cup given by Mrs. J. N. Harrison was taken by Mr. W. Dance, gr. to Colonel Lowe, Gosfield Hall; Mr. Burrell, gr. to W. W. Duffield, Esq., Chelmsford, being close up to him. Mr. Burrell, however, easily carried off the 1st of the prizes for stove and greenhouse plants in flower, given by Sydney Courtlaud, Esq.; Miss Cawston, of High Garrett, was 2nd.

The prizes given by Miss Cawston for eight distinct plants in 8-inch pots went to Mr. W. Dance, Mr. J. Rolfe, gr. to Captain Harrison, being 2nd.

For the most tastefully arranged group of pot plants in a space 6 feet by 4 feet, Miss Cawston was well 1st, as also in the class for six *Caladiums*, with magnificent specimens, and for a specimen stove or greenhouse plant, with a grand *Bougainvillea glabra*.

One of the best and most interesting exhibits was the collection of Ferns of Sydney Courtlaud, Esq., which secured the 1st prize, the same gentleman easily taking 1st also in the class for a basket of pot plants, not exceeding 30 inches in diameter, with a well arranged lot of Orchids, chiefly fine varieties of *Odontoglossum crispum* and *Epidendrum vitellinum majus*.

The 1st prize lot of six tuberous *Begonias* of Mr. Thos. Taylor were very fine, and among them was a

grand pure white. Mr. F. Smooty had the best *Coleus*. Mr. G. Clements was 1st, for six *Gloxinias*. Mr. Rolfe, Mr. Dance, and Mr. Brazier, and others, exhibited well in several classes, and the cut *Roses* of Mr. W. Brown were very fine.

Vegetables, fruit, honey, wild flowers, &c., were well represented, and altogether a good show provided, Mr. Gibbs, the Secretary, and the committee having worked well and intelligently in keeping up the character of the Society.

TWICKENHAM HORTICULTURAL.

JULY 9.—Specially favoured with lovely weather the annual exhibition of this Society was held in the Orleans House grounds, and presented by far the best display yet made by this Society, the exhibits being not only abundant but first-class. The decorative groups were remarkably good, one from Messrs. Hooper & Co., Twickenham, coming 1st; whilst a new exhibitor, Mr. H. W. Fordham, with a very gay arrangement, came 2nd; and Mr. Filsell was 3rd. With smaller groups Mr. Buckland, gr. to J. Patkins, Esq., was 1st; and Mr. Parsons, gr. to T. Twining, Esq., 2nd.

Mr. Hill, gr. to H. Little, Esq., had the best six *Orchids*, all good plants; Mr. H. James, Lower Norwood, being 2nd. Mr. Hill also staged a fine group of *Cattleyas*, *Dendrobiums*, *Aërides*, &c., which evoked much admiration.

Mr. H. James had the best six flowering plants, Mr. Parsons being 2nd, the former having some neat *Heaths*, and the latter a fine *Gloriosa superba*.

With foliage plants—a strong class—Mr. Parsons was a good 1st, Mr. Munro coming very close with even clean specimens. Mr. Hill was the only exhibitor of six zonal *Pelargoniums*, grandly flowered plants; and he also had the best twelve *Begonias*, medium sized plants, capitally flowered; Mr. Garrod, gr. to J. R. Tindall, Esq., having excellent plants also. Mr. Parsons had the best six *Gloxinias*, Mr. Garrod being 2nd, the plants being remarkably well flowered, whilst there were a few non-competitive plant groups.

The display of *Roses* from Messrs. W. Paul & Sons, Waltham Cross, and Messrs. Veitch & Sons formed a beautiful feature. Mr. Taylor, Hampton, also had some pretty *Roses*, including many of the small buttonhole varieties. Mr. Warwick, gr. to J. T. Kitchen, Esq., Hampton, was a good 1st, with twenty-four and twelve singles, also having some beautiful cut *Gloxinias*. Mr. W. Poupart, Twickenham, made a fine collection of hardy cut flowers.

Fruit was very good and plentiful. Mr. W. Allan, gr. to Sir G. Russell, M.P., Reading, had the best six dishes, having capital Black Hamburgs and Foster's Seedling Grapes, Royal George Peaches, Violet Hâtive Nectarines, Blenheim Orange Melon, and President Strawberries; he was also 1st with three bunches of good Black Hamburg Grapes; Mr. Thompson, gr. to Messrs. A. & E. Wells, Hounslow, coming 2nd with very fine Madresfield Court.

In the class for white Grapes, Mr. Fitzwalter, gr. to H. Labouchere, Esq., M.P., came 1st with capital Muscat of Alexandria, Mr. Allan coming 2nd with Foster's Seedling. Mr. Allan had the best six Peaches in Violet Hâtive, and Mr. O. Hickie, gr. to A. Cunard, Esq., Orleans House, had the best Nectarines. Mr. Goody showed a handsome scarlet Strawberry—a seedling, and was the 1st in a large competition. The best collection of ten kinds of vegetables came from Mr. Waite, gr. to the Hon. Colonel Talbot, Esher. Mr. Poupart showed fine Cauliflowers, and Mr. Wallace, Twickenham, had a very big show of Tobacco plants, cut flowers, and vegetables.

FINCHLEY HORTICULTURAL.

JULY 10.—The twenty-ninth annual exhibition of this Society was held, by kind permission of Henry Charles Stephens, Esq., M.P., in the picturesque grounds of Avenue House, Church End, Finchley, and in response to a liberal schedule of prizes the competition was keen in most classes. The most noteworthy exhibits were the groups of plants arranged for effect, in a space of 50 feet. The 1st prize was taken by Mr. H. Eason, gr. to B. Noakes, Esq., North Hill, Highgate, for a very tastefully arranged lot of *Palms*, *Caladiums*, *Pancratiums*, &c.; Mr. S. Brown, gr. to J. E. B. Cox, Esq., Moat Mount, Mill Hill, being 2nd.

For six stove and greenhouse specimens, Mr. Eason took 1st with grandly flowered plants of *Allamanda grandiflora*, *Gloriosa superba*, *Ixora Williamsii*, *Erica*

tricolor impressa, *E. Cavendishiana*, and *Maxillaria tenuifolia*. Mr. S. Barnett, gr. to R. Littler, Esq., Palmer's Green, followed with good examples of *Allamanda Hendersoni*, *Clerodendron Balfouriana*, *Statice profusa*, and *Brassia verucosa*.

Mr. Eason also had the best six fine-foliaged plants, showing *Areca Baueri*, *Croton undulatum*, *Pandanus Veitchii*, *Acalypha musaica*, *Asparagus plumosus*; and was again followed by Mr. Barnett with good plants of *Pandanus*, *Dracenas*, and *Alocasia metallica*.

The 1st place for six exotic Ferns was easily won by Mr. Brown, with *Davallia Mooreana*, *Adiantum amabile*, *Microlepia hirta cristata*, *Adiantum concinnum* in fine examples; Mr. Barnett coming 2nd with *Gymnogramma*, *Laucheana*, *Thamnopteris Nidus*, *Adiantum cardiochlamna*, *Lygodium scandens*.

Orchids were not keenly contested, the best six coming from Mr. Eason, who contributed good plants of *Oncidium flexuosum*, *O. Wentworthianum*, *Cypripedium niveum*, *C. barbatum giganteum*, *Cattleya Gaskelliana*, and *Aërides odoratum*.

Zonal *Pelargoniums* were good from Mr. H. Eason, who had Fanny Catlin, Metis, Zelia, and Edith Pearson; and the same exhibitor had the best single specimen, showing a fine plant of *Plutarch*.

The best six *Fuchsias* came from Mr. Brown, who had well flowered plants.

Fruit and *Roses* were not up to the usual quality.

From Mr. B. S. Williams came a choice collection of miscellaneous plants, and Messrs. Cutbush & Son showed *Roses* and *Palms*, &c.

WOODBIDGE HORTICULTURAL.

This Society held its thirty-sixth annual meeting on the 4th inst., in the Abbey grounds, which are immediately contiguous to the town, and though the day was anything but agreeable, the several attractions the committee offered drew a large number of visitors, who, now and then, as the showers fell, had to make a hasty stampede into the tents. These, on the whole, were very well filled with creditable productions, the fruit and *Orchids* from Lord Rendlesham being specially noticeable, and the groups of plants arranged in a space 12 by 4 feet, made a capital show. These exhibits are deserving of encouragement, as the plants grown for them are far more useful, from a general point of view, than the elephantine specimens more usually seen, although they may not perhaps call forth the same amount of skill in their culture. In the class referred to, Mr. King, gr. to J. A. Burness, Esq., of Melton, was a good 1st, both for plants and arrangement, the 2nd, 3rd, and 4th prizes going to collections which were highly creditable to the growers.

For *Orchids*, Mr. Rogers, gr. to Lord Rendlesham, was 1st, the *Thunias* in his lot being remarkable for high finish and health.

For six stove and greenhouse plants, Messrs. Gilbert, of Ipswich, were to the fore; the 2nd prize falling to the lot of Mr. N. Gunn, gr. to Miss Jones; and the 3rd to Mr. Spink, gr. to Mrs. T. W. Grimwood.

In the class for the same number in 12-inch pots the honours again fell to the Messrs. Gilbert, the 2nd prize going to Mr. Gunn, and the 3rd to Mr. Spink.

For the best stove or greenhouse plant in bloom, Mr. Spink was 1st, Mr. Gunn 2nd, and the Messrs. Gilbert 3rd.

The plants for table decorations, a fine lot, were arranged up the centre of the tent containing the cut flowers and *Roses*, which they helped to tone down and set off; Mr. King, gr. to J. A. Burness, was 1st; Messrs. Gilbert 2nd, and Mr. Best, gr. to the Duke of Hamilton, 3rd.

The *Fuchsias*, both in 12 and 24-sized pots, were very well grown and bloomed, the 1st prize for the larger specimens going to Mr. Spink, and the premier award for the smaller, to Mr. King.

There were numerous other classes for such plants as *Cockscombs*, *Hydrangeas*, *Petunias*, *Achimenes*, *Selaginellas*, *Verbenas*, *Gloxinias*, *Begonias*, *Caladiums*, *Carnations*, *Balsams*, &c., all fairly represented, but the list of prizetakers would be too long to enumerate here.

In the cut flower division the chief features were the *Roses*, and the *epergnes* containing wild flowers; in the latter of which there was strong competition, and good taste was displayed in the arrangement. The 1st prize was most deservedly awarded to Miss Susie Walker, of Melton; 2nd, Miss Canter. For the best stand for table decoration Miss Clara Walker was 1st, Mrs. Gilbert 2nd; and for the basket of cut flowers Miss Wrench was a good 1st, and Miss Susie

Walker 2nd. For a hand bouquet, made and competed for by ladies, Mrs. Chettleburgh was 1st; and for a bridal bouquet, Mr. Andrews, gr. to the Hon. W. Lowther, was 1st.

Roses.—In the amateurs' class for *Roses*, the Rev. H. A. Berners, of Workstead Rectory, carried all before him, he being 1st in every class, his blooms were very fine, especially those of the *Teas*, which were remarkably stout and firm in the petals, and perfect in colour. The Rev. Foster-Melliar also had good flowers, which won 2nd honours in the same classes.

For thirty-six, competed for by growers for sale, Mr. B. R. Cant, of Colchester, was 1st, and Mr. Wood, of Woodbridge, 2nd.

Fruit.—In the fruit department, the collection of eight dishes, exhibited by Mr. Rogers, gr. to Lord Rendlesham, was very meritorious, the Black Hamburgh Grapes and Peaches and Nectarines particularly so. Excepting the Hamburgs from the same exhibitor, who took 1st, Grapes were not well ripened or coloured, and most of them wanted quite a month longer to finish.

Peaches and Nectarines were very good, the 1st prize dish of the last-named, from Mr. Chettleburgh, being remarkable for size and colour; and those from the Duke of Hamilton were very well finished.

Although the season is considered a bad one for Strawberries, these fruits were abundant and good at Woodbridge; and Cherries were particularly fine, the late rains having served to swell them up to a large size.

In the vegetable department there was a strong competition for the prize offered by Messrs. Sutton, of Reading, for ten varieties, the 1st prize going to Mr. Andrews, gr. to the Hon. W. Lowther, M.P.; the 2nd to Mr. King, gr. to J. A. Burness, Esq.; and the 3rd to Mr. Crisp.

Peas, as usual, were in great quantities, but the better kinds were not in season, and the varieties shown were chiefly William I., Duke of Albany, and Market Favourite.

Obituary.

CALEB COPE.—American horticulture is again in mourning for one of its great patrons, Caleb Cope, one of the early founders and for many years President of, the Pennsylvania Horticultural Society, in the days when this famous Society was running a race with the no less famous Massachusetts Society for the leadership of horticulture in America. Undoubtedly to these two great societies, with Wilder in one and Cope in the other, is due much of the great progress in the love of gardening which, during the last half century, has been so rapid in the New World.

Caleb Cope belonged to a family eminent among the merchants and famous men of America. Two of them—Cope Brothers—founded the famous line of packet ships between Philadelphia and Liverpool, and Professor Edward D. Cope is known for his eminent scientific attainments all over the world. Caleb Cope was born in Greensburg, Pa., in 1797, soon after America became independent, and was, therefore in his ninety-first year at the time of his death, on May 12. He became the leading dry goods merchant in Philadelphia, and after amassing considerable wealth, bought an estate called Spring Brook, in the suburbs of the city, solely to gratify his love of gardening. The grounds were beautifully laid out, and extensive ranges of glass established for the growth of fruit and flowers. When the Victoria regia first flowered, and made such a sensation in England, Mr. Cope put himself into communication with Sir Wm. Hooker, and through his assistance plants were grown, and a magnificent house built for it. Here it flowered, and was the centre of as much attraction as it received in the Old World.

The remarkable sympathy with humanity which he possessed was especially shown in his horticultural pursuits. A childless widower, but a small part of the products of the establishment was required for his own use, the rest went to friends or public institutions, the public hospitals getting the chief portion of the forced fruit and vegetables. Under his presidency the Pennsylvania Horticultural Society became the most popular institution in the city, and a large

surplus was made over and above its expenses and invested as a contingent fund. His own collections of course contributed largely to the interest of the exhibitions. All the public institutions of Philadelphia owed a large measure of success to his active and generous aid and patronage.

Suddenly, about the year 1855, by the abuse of confidence by a partner, the whole of his wealth was swept away, and the firm went into bankruptcy. The collections of plants went to the auction mart, and the estate was sold to persons with no love for horticulture. The horticultural glories of Spring Brook closed. The estate is now used as a public charity, under the will of the great tragedian, Edwin Forrest—the Forrest Home for Unfortunate Actors. Mr. Cope's friends came to his rescue. He again entered business, was successful, paid every dollar of the old indebtedness of his firm, and accumulated enough to buy another beautiful home in the suburbs of Philadelphia, turning his attention, however, to outdoor gardening only. With the same generosity that marked his earlier career, these grounds were also free to the public.

When the Southern States rebelled in 1861 there were large numbers in the South true to the old Government, who, soon after losing their wealth, escaped through the lines to the North. Among these were the widow and daughter of one of the leading families of Nashville, who came to Philadelphia. These refugees always excited the sympathy of the Northern Unionists. These two fell to Mr. Cope's charge, and he subsequently married the daughter, who, with two sons, now survive him.

On account of advanced age at the time of their decease living horticulturists have but a faint idea of the great debt due to Wilder and Cope for their work, but those who study the history of the past will fully understand the noble lesson of their lives. *Thomas Meehan.*

THE WEATHER.

THE PAST WEEK.

The following summary record of the weather for the week ending July 9, is furnished from the Meteorological Office:—

"The weather has continued in an unsettled and most unseasonable condition in all parts of the kingdom. Thunder and lightning have been of frequent occurrence in most parts of England, and at some of the Irish stations, and the falls of rain at times very heavy. In the south of London on the 6th an inch of rain fell in the short space of half an hour.

"The temperature has again been below the mean, the deficit in most districts varying from 4° to 6°. The highest of the maxima, which were recorded on somewhat irregular dates, ranged from 63° in 'Scotland, W.' to 71° in the 'Midland Counties' and England, S.W.' The lowest of the minima were generally registered towards the close of the week, when the thermometer fell to 32° in 'Scotland, N.,' 34° in 'Ireland, N.,' and to between 37° and 42° in most other districts. At Newton Reigny (in 'England, N.W.') the minimum on the 9th is reported to have been as low as 30°.

"Rainfall has been rather less than the mean in Scotland, as well as in the north-west of England and north of Ireland, but in most other parts of the kingdom an excess is shown, especially in the east and south of England.

"Bright sunshine has continued very deficient generally, the percentage of the possible amount of duration in most districts varying from 15 to 28. In 'Scotland, N.' the percentage was 35, and in the 'Channel Islands,' 36.

MEAN TEMPERATURE OBSERVED AT CHISWICK DURING THE WEEK ENDING JULY 21. (AVERAGE OF FORTY-FOUR YEARS.)

July 15	63°.4	July 19	63°.4
" 16	63°.4	" 20	63°.4
" 17	63°.4	" 21	63°.4
" 18	63°.4	Mean for the week	63°.4

[Accumulated temperature indicates the combined amount and duration of the excess or defect of temperature above or below 32° F. for the period named, and is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.				
	Above or below the Mean for the week ending July 9.	ACCUMULATED.			
		Above 42° for the Week.	Below 42° for the Week.	Above 42° difference from Mean since Jan. 3, 1888.	
				Day-deg.	Day-deg.
Principal Wheat-producing Districts.					
0. SCOTLAND, N. ...	6 below	49	0	- 115	+ 201
1. SCOTLAND, E. ...	6 below	62	0	- 243	+ 157
2. ENGLAND, N.E. ...	6 below	76	0	- 265	+ 73
3. ENGLAND, E. ...	5 below	101	0	- 212	+ 154
4. MIDLAND COS. ...	5 below	92	0	- 257	+ 150
5. ENGLAND, S. ...	4 below	106	0	- 296	+ 204
Principal Grazing, &c., Districts.					
6. SCOTLAND, W. ...	4 below	76	0	- 176	+ 107
7. ENGLAND, N.W. ...	5 below	85	0	- 212	+ 117
8. ENGLAND, S.W. ...	3 below	101	0	- 272	+ 251
9. IRELAND, N. ...	4 below	86	0	- 173	+ 67
10. IRELAND, S. ...	3 below	100	0	- 155	+ 113
— CHANNEL ISLANDS	2 below	114	0	- 223	+ 154

DISTRICTS.	RAINFALL.		BRIGHT SUNSHINE.	
	More or less than the Mean for the Week.	No. of Rainy Days since Jan. 3, 1888.	Total Fall since Jan. 3, 1888.	Percentage of possible Duration for the Week.
Principal Wheat-producing Districts.				
0. SCOTLAND, N. ...	1 less	122	19.3	35
1. SCOTLAND, E. ...	1 less	104	14.6	15
2. ENGLAND, N.E. ...	0 (aver.)	95	11.6	17
3. ENGLAND, E. ...	5 more	98	11.5	23
4. MIDLAND COS. ...	0 (aver.)	89	11.4	18
5. ENGLAND, S. ...	6 more	92	13.1	20
Principal Grazing, &c., Districts.				
6. SCOTLAND, W. ...	2 less	94	20.6	16
7. ENGLAND, N.W. ...	2 less	98	11.9	16
8. ENGLAND, S.W. ...	2 more	99	15.8	33
9. IRELAND, N. ...	4 less	101	17.4	18
10. IRELAND, S. ...	1 more	94	18.8	28
— CHANNEL ISLANDS	2 more	115	14.7	36

NOTICES TO CORRESPONDENTS.

REPORTS OF SHOWS.—Several show reports have been received by us, viz., Ipswich and East of England, Glasgow and West of Scotland, Chertsey and District, which we hope to be enabled to insert in our next issue.

ANTS IN TURF: *Constant Reader.* There are many ways of getting rid of these intruders; two that are effectual, and not injurious to vegetation, are carbolic acid and Osier-bark steep. The former should be diluted with twelve times its weight of water, and poured or squirted into their haunts; the latter—which is the water in which Willow bark and Osiers for basket-making are steeped before peeling—can be used undiluted.

HERBACEOUS PLANTS: *W. C. S.* See our numbers for January 21, and February 4, of this year. *Hardy Flowers*, by W. Robinson (Macmillan & Co., London); *Thomson's Handy Book of the*

Flower Garden (W. Blackwood & Sons, London and Edinburgh).

LATHYRUS CERCULEUS: *S. & N. S. Co.* Very pretty and worth extended culture, but, of course, no novelty.

LETTUCE: *A Constant Reader.* We have no acquaintance with the variety you mention.

MAGNOLIA: *W. A. G.* Cut it back in September, early, the plant will then have time to develop incipient wood-buds by the springtime, when it should bristle with young growths, which may then be thinned out, leaving the strongest and best placed.

NAMES OF PLANTS: *A. C.* 1, probably *Cytisaster nepalensis*; 2, *Tussilago farfara* (Coltsfoot); 3, *Agrostemma Githago*; 4, *Agrostis vulgaris*.—*C. A.* 1, *Phyllanthus nirivus*; 2, *Primula obconica*; 3, *Lychnis flos jovis*; 4, *Tradescantia virginica*.—*Lyminster.* The seed vessels of one of the Poplars; you do not send leaf, so we cannot tell you which—probably the Canadian.—*Tyro.* 1, *Mackaya bella*; 2, *Selaginella caesia*; 3, *Selaginella denticulata*; 4, *Euphorbia cyparissias*; 5, *Sedum rupestre*; 6, *Papaver nudicaule*.—*D. J. W.* *Trachelium cœruleum*, white variety.—*W. S.* 1, *Rhus cotinus*; 2, *Escallonia rubra*, white variety.—*H. J. R.* *Arum dracunculoides*, *Ornithogalum arabicum*.—*Constant Reader.* 1, *Euphorbia cyparissias*; the Saxifrage next week.—*C. A. L.* 1, *Caccinia glauca*; 2, *Iris ochroleuca*; 3, an *Allium*, not recognisable; 4, *Sempervivum montanum*; 5, *Veronica*; 6, *Scutellaria* (see next week).—*Cefutilla.* *Habenaria chlorantha* (Butterfly Orchis).—*J. L.* 1, *Spergularia arvensis*; 2, *Polygonum aviculare* (Knot-grass, so called because it is not a grass).—*J. C. Ross.* *Cymbidium aloefolium*.—*Hy. Corder.* *Cirrhæa fuscoluteum*.—*T. Horsman.* *Odontoglossum luteo-purpureum*, which has been fertilised.—*J. McL.* *Craetagus*, probably *C. tanacetifolia*, but it is impossible to say for certain from the specimen. Send when in fruit.—*G. S.* Probably *Iris spuria*. The *Lupin* is a pretty form. *Aquilegia* specimens insufficient.—*J. B.* *Hieracium aurantiacum*.

ONION: *O. & M.* The bulb resembles *Early Nocera*; at any rate it is early, and therefore deserving of notice. Should make a pickling Onion if taken at the proper time.

ROSE: *J. K.* The union of two Roses on one stalk is not uncommon. Many thanks.

ROYAL HORTICULTURAL SOCIETY: *Grey-Beard.*—There is happily now no reason whatever to despair. Things have not been so favourable for many years. The Council has worked hard, and done wonders in the time, and, as there is still much to be done, we have no doubt they will take note of the circumstances you mention.

SHELLS: *Constant Reader.* The little conical shells found in a pot in which *Eucharis amazonica* was growing, are either *Rissoa ulvæ* or *Odostomia conoidea*. *I. O. W.*

MOTH: *A. L.* *Sphinx ligustri*, not uncommon.

TOMATOS: *J. F., G. B., and Others.* Yes. Try the effect of sulphate of copper, as recommended last week (p. 15), and let us know the result.

COMMUNICATIONS RECEIVED:—*J. V. V.*, Brussels.—*Prof. Cornu*, Paris.—*J. H. K.*, Haarlem.—*T. H. P.*,—*M. C. C.*—*J. W.*,—*H. G.*,—*Dr. B.*,—*Dickson*, Brown & Tait.—*J. K.*—*A. d'Home*,—*J. D.*,—*Sons*,—*D. M.*,—*J. C.*,—*E. P.*,—*Ghent*,—*H. M.*,—*Consul*,—*Dusseldorf*,—*Baron V. Mueller*,—*J. J.*,—*R. H. P.*,—*W. S.*,—*S. Davis*,—*J. S.*,—*F. R.*,—*J. E.*,—*J. R.*,—*D. C.*,—*J. W. S.*,—*Camjee*,—*R. W. P.*,—*J. R. J.*,—*E. J.*,—*A. D.*,—*Deane & Co.*,—*R. M. R.*,—*E. F. T.*,—*H. C.*,—*Sons*.

Correspondents sending plants or fruits to be named, or asking questions demanding time and research for their solution, must not expect to obtain an answer to their enquiries in the current week.

MARKETS.

COVENT GARDEN, July 12.

No alteration. Trade bad. *James Webber*, Wholesale Apple Market.

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Cherries, half-sieve...	3 0-6 0	Peaches, dozen	2 0-10 0
Grapes, per lb.	1 8-3 6	Pine-apples, Eng., lb.	2 0-8 0
Kent Cobs, 100 lb.	40 0-45 0	— St. Michael, each	2 0-5 0
Lemons, per case	12 0-21 0	Strawberries, lb.	0 6-1 0
Melons, each	1 0-3 0		

VEGETABLES.—AVERAGE RETAIL PRICES.

s. d. s. d.	s. d. s. d.
Artichokes, p. doz. ... 6 0	Mushrooms, punnet 1 0-1 6
Asparagus, Fr., bund. 1 6-4 0	Mustard and Cress, punnet 0 4-...
— English, 100 ... 3 6-6 0	Onions, per bushel ... 5 0-...
Beans, Kidney, lb. ... 1 0-...	Parsley, per bunch ... 0 4-...
Beet, red, per dozen 1 0-2 0	Potatoes, per cwt. ... 4 0-5 0
Carrots, per bunch ... 0 9-...	— kidney, per cwt. 4 0-5 0
Cauliflowers, each ... 0 8-...	Rhubarb, per bundle 0 4-...
Celery, per bundle ... 1 6-2 6	Shallots, per lb. ... 0 6-...
Cucumbers, each ... 0 9-1 0	Spinach, per bushel ... 2 6-...
Endive, per dozen ... 2 0-...	Tomatoes, per lb. ... 1 0-...
Green Mint, bunch ... 0 4-...	Turnips, per bunch, new ... 0 8-...
Herbs, per bunch ... 0 4-...	Vegt. Marrows, each 0 6-...
Leeks, per bunch ... 0 6-...	
Lettuce, per dozen ... 1 6-...	

POTATOS.—Jersey Flukes, 6s. to 7s.; do. Kidneys, 6s. to 7s. per cwt.; English, 4s. to 5s. per bushel. Trade very heavy. Markets blocked.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.	s. d. s. d.
Aralia Sieboldi, doz. 6 0-12 0	Fuchsias, doz. ... 4 0-9 0	
Bouvardias, per dozen 9 0-18 0	Heliotropes, dozen ... 4 0-8 0	
Calceolarias, doz. 4 0-9 0	Hydrangeas, dozen ... 0 9-18 0	
Carnations, per doz. 6 0-18 0	Liliums, var., doz. ... 18 0-30 0	
Coleus, doz. ... 3 0-6 0	Lobelias, per dozen 3 0-6 0	
Crassula, per doz. ... 10 0-18 0	Marguerites, doz. ... 9 0-12 0	
Cyperus, per dozen 4 0-12 0	Mignonette, 12 pots 4 0-8 0	
Dracena terminalis, per dozen ... 30 0-60 0	Myrtles, doz. ... 1 6-3 0	
— viridis, per doz. 12 0-24 0	Palms in var., each 2 6-21 0	
Eunonymus, in var., per dozen ... 6 0-18 0	Pelargoniums, doz. ... 6 0-15 0	
Evergreens, in var., per dozen ... 6 0-24 0	— Ivy-leaf, dozen ... 3 0-6 0	
Ferns, in var., doz. 4 0-18 0	— scarlet, dozen ... 3 0-9 0	
Ficus elastica, each 1 6-7 0	Rhodanthe, per doz. ... 6 0-9 0	
Foliage plants, various, each ... 2 0-10 0	Scented Geranium doz 3 0-6 0	
	— Verbena, per doz. 4 0-6 0	
	Spiræas, dozen ... 6 0-12 0	
	Zinnia, per dozen ... 4 0-6 0	

BEDDING-OUT PLANTS.

Per dozen, 1s. to 2s.; per box, 1s. to 3s.

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Asters, 12 bunches ... 6 0-8 0	Orange Lily, 12 bun. 6 0-12 0
— French, per bun. 2 0-3 0	Pansies, 12 bun. ... 1 6-3 0
Bouvardias, per bun. 0 6-1 0	Pelargoniums, 12 spr. 0 6-1 0
Carnations, 12 blms. 1 0-2 0	— scarlet, 12 spr. ... 0 3-0 6
— dozen bunches ... 4 0-6 0	Pinks, 12 bun. ... 3 0-6 0
Chrysanthemums, annual, 12 bun. ... 1 0-3 0	Poppies, 12 bun. ... 4 0-6 0
Cornflower, 12 bun. 1 6-3 0	Primulas, double, 12 sprays ... 0 9-1 0
Delphiniums, 12 bun. 3 0-6 0	Pyrethrums, 12 bun. 2 0-4 0
Eucharis, per dozen 3 0-6 0	Rhodanthe, 12 bun. 4 0-6 0
Forget-me-nots, 12 bunches ... 2 0-4 0	Roses, Tea, per doz. 0 6-1 6
Gardenias, 12 blooms 1 6-4 0	— coloured, dozen 2 0-4 0
Heliotropes, 12 spr. 0 6-1 0	— red, per dozen 1 0-2 0
Iris, various, 12 bun. 3 0-9 0	— 12 bunches 3 0-6 0
Lilium longiflorum, 12 blooms ... 3 0-5 0	— Safrano, dozen ... 0 9-1 6
— candidum, 12 bl. 0 9-1 6	— Moss, 12 bun. ... 4 0-12 0
— per bunch ... 1 6-2 6	Spiræa, 12 bun. ... 4 0-6 0
— (Orange) per bun. 1 0-2 0	Stephanotis, 12 spr. 20 4 0
Marguerites, 12 bun. 3 0-6 0	Sweet Peas, 12 bun. 3 0-6 0
Mignonette, 12 bun. 3 0-6 0	Sweet Sultan, 12 bun. 3 0-6 0
	Tuberose, 12 blms. ... 0 6-1 0

*. Orchid bloom in great variety, but the demand not very good.

FRUIT AND VEGETABLES.

SPITALFIELDS: July 11.—Good supplies of all kinds of fresh vegetables. Peas, new Potatoes, &c.; trade fairly active, at undermentioned quotations:—Fruit: Black Currants, 4s. 6d. to 5s. 6d. per half sieve; red, 5s. 6d. to 6s. do.; Raspberries, 7d. to 9d. per punnet; Strawberries, 2s. 6d. to 3s. 3d. per peck; do. in punnets, 3s. 6d. to 5s. per dozen punnets; English Cherries, 2s. 6d. to 5s. per half sieve; foreign do. 1s. 9d. to 2s. 6d. per bushel; Gooseberries, 2s. 6d. to 3s. per half sieve; English Tomatoes, 3s. to 4s. per peck. Vegetables: Cabbages, 2s. to 4s. 6d. per tally; Peas, 5s. to 7s. per sack; do. 2s. to 3s. 6d. per sieve; spring Onions, 2s. to 2s. 6d. per dozen bunches; Carrots, 2s. 6d. to 3s. do.; Turnips, 2s. to 3s. do.; Parsley, 1s. to 1s. 6d. do.; Mint, 1s. to 1s. 6d. do.; Rhubarb, 1s. 6d. to 2s. 6d. per dozen bundles; foreign Onions, 7s. 6d. to 8s. 6d. per box of about 112 lb.; frame Cucumbers, 2s. to 3s. per dozen; Endive, 1s. 6d. to 2s. do.; Cos Lettuces, 2d. to 4d. per score; Beet-roots, 6d. to 8d. per dozen.

POTATOS.

BOROUGH AND SPITALFIELDS: July 10.—With increased supplies, new Potatoes are sensibly moderate in price. Quotations:—Jersey kidneys, 6s. to 7s.; do. round, 5s. to 6s. 6d.; Cherbourg rounds, 6s. to 8s. per cwt.

SPITALFIELDS AND COLUMBIA: July 11.—Quotations:—New: Jersey kidneys, 5s. to 5s. 6d.; do. flukes, 5s. 6d. to 6s. 6d.; St. Malo rounds, 3s. to 4s.; Lisbon do., 5s.; Cherbourg do., 4s. to 4s. 6d. per cwt.

STRAFORD: July 10.—Quotations:—New: Dutch, 2s. 3d. per bushel; Cherbourg, 4s. to 4s. 6d.; Jersey kidneys, 5s. to 6s.; St. Malo rounds, 4s. to 4s. 6d.; do. kidneys, 4s. 9d. to 5s. per cwt.

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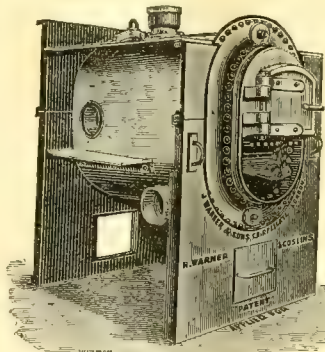
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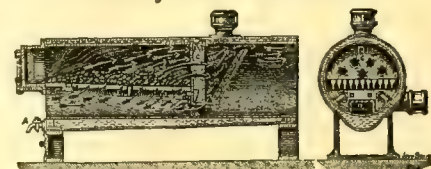
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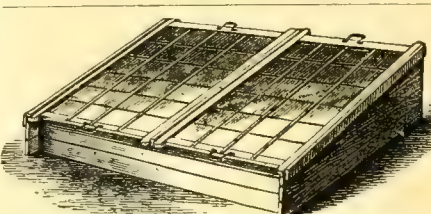


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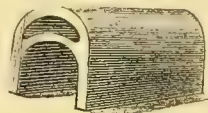
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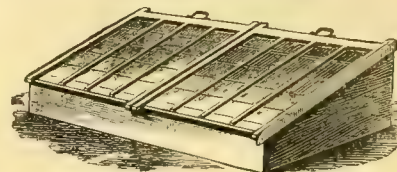
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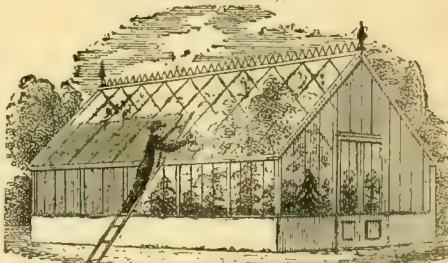
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None need apply who character will not bear the strictest
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GARDENER (good SINGLE-HANDED).—Age 25; has obtained thorough practical knowledge of Fruit, Plant, and Vegetable Growing in well-kept gardens. Highest references. Please state full particulars.—P. Gardeners' Chronicle Office, 41, Wellington Street, Strand, W.C.

GARDENER (SINGLE-HANDED).—Age 32; married when suited. Thoroughly practical; willing to be useful. Total abstainer. Good references.—State wages to J. F., Abbey Mount, Belvidere, Kent.

GARDENER (SINGLE-HANDED).—Age 32, married, no children; three years' good character; five years previous. Well up in Flowers, Fruit, and Vegetables.—J. P., 7, Barnwell Road, Brixton, S.W.

GARDENER (SINGLE-HANDED, or good SECOND).—Understands Flower and Kitchen Garden. Good references. Total abstainer.—W., 12, Ross Villas, Richmond, S.W.

GARDENER (SECOND); age 24.—Mr. G. KEATES, Temple Gardens, Marlow, Bucks, can with confidence recommend J. Fletcher, who has been with him the past two years. Abstainer.

GARDENER (SECOND).—Age 22; eight years' experience. Inside and Out preferred. State wages and particulars.—G. MINSHALL, The Gardens, Studley Castle, near Redditch.

GARDENER (SECOND), in Houses.—Age 21; six years' experience. Five years in present situation. In and Outdoors. Highest reference.—C. W., Ivy Cottage, Weybridge.

GARDENER (under SECOND, where five or six are kept; or THIRD, in a large establishment.—Age 24; two years' character.—F. FRAMPTON, Merley Gardens, Wimborne.

GARDENER (UNDER).—Young; three and a half years' good character. Eight years' experience.—H. GREEN, Mr. Newman, Thames Street, Weybridge.

GARDENER (UNDER) in a Gentleman's Garden.—Age 20; three years' good character.—W. H., Compton's Brow, Horsham.

GARDENER (UNDER).—Age 21. Three years' character from last place.—R. E., 4, Effingham Road, Lee Green, S.E.

GARDENER (UNDER).—Age 22; six years in last place; Inside and Out. Abstainer.—G. CHANNELL, Hersham, Walton-on-Thames, Surrey.

GARDENER (UNDER), where four or five are kept.—Age 21; seven years' experience. Inside and Out. Two years' good character from present situation.—G. T. R., 19, Percy Gardens, Isleworth, Middlesex.

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FOREMAN, in a good establishment.—Age 27; twelve years' experience in good establishments. Two and a half years as Foreman in present situation.—J. GARDENER, Thames Ditton House, Kingston-on-Thames.

FOREMAN, in the Houses.—Age 26; twelve years' experience, including eight for exhibition. Excellent testimonials.—FOREMAN, 35, Stamford Road, Fulham, S.W.

FOREMAN, in the Houses.—Age 27; eleven years' experience in good places; good references from last and previous employers.—G. LILLEY, Thorney, near Peterborough, Cambs.

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JOURNEYMAN, in the Houses in a good Garden.—Good references.—J. BAKER, 66, Arthur Street, Fulham Road, Chelsea, S.W.

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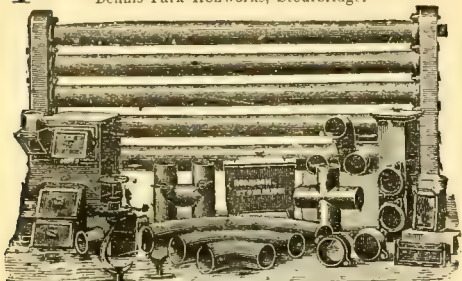
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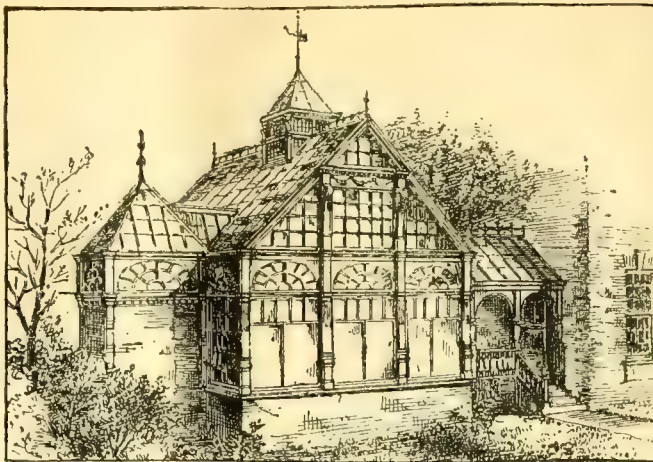
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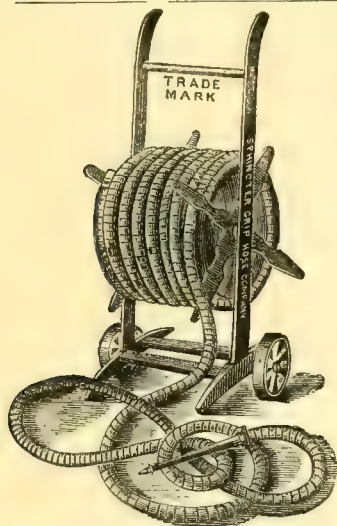
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1358-inch. 1360-inch. 1362-inch. 1364-inch. 1366-inch. 1368-inch. 1370-inch. 1372-inch. 1374-inch. 1376-inch. 1378-inch. 1380-inch. 1382-inch. 1384-inch. 1386-inch. 1388-inch. 1390-inch. 1392-inch. 1394-inch. 1396-inch. 1398-inch. 1400-inch. 1402-inch. 1404-inch. 1406-inch. 1408-inch. 1410-inch. 1412-inch. 1414-inch. 1416-inch. 1418-inch. 1420-inch. 1422-inch. 1424-inch. 1426-inch. 1428-inch. 1430-inch. 1432-inch. 1434-inch. 1436-inch. 1438-inch. 1440-inch. 1442-inch. 1444-inch. 1446-inch. 1448-inch. 1450-inch. 1452-inch. 1454-inch. 1456-inch. 1458-inch. 1460-inch. 1462-inch. 1464-inch. 1466-inch. 1468-inch. 1470-inch. 1472-inch. 1474-inch. 1476-inch. 1478-inch. 1480-inch. 1482-inch. 1484-inch. 1486-inch. 1488-inch. 1490-inch. 1492-inch. 1494-inch. 1496-inch. 1498-inch. 1500-inch. 1502-inch. 1504-inch. 1506-inch. 1508-inch. 1510-inch. 1512-inch. 1514-inch. 1516-inch. 1518-inch. 1520-inch. 1522-inch. 1524-inch. 1526-inch. 1528-inch. 1530-inch. 1532-inch. 1534-inch. 1536-inch. 1538-inch. 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1722-inch. 1724-inch. 1726-inch. 1728-inch. 1730-inch. 1732-inch. 1734-inch. 1736-inch. 1738-inch. 1740-inch. 1742-inch. 1744-inch. 1746-inch. 1748-inch. 1750-inch. 1752-inch. 1754-inch. 1756-inch. 1758-inch. 1760-inch. 1762-inch. 1764-inch. 1766-inch. 1768-inch. 1770-inch. 1772-inch. 1774-inch. 1776-inch. 1778-inch. 1780-inch. 1782-inch. 1784-inch. 1786-inch. 1788-inch. 1790-inch. 1792-inch. 1794-inch. 1796-inch. 1798-inch. 1800-inch. 1802-inch. 1804-inch. 1806-inch. 1808-inch. 1810-inch. 1812-inch. 1814-inch. 1816-inch. 1818-inch. 1820-inch. 1822-inch. 1824-inch. 1826-inch. 1828-inch. 1830-inch. 1832-inch. 1834-inch. 1836-inch. 1838-inch. 1840-inch. 1842-inch. 1844-inch. 1846-inch. 1848-inch. 1850-inch. 1852-inch. 1854-inch. 1856-inch. 1858-inch. 1860-inch. 1862-inch. 1864-inch. 1866-inch. 1868-inch. 1870-inch. 1872-inch. 1874-inch. 1876-inch. 1878-inch. 1880-inch. 1882-inch. 1884-inch. 1886-inch. 1888-inch. 1890-inch. 1892-inch. 1894-inch. 1896-inch. 1898-inch. 1900-inch. 1902-inch. 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SALES BY AUCTION.

Monday Next.—Special Sale of Orchids.

MESSRS. PROTHEROE AND MORRIS will sell by AUCTION, at their Central Auction Rooms, 67 and 68, Cheapside, London, E.C., on MONDAY NEXT, July 23, at half-past 12 o'clock precisely, by order of Mr. F. Sander, valuable IMPORTED ORCHIDS, including Cattleya Mendelii, a splendid importation, just arrived, among which are some very fine masses, abundantly furnished with healthy foliage; C. Mossie, in good condition; large importation of C. Bowringiana, in good condition; Aerides Fieldingii, Cattleya amethystina, C. citrina, the rare Oncidium pyramense, O. undulatum, specially selected masses of O. ornithorhynchum, O. Forbesii, Epidendrum ciliolare, specially fine masses of Odontoglossum Cervantesi, O. nobilissimum, O. maculatum, O. Rossii, Saccolabium Blumei majus, S. guttatum, and Sophronitis grandiflora. Also 19 cases of ORCHIDS received direct for unreserved Sale, including 3 cases of Oncidium luridum, 700 Cattleya intermedia, Leopoldii, and amethystina, &c.

On view morning of Sale, and Catalogues had.

Tuesday, Wednesday, Thursday, and Friday Next.
THE DOWNSIDE COLLECTION OF ORCHIDS.

Second Portion.

HIGHLY IMPORTANT SALE of the whole of this renowned Collection, including many plants matchless in point of rarity, and the whole remarkable for culture and condition, embracing unquestionably the most valuable and extensive Collection of

ESTABLISHED ORCHIDS
ever submitted to Public Competition.

MESSRS. PROTHEROE AND MORRIS will sell by AUCTION, on the Premises, Downside, Leatherhead (fifteen minutes' walk from the London and South-Western, and London, Brighton, and South Coast Railway Stations), on

TUESDAY, WEDNESDAY, THURSDAY, and FRIDAY NEXT,
July 24, 25, 26, and 27, 1888,

at half-past 12 o'clock precisely each day, by order of Wm. Lee, Esq. (who is selling the Estate of Downside, and relinquishing the cultivation of Orchids), the SECOND PORTION of this extremely valuable Collection of

ESTABLISHED ORCHIDS.

Amongst the plants included in the Second Sale, the following may be specially mentioned:—

Cattleya Gordon	Cattleya Trianae	Leanae
" " Chelsoni	" " Dodsoni	" "
" " Edinburghii	" " Osmani	" "
" " tricolor	" " alba	" "
" " proteus	" " regina	" "
" " formosa	" " Normani	" "
" " Emiliae	" " Jackhousiana	" "
" " Archduchess	" " Victoria Regina	" "
" " Orion	" " maguicha	" "
" " Wallisii	" " Archduke	" "

And many others not yet named, with their portraits by G. Macfarlane, the whole forming probably the grandest collection of fine varieties of the Trianae section ever brought together, many of the plants, moreover, being of the largest size.

Cypripedium Morganiae	Laelia callistoglossa
" chloroneurum	" Amesiana
" Schroderae	" Wolstenholmei
" Wallisii	" anceps Calvertiana
" tessellatum porphyreum	" Dawsoni
" calophyllum	" elegans Turneri
" Harrisianum superbum	" purpurata Brysiana
" insigne aureum	Oncidium ornithorhynchum
" selligerum majus	" album
" superciliosum	Odontoglossum Leeanaum
" canthanthum superbum	Trichopilia suavis alba
" politum	Pachystoma Thomsoni
" Ashburntoniae	Bulbophyllum sarcocaulum
" grande	Masdevallia (theoretical Bull's
" Godefroyae	" Blood), part of the
" Leeanaum superbum	" plant certificated, 1873
" Sedeni candidulum	Vanda Sanderiana
" Auguste Regneri	" savas
Cattleya calummatia	" Denisoniana hebraica
" exoniensis	" tricolor Patersoni
" labiata (autumn flower-	" Warneri
" ing)	" Russelliana
" Skinneri, grand speci-	" Downside variety
" mens	Saccolabium Heathii
" alba	" Harrisonianum
" Percivaliana, special	Dendrobium nobile nobiliss.
" varieties	" the well-known large
" alba	" plant
" grandiflora	" splendidissimum grandi-
" Mossae alba	" florum
" Southgatei	" stratiotes
" Mendelii, special varie-	" Kingianum album
" ties	" Phalaenopsis
" Germaniana	" Harveyanum
" Madrelli	Coleogyne cristata alba
" Mastersoniae	" Lowii
" Hardyana	Cymbidium Parishii
" Ludemanniana brillian-	Maxillaria Sanderiana
" tissima	

MASDEVALLIA SECTION
comprises a grand and complete collection of Masdevallias, many of the highest class, and some very rare.

ODONTOGLOSSUM SECTION.

There is a large and very choice collection of the finest varieties in large plants, true to name, which have been grown at Downside for several years, and are models of successful cultivation.

PHALAENOPSIS SECTION.

Amongst the Phalaenopsis are two plants of P. Brymeriana, and one of the true variety Dayana.

The plants may be viewed any day prior to the Sale, on presentation of card to view. Catalogues are now ready, and may be obtained of Mr. WOOLFORD, the Head Gardener, on the Premises; and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

Orchids in Flower.—Special Sale, July 31.

MESSRS. PROTHEROE AND MORRIS desire to announce that their NEXT SPECIAL SALE of ORCHIDS IN FLOWER will take place as above, for which they will be glad to RECEIVE NOTICE OF ENTRIES as early as possible.

67 and 68, Cheapside, London, E.C.

Friday, August 3.—Important to Large Buyers.

Preliminary Notice.

2000 ODONTOGLOSSUM ALEXANDREI. Pacho varieties, compact masses, 300 CATTLEYA SANDERIANA, all in splendid condition, collected and brought home by Mr. Schmidtz, for Sale, without reserve.

MESSRS. PROTHEROE AND MORRIS are instructed to sell the above by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY, August 3, at half-past 12 o'clock precisely.

On view morning of Sale, and Catalogues had.

Friday, August 17.

The remaining portion of the valuable Collection of Established ORCHIDS, formed by F. A. Philbrick, Esq., Q.C., of Oldfield, Bickley.

MESSRS. PROTHEROE AND MORRIS beg to give notice that they will sell the above by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY, August 17.

Further particulars will appear.

Kingston, Surrey.

By order of the Executors of the late Mr. Thomas Jackson.
IMPORTANT SALE OF VALUABLE FREEHOLD AND LEASEHOLD PROPERTIES.

Preliminary Notice.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions to sell by AUCTION, at the Mart, Tokenhouse Yard, London, E.C., on THURSDAY, August 30, (first in one lot, and if not thus sold, then in separate lots), the valuable FREEHOLD ESTATE known as the Kingston Nursery, Kingston, containing a total area of 2 acres, with the modern detached Freehold Residence, 22 Greenhouses and numerous Outbuildings, and the Goodwill of the old-established Nursery and Seed Business, the desirable Freehold House and Shop in Thames Street, Kingston, now utilised as a Seed Shop, with 2 Cottages and Stabling adjoining, also the several Leasehold Nurseries known as the Kingston Hill Nursery, containing an area of 12 acres 3 rods 10 perches, the Nursery in Park Road, Norbiton, area 10 acres, and the Long Ditton Nursery, Long Ditton, area 15 acres 0 rods 13 perches.

The Purchaser or Purchasers will have the option of taking the Stock in the respective lots at a valuation to be made in the usual way.

May be viewed. Particulars and Plans obtainable at the Mart; of G. C. SHERRARD, Esq., Solicitor, 26, Lincoln's Inn Fields, W.C.; and of the Auctioneers and Surveyors, 67 and 68, Cheapside, London, E.C., and Leytonstone.

City of Peterborough.

HIGHLY IMPORTANT PROPERTY.

To Inkeepers, Confectioners, Horticulturists, Florists, Seed Merchants, and Others.

The Old-established, FULL-LICENSED RESTAURANT, with large Dining-rooms, Confectioner's, Fruiterer's, and Seed and Flower Shops, situate in Church Street, Peterborough, opposite the Corn Exchange, in which a very extensive Business has been carried on for many years past, Copyhold of the Manor of Peterborough. Fine Small and Certain; also the extensive FREEHOLD NURSERY in Eastgate, with 12 Glass Houses, Ice House, Stables, with Loft over; Gig-house, Office, and Potting-sheds, and the excellent newly-erected Brick and Slated RESIDENCE, with Out-offices at the south end thereof; the convenient YARD on the north side of Eastgate, opposite the Nursery, with the long range of Sheds and other Buildings standing thereon, having an area of 1 rood 15 perches, of which 25 perches is Freehold and the remainder Copyhold of the Manor of Peterborough; and also a FREEHOLD FIELD, containing 3 a. 1 r. 0 p. (more or less), now used as a Nursery-ground, and having an immediate prospective value as Building Land. The whole Property is in the occupation of Mr. John House, or his Trustee.

MR. JOHN FOX will sell by AUCTION, by order of the Mortgagees, at the "Angel" Hotel, Peterborough, on SATURDAY, July 28, 1888, at 3 for 4 o'clock in the afternoon, in lots, subject to such conditions of sale as will be then produced, and the Trustee under Mr. House's liquidation will, if desired, concur in the Sale for the purpose of transferring the Goodwill of the Business to the Purchasers. A plan of the Estate may be seen at the office of the Auctioneer, Bridge Street, Peterborough; and further information may be obtained on application either to him or to Messrs. VERGETTE and BUCKLE, Solicitors, Peterborough; or at my offices in Whittlesey. JOHN PEED, Vendor's Solicitor, Whittlesey, July 2, 1888.

Town Hall, Northampton.

To the Nobility, Gentry, Florists, and Others.

A Collection of 100 VALUABLE ORCHIDS and STOVE PLANTS.

MESSRS. MACQUIRE AND TARRY, favoured with instructions from Mrs. Seymour, of Norton Hall, will sell by AUCTION, at the Town Hall, Northampton, (whither they will be removed for convenience of sale), on TUESDAY, July 31, an exceedingly valuable COLLECTION of ORCHIDS including Aerides odoratum, Brassavola glauca, Brassia cordata, Calanthe veratridifolia, Cologne cristata, Cypripedium insigne, C. longifolium, C. barbatum, Cattleya Skinneri, Dendrobium nobile, densiflorum, chrysanthum, thyrsoforum, speciosa, and noble; Lycaste cruenta and Harrisoni; Oncidium sphecelatum, flexuosum, ampliatum, and catifolia; Odontoglossum triumphans, cirrosum and Alexandrie, Phaius grandifolius, Vanda tricolor, and many other important varieties. Also will be sold a few lots of STOVE PLANTS, including Cycas revoluta, Ixora, Anthurium majestatum, &c.

The Sale will commence at 1 o'clock in the Afternoon. Catalogues, containing full particulars, may be obtained of the Auctioneers, Northampton.

Wednesday, August 1.

FINE IMPORTATIONS of ODONTOGLOSSUM CRISPUM (best type), O. GRANDE, CHYSIS AUREA, C. BRACESCENS, COMPARETTIAS, MASDEVALLIAS, WHITE LELIA ANCEPS, &c., from Messrs. Shuttleworth, Carder & Co.

MR. J. C. STEVENS will sell the above by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY, August 1. On view morning of Sale, and Catalogues had.

Thursday, August 2.

Valuable IMPORTED and ESTABLISHED ORCHIDS, from Mr. F. Sander.

MR. J. C. STEVENS will sell the above by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, August 2. Further particulars in next Advertisement.

Hillington Nurseries, New Road, Hillington, near

Uxbridge, Middlesex.—By order of the Mortgagees.

To FLORISTS, MARKET GARDENERS, GROWERS, and OTHERS. **MESSRS. TAPLIN** are favoured with instructions to sell by AUCTION, on MONDAY, July 30, at the Mart, Tokenhouse Yard, City, E.C., at 1 o'clock, the above valuable Old-established NURSERY and POULTRY FARM, with Two Villas, and about 12,000 feet of Glass, Out-buildings, Sheds, &c., covering a space of 2½ Acres. Held at a Low Rent.

Particulars and Orders to View of C. H. T. WHARTON, Esq., Solicitor, 31, John Street, Bedford Row, W.C.; and the Auctioneers, 68, St. John's Wood Road, N.W.; and Hayes, Middlesex.

WANTED TO HIRE, small NURSERY with

Glass. Advertiser has his own Stock. State full particulars to ORCHID, Gardeners' Chronicle Office, 41, Wellington Street, Strand, W.C.

In the Suburbs.—(Pol. 6391.)

Specially recommended.

TO BE SOLD, in consequence of the retirement of the owner, an old-established, thoroughly genuine and very lucrative NURSERY and FLORIST BUSINESS, numerous Greenhouses, Dwelling-House, Lease 20 years, Rent £75. Price about £2000, half of which could remain. Full particulars of

Messrs. PROTHROE AND MORRIS, 67 and 68, Cheapside, London, E.C.

Esher and Claremont Park.

TO BE SOLD, CLIVE HOUSE, for many years the residence of the Hon. Mr. Justice Wills, with 5½ or 10½ Acres, Freehold, on the hill 125 feet above sea level, and facing Claremont; 3 Attics, 11 Bedrooms, 4 Reception Rooms, and Offices; beautiful Gardens and Grounds; Outbuildings.

Messrs. LOFTS and WARNEK, 130, Mount Street, W.; or Messrs. DEBENHAM, TEWSON, FARMER and BRIDGE-WATER, 80, Cheapside, E.C. (12,473.)

TO BE SOLD, small compact NURSERIES

situated at Watford and Bushey; good Greenhouses upon them, heated by hot-water. Near stations, and easy distance from London. Apply to

Mr. J. H. EVES, House Agent, 120, High Street, Watford.

FOR DISPOSAL, a FLORIST'S BUSINESS.

—Main Road, opposite Addison Road Station and Olympia. Long Lease, Stock, Fixtures. Good jobbing connection. Everything, £200.

9, Hammersmith Road, W.

To Florists and Small capitalists

Seeking a pleasant and remunerative occupation.

THE LEASE and GOODWILL of a well-established BUSINESS, successfully carried on for over 50 years, the present owner retiring. Every investigation courted in personal application. Price £300. Stock at valuation.—W. A. CLINGO, Nurseryman and Florist, 18, Finchley Road, St. John's Wood, N.W.

South of England.

LARGE GARDEN, 20 Acres, with Twenty (greenhouses and Vineries, £7000 has been spent on the property. Seven years' lease. Two cottages inclusive. £150 a year. ELDRIDGE, Portsmouth.

Manor Park, E.—Freehold or Lease.

TO BE LET or SOLD, a Double-fronted HOUSE, containing 8 Rooms, Bath Room, fitted with hot and cold water, and Scullery; 3 Greenhouses at back fitted with hot-water apparatus, and back entrance.

Apply on premises, Avenue House, Third Avenue, Manor Park, Essex, E. No agents.

TO LET, a Small JOBBING and FLORIST'S NURSERY, consisting of 4 Houses and several Pits, excellently situated, in most fashionable part of Leicester. An advantageous opportunity for an energetic and enterprising man.—Apply, HARRISON AND SONS, Royal Midland Seed Establishment, Leicester.

Durant's Arbour Estate, Ponder's End, Middlesex.

To NURSERYMEN, FLORISTS, and OTHERS.

TO BE LET, on Lease, for 21, 60, or 80 years, 1 to 50 acres of excellent MEADOW LAND, from £3 to £11 per acre, with the option of the purchase of the freehold within the first 9 years. No title or land tax. Apply to A. AND G. GUIVER, Land Agents, &c., Ponder's End, N.B. Several Nurseries established on the estate.

PROTHEROE AND MORRIS, HORTICULTURAL MARKET GARDEN and ESTATE AUCTIONEERS and VALUERS, 67 and 68, Cheapside, London, E.C., and at Leytonstone, E. Monthly Horticultural Register had on application.

FERNs.—FERNs.—FERNs.—Gonophlebium subariculatum.—A fine stock of this elegant Basket Fern, strong established plants, in 3-inch pots. My stock of Ferns is by far the largest in the kingdom, including immense quantities of all the leading and popular sorts, in various sizes; also a great number of choice species and varieties. An inspection is respectfully invited. Prices on application.

H. B. MAY, Dyson's Lane Nursery, Upper Edmonton,

ORCHIDS.

THE LIVERPOOL HORTICULTURAL CO.
(JOHN COWAN), Limited,

Have just received large and fine importations
of the following

ORCHIDS:—

CATTLEYA MENDELII.

„ AMETHYSTOGLOSSA,

„ GUTTATA LEOPOLDI,

LÆLIA PURPURATA,

MILTONIA CANDIDA GRANDIFLORA,

„ SPECTABILIS MORELIANA,

SOPHRONITIS GRANDIFLORA, &c.

Full particulars on application.

THE VINEYARD AND NURSERIES,
GARSTON, near LIVERPOOL.

GARDENIAS.—We never had a finer stock
of this beautiful Greenhouse Shrub. Specimen Plants,
3 to 4 feet high, from 25s. to 50s. each; half specimens, from
2 to 3 feet, 5s. to 10s. each; smaller plants, good stuff, 30s.
per dozen. These are the very best sorts. This is a fine
opportunity to stock a place with large plants.

E. COLLINS AND SONS, Cumberland Park Nurseries,
Willowden Junction, N.W.

CREEPERS FOR WALLS.—By planting
what is suitable, an ugly object may easily be made
beautiful. Most being in pots, can be sent and put out at any
time. Descriptive LIST and advice Free.—RICHARD SMITH
AND CO., Nurserymen and Seed Merchants, Worcester.

VAN MEERBEEK & Co.,

Nurserymen and Florists,

HILLEGOM near HAARLEM,
HOLLAND,

GROWERS OF

DUTCH BULBS.

Goods delivered free to destination in
Great Britain.

NO PACKING CHARGES.

Orders respectfully solicited before September.

STRAWBERRIES A SPECIALTY
SELECT LIST FREE
SAMPLE OF PLANTS 3d
W. LOVEL & SON, DRIFFIELD.



CLEARANCE SALE
OF STRONG HEALTHY PALMS.

Lantana borbonica, Senecioia elegans, Phoenix reclinata,
&c., 20 to 24 inches high, 18s. per dozen. Same kinds,
2 ft. 6 in. to 3 ft. high, 3s. to 5s. each. Handsome Palms
for decoration, 5 ft. 6 in. to 6 ft. high, 70s. per pair. Small
Palms, 10 to 12 in. high, 4s. per dozen.

Kentias, from 3s. to 21s. each.

Fine Dracenas, from 2s. to 30s. each.

Over 50,000 Palms to select from.

B. OWEN, The Palm Gardens, Stamford Hill, N.

A Visit solicited.

**CUTBUSH'S MILL-
TRACK MUSHROOM SPAWN.**
—Too well known to require descrip-
tion. Price, 6s. per bushel (1s. extra
per bushel for package), or 6d. per
cake; free by parcel post, 1s.

None genuine unless in sealed pack-
ages and printed circular directions
enclosed, with our signature attached.

WM. CUTBUSH AND SON
(Limited), Nurserymen and Seed
Merchants, Highgate Nurseries, N.

BEESEON'S MANURE.—The Best and
Cheapest Fertiliser for all purposes. Write for Circular
containing the Leading Gardeners' and Market Growers'
Reports. Sold in Tins, 1s., 2s., 4d., 5s. 6d., and 10s. 6d. each,
or 1 cwt. Bags, sealed, 12s. By all Seedsmen, or apply direct to
W. H. BEESEON, Carbrook Bone Mills, Sheffield.

PEAT for ORCHIDS,

AZALEAS, HEATHS, FERNS, RHODODENDRONS, &c.
The Best in the World.

A. JOHNSON AND CO., 23, Leadenhall Street, London, E.C.,
continue to receive the highest testimonials (unsolicited) from
large Orchid Growers, stating the ORCHID PEAT supplied by
A. J. & Co. is by far the best they have ever used. Samples can be
seen at above address, or forwarded on application free of charge.

MOST EFFECTIVE, SAFE & ECONOMICAL.

IMPROVED & ONLY GENUINE

"Medicated Tobacco Paper"

(READY CUT UP FOR USE).

Reduced Price 16 per lb.;

25lbs. & upwards—Carriage Paid.

Parcels for trial, sent Free by Parcels Post, viz.:

2 lbs. 3/4, 4 lbs. 6/8, 6 lbs. 9/9, 8 lbs. 13/9, 10 lbs. 16/9.

IMPROVED

FUMIGATING PAN

Is vastly superior to any other.

Price 6/6 (in iron with heater) each,
or in Copper, 21/.

DICKSON'S Improved

MUSHROOM SPAWN

MOST SUPERIOR, 5/- PER BUS.

Circulars giving all particulars & copies of testi-
monials, post free on application.

DICKSONS

(LIMITED).

Royal Nursery and Seed Establishment,

CHESTER.

CERTAIN SUDDEN DEATH

To all Grubs, Aphids, Lice, Red Spider, Thrip, Mealy
Bug, Caterpillars, &c., &c

PERFECTLY } to the Hands and Skin, but will cure
HARMLESS } Kingworm in Animals, and all diseases
produced by parasites.

FIR TREE OIL (SOLUBLE) INSECTICIDE

A combination of Hydrocarbon Oils, made soluble in
Water, for destroying ALL INSECTS & PARASITES
that infest Trees and Plants, whether at the Roots or
on the Foliage.

Sold by Seedsmen and Chemists, 1s. 6d., 2s. 6d., & 4s. 6d.;
1 gallon 7s. 6d., 1 gallon 12s. 6d., or less in larger quantities.

A Treatise on FIR TREE OIL as an INSECTICIDE,
its application to Plants and Animals, sent Post free
on receipt of address, by the Manufacturer,



For
Glass Houses. **HUGHES'**
GREEN & CREAM COLOR SHADING

Convenient, Inexpensive—Easily applied—Lasts all the
Summer, and can then be easily washed off. 1s., post 1 3.

E. GRIFFITHS HUGHES, Manchester.
Wholesale: HOOPER & Co.; CORRY, SOPER, FOWLER & Co.;
C. E. OSMAN & Co.; and from all the London Seed Mer-
chants and Wholesale Patent Medicine Houses, NEW
YORK—ROLKER & SONS.

NATIVE GUANO.—Price £3 10s. per ton,
in bags. Lots under 10 cwt., 4s. per cwt.

A 1 cwt. sample bag sent, carriage paid, to any Station in
England on receipt of post-office order for 5s.

Extracts from Twelfth Annual Collection of Reports:—
NATIVE GUANO for POTATOS, VEGETABLES, VINES,
and FRUIT.—G. COUSINS, Walton-on-Thames. "Used for
Potatoes. Result: very excellent crop; remarkable size and
good quality. Can highly recommend it."

D. WILLIAMS, Head Gardener to the Rt. Hon. Lord Wimborne,
Canford Gardens, Wimborne. "Used for Vines, Peaches,
Strawberries, flowering plants, kitchen garden crops, with
very good results. First class manure for pot Strawberries."

NATIVE GUANO for ROSES, &c.—T. ST. CLAIR, Rose grower
by appt. to H.R.H. the Princess of Wales, Strawberry Hill.
"Used for standard and dwarf Roses. Result: excellent growth,
fine bloom, and perfectly free from blight the whole season."

A. F. BARRON, Royal Horticultural Soc., Chiswick. "With-
out doubt a very valuable manure, and easy of application."

Orders to the NATIVE GUANO CO. (Limited), 29, New
Bridge Street, Blackfriars, London, E.C., where Pamph-
lets of Testimonials may be obtained. Agents Wanted.

GARDEN REQUISITES.

COCOA-NUT FIBRE REFUSE.

4d. per bushel; 100 for 25s.; truck (loose, about 2 tons),

40s.; 4-bushel bags, 4d. each.

LIGHT BROWN FIBROUS PEAT, 5s. 6d. per sack; 5 sacks,

25s.; sacks, 4d. each.

BLACK FIBROUS PEAT, 5s. per sack, 5 sacks, 22s.; sacks,

4d. each.

COARSE SILVER SAND, 1s. 9d. per bushel; 15s. per half

ton; 28s. per ton, in 2-bushel bags, 4d. each.

YELLOW FIBROUS LOAM, PEAT-MOULD, and LEAF-

MOULD, 1s. per bushel.

SPHAGNUM MOSS, 8s. 6d. per sack.

MANURES, GARDEN STICKS, VIRGIN CORK, TOBACCO

CLOTH, RUSSIA MATS, &c. Write for Price LIST.—

H. G. SMYTH, F.R.H.S., 21, Goldsmith's Street, Drury

Lane (lately called 17A, Coal Yard), W.C.

GARDEN REQUISITES.

TWO PRIZE MEDALS.

Quality, THE BEST in the Market. (All sacks included.)

PEAT, best brown fibrous ... 5s. per sack, 5 sacks for 25s. 6d.

PEAT, best black fibrous ... 4s. 6d. ... 5 sacks for 22s.

PEAT, extra selected Orchid ... 7s. 6d. ... 5 sacks for 35s.

LOAM, PREPARED COMPOST ... 1s. per bush., 3s. per sack

LEAF, or PEAT MOULD ... (sacks included).

SILVER SAND, coarse, 1s. 6d. per bush., 14s. half-ton, 24s. ton.

RAFFIA FIBRE, best only ... 1s. per lb.

TORACCO CLOTH, or PAPER ... 1s. lb.; 28 lb., 27s.

SPHAGNUM MOSS, all selected, 3s. per bush., 8s. per sack.

CHUBB'S "PERFECT" FER-
TILIZER (the Best Food for

all kinds of Plants, Flowers, &c. Tins, 7lb. 14lb. 28lb. 56lb. 1 cwt.

Fruits, Vegetables, &c. ... 1/6 3/- 5/- 8/- 14/- 22/-

CRUSHED BONES, or Bone Dust 1/2 2/- 3/6 6/- 12/-

VIRGIN CORK (Best Quality only) — 3/- 5/6 10/6 17/-

RUSSIAN MATS, BAMBOO CANES, PERUVIAN GUANO,

NITRATE OF SODA, HORTICULTURAL CHARCOAL, &c.

PEAT MOSS LITTER, cheapest and best Bedding for Horses and

Cattle, 2d. per ton. Extra large Sample Bales, 6s. each.

COCOA-NUT FIBRE REFUSE (by Chubb's special process),

sacks, 1s. 3d. each; 10 sacks, 11s.; 15 sacks, 15s.; 20 sacks, 18s.;

30 sacks, 25s.; 40 sacks, 30s.; Truck-load, loose, free on rail,

28s. Limited quantities of G., special quality granulated,

in sacks only, 2s. each. Terms, strictly Cash with order.

(Bankers, Union Bank of London.)

CHUBB, ROUND & CO.,

WEST FERRY ROAD, MILWALL, LONDON, E.

WEED KILLER

Supplied by us to Royal Gardens, Kew, the Crystal Palace, &c.
For Destroying Weeds on Carriage Drives, Garden Walks,
Stable Yards, &c. Prices: per gallon, 2s., tin included; 5 gal-
lons, 1s. 6d. per gal.; 10 to 20 gallons, 1s. 4d. per gal., carriage
paid. Special quotation for larger quantities. One gallon makes
26 gallons.

Mr. W. G. HEAD, Superintendent of the Crystal Palace
Gardens, says:—"We were so satisfied with your Weed Killer
and its price, that we have used it absolutely. I have every
confidence in recommending it."

The "Invicta" Insecticide.

For Destroying Mealy-bug, Scale, Thrips, Red Spider, &c.
in tins, 1s. and 2s.; per gallon, 9s., carriage paid.

The "Invicta" Mildew Destroyer.

An unfailing remedy for Mould and Mildew on Roses, Vines,
&c. In bottles, 1s. and 2s., per gal. 7s. 6d., carriage paid.

Used by Messrs. Veitch & Sons, Chelsea, and other Rose Growers.

Sole Proprietors and Manufacturers,

THE AGRI-HORTICULTURAL CHEMICAL COMPANY,

TONBRIDGE, KENT.

SOLD BY SEEDSMEN AND FLORISTS.

PATENT TUBULAR FLOWER STANIS
for Artistic Grouping of Cut Flowers, have attracted
much attention at recent Horticultural Exhibitions.

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GARDENERS' ORPHAN FUND.

RESULT OF THE ELECTION
at the Annual General Meeting, July 13, 1888.

NAME.	Votes.
HYDE, EMILY MABEL	245
SWANSBOROUGH, ALFRED.. ..	171
LACEY, ALBERT	166
SMITH, EMILY	153
GARDINER, RALPH JOSEPH .. .	131
SPYERS, VICTOR	83
BEST, ALBERT EDWARD	80
STANNARD, WILLIAM SAMUEL ..	75
STAPLES, ETHEL	29
SMITH, GEORGE	21

The Meeting then declared EMILY MABEL HYDE, ALFRED SWANSBOROUGH, ALBERT LACEY, EMILY SMITH, RALPH JOSEPH GARDINER, and VICTOR SPYERS, duly elected.

At a subsequent meeting of the Executive Committee, it was resolved that the Four Unsuccessful Candidates be Elected to the Benefits of the Fund.

A. F. BARRON, Hon. Sec.

Royal Horticultural Society's Gardens,
Chiswick, July 18, 1888.

THE GARDENERS' ORPHAN FUND.

DONATIONS and SUBSCRIPTIONS

WILL BE THANKFULLY RECEIVED BY

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Royal Horticultural Society's Gardens,
Chiswick, London, W.

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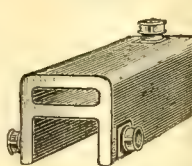
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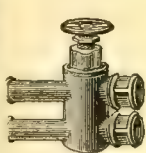
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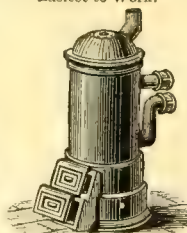
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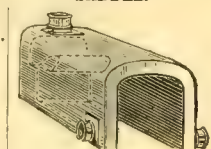
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1000 feet ... 12 0 0
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„ sinensis alba magnifica, splendid pure white	3 6
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„ sinensis, double-flowered, mixed, limited quantity, 6 for 2s.	3 6
PRIMULAS, double, pure white, splendid for furnishing an abundance of cut bloom throughout the autumn and winter. Well rooted strong young plants from 3-inch pots, per 100, 45s.; per dozen, 6s.; 3 for 1s. 9d.	

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HEBRACEOUS PLANTS, planted now in corner of garden, and moved in autumn, seldom die, 3s. per doz., 25s. per 100.

ROMAN HYACINTHS, will soon arrive, many thousands already sold, 14s. per 100.

PAPER-WHITE NARCISSUS, 8s. per 100.

CLEMATIS, 10s. 6d. per doz.; HONEYSUCKLES, JASMINES, 9s. per doz.; IVIES, 6s. per doz. The best of all time s. now to plant these.

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Wallflower, Silene, Myosotis, Canterbury Bells, Sweet Williams, Arabis, Aubrietia, 3d. and 6d. per packet. Lettuce, Onion, Cabbage, Cauliflower, &c., 6d. to 1s. per ounce.

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THE GARDENERS' CHRONICLE

FOR

Next Week, July 28,

WILL CONTAIN A

REPORT ON THE CONDITION

OF THE

FRUIT CROPS

FOR 1888.



THE

Gardeners' Chronicle.

SATURDAY, JULY 21, 1888.

AN AGRI-HORTICULTURAL COUNCIL.

HOME RULE for England, in a somewhat mild form, is now being discussed, and gradually acquiring shape, in the House of Commons and when the Local Government Bill has been finally "dressed" for third reading and passed into law, there will be Local Councils and councillors enough, it is to be hoped, to satisfy all sorts and conditions of men—and women. What all this legislative power, when thoroughly organised and concentrated, can do, in matters horticultural and agricultural, is not as yet very evident, but that much may reasonably be expected goes almost without saying. Given a well-selected Minister of Rural Affairs, he and a well-organised department may do much in the way of suggestion and otherwise, in conjunction with Local Councils. That such an organisation is sadly in request, not a day passes in which evidence is not forthcoming. Concentration of effort is required in every county, town, and city in the land; and scores of weighty "recommendations," by as many Commissions and Committees of Inquiry, are ready to hand, waiting to be realised. In these Local Councils all the land in the country—arable, pasture, orchard, market garden, woods and forests—will be represented, together with every commercial interest (railways and canals included), if not at the first outpouring of local wisdom, then later on.

But a great central organisation is required to keep all sections "in touch;" to see that there is no lagging behind anywhere; an organisation eminently characterised by widely extending views and unflinching patriotism, whose everyday religion is their everyday work, and who will be amply satisfied, as their reward, with the greatest good bestowed on the greatest number.

Such a mighty organisation, we think, is to be found in an Agri-Horticultural Council—a body made up from the Councils or delegates of the Royal Agricultural and the Royal Horticultural Societies and their committees. On this great

Council every rural element should be represented and commercial. Jibbing on the part of the leading horses attached to the various local "coaches" may surely thus be corrected, and fair work got from every bearer of a collar.

It is admitted on all hands that agriculture must be made more and more of a mixed industry—that much of the food (grain, fruit, and meat) now imported could be as well grown at home as it is in foreign countries—that the millions of money now placed year by year by us to the credit of the foreign producer could, or at least a very large proportion of it could, be retained in our local banks and homely thrifty "stockings"—that much of the over-population of our cities might be prevented by taking back the labourer and his family to the land—from demoralising, filthy city "slums" to health-giving, body-satisfying, rural occupation—possibly much of the flood of emigration stayed, and that the education of children at home (at the expense of the ratepayers) for the special benefit of dwellers in other lands might cease.

Work for such a Grand Council? There are years full of hard work before it, under the guidance of a far-seeing secretary. One subject for consideration would be the action of the existing Land Laws on rural industries in general. A recently issued Parliamentary Return furnishes us with some interesting figures relative to unoccupied arable land and land capable of cultivation. The return is made up to June 4, 1887, and, summarised, the figures show a total of 212 unoccupied arable farms in England, of 20,989 acres; in Wales, twelve farms, of 1326 acres; unoccupied detached plots of land (exceeding 5 acres) capable of cultivation, foot up at 133 in number, of 2969 acres collectively; or a grand total of 25,284 acres!

In contrast with this brief note of "vacant plots" and "farms to let," it may be of interest to summarise the return of "acreage of small fruit (such as Gooseberries, Currants, &c.) growing between trees in orchards, as returned upon June 4, 1887, in each county of Great Britain, in the Isle of Man, and the Channel Islands." The total acreage for England is given as 17,153, for Wales at 71, for Scotland at 1252; or, for Great Britain, of 18,476 acres. To this is added 71 for the Isle of Man, 56 for Jersey, and 9 for Guernsey, &c.

Reverting to the "unoccupied land" return, some of the remarks made by the Editor of the valuable document quoted from, may be cited with advantage. He says:—

"The broad fact shown in the return for 1887 of a diminution of 48,533 acres, as compared with that obtained in 1881 in uncultivated land in England and Wales, appears at first glance irreconcilable with the undoubtedly intensified depression in agriculture which is generally believed to exist at present in a more acute form than has been known within recent years. There is, perhaps, a slight tendency to exaggerate the extent of land out of cultivation; but, assuming that the principle of including only such land as was actually uncultivated was closely adhered to in 1881, and as carefully considered by the returning officers of that date as it has been this year, the facts remain, and the solution must be looked for in the circumstances attending each of the two periods in question. The replies to a memorandum addressed to collectors, calling their attention to the results shown, and requesting that the accuracy of their returns of 1887 might be further investigated, appear to leave no doubt on this point, for in those counties where the acreage of unoccupied land now shown is less than in 1881 the figures given in 1887 have, so far as it was possible to test them, been found correct, while there appears to be no reason to suppose that those of

1881 were otherwise. It is suggested in the explanations of some of the officers that in 1881 the existing depression in the farming industry was less felt, and that landlords had not then resolved upon reducing rents or taking farms into their own hands for cultivation, notwithstanding the number of holdings which had become vacant immediately prior to the date of the return in 1881; and that many such farms were for a time allowed to run waste owing to owners being reluctant, probably from regarding the depression as temporary merely, to re-let them at reduced rentals, and unwilling themselves to occupy and cultivate them. Owners of land are now, it is mentioned, either partially or completely cultivating land which is at present untenanted, or they have felt compelled to make very material reductions in rents, and, as a consequence of these altered conditions, the quantity of unoccupied land, which in very many cases has been re-let at a merely nominal rental, or sometimes on payment of the tithes only, has actually decreased."

We extract the following "averages of a certain series of years," from an extended return of the "proportional value per head of the population of the several principal kinds of agricultural food products, comprising corn, flour, meal, fruit, vegetables, sugar, live and dead meat and other provisions imported into the United Kingdom from foreign countries and British possessions in each year from 1866 to 1886 (inclusive)." Total No. 1, represents "farinaceous substances;" No. 2, "other vegetable produce;" No. 3, "live and dead meat;" and No. 4, "other animal produce":—

Yearly Averages.

Years.	Total No. 1.	Total No. 2.	Total No. 3.	Total No. 4.	Grand Total.
	s. d.	s. d.	s. d.	s. d.	£ s. d.
1866-70 ...	25 6	11 9	5 1	7 8	2 10 2
1871-75 ...	34 5	16 1	8 0	9 11	3 7 5
1876-80 ...	37 8	18 1	12 3	12 4	1 0 4
1881-85 ...	35 3	17 1	13 11	13 4	3 19 7

A very pretty sum would be the result of multiplying the value per head by the total of the population.

Scores of subjects will readily suggest themselves to the reader as well suited for the consideration of the suggested Council. A far-seeing, quick-witted, energetic Secretary would soon find work enough and to spare; and he would soon prove to the nation at large that all possessed of the franchise are also entitled to subscribe towards clearing the expenses of the work done in the nation's interest, either as members of the great societies whence it is proposed to draw the Council, or as simply interested in the benefits to be derived from perpetual agitation. Surely also the societies representing the greatest of national interests are entitled to a free "home," such as other societies have—at the nation's expense. In other lands which we are sometimes pleased to consider infinitely less important than our own, such societies as those here concerned are most honourably treated and esteemed—a wonderful contrast to the treatment afforded to the Royal Horticultural Society by the Commissioners of the 1851 Exhibition. The time must come—its distance may even now be measured—when Agriculture and Horticulture, working amicably because interestedly together, will receive fitting recognition at the hands of Government. The new Minister—when appointed—will find this "home" question a "burning" one—he might even see his way to have the "home" located, after all, at South Kensington!—a fitting sequel to the story told in the last report of the Royal Horticultural Society.

We confidently leave this subject of an Agricultural Council to the consideration of the millions so very deeply interested in it.

NEW OR NOTEWORTHY PLANTS.

THUNIA MARSHALLIANA TRILOBA, *n. var.*

Mr. B. S. WILLIAMS has kindly sent me this excellent variety, which has a very broad, really abruptly trilobed lip, with dark reddish-brown veins, and twelve darker rows of processes of crests. I have to add, that I was aware of the description of *Thunia nivalis* when describing *Thunia candidissima*. Impossible to judge it, when there is not a word said as to the spur or the crests. Such descriptions become an intolerable nuisance. Thus I cannot name a beautiful variety of *Aërides odoratum* which may be *Aërides odoratum purpurascens* poorly described, but which may be quite distinct from it. *H. G. Rehb. f.*

THUNIA MARSHALLIANA PURPURATA, *n. var.*

This is a fine variety coming rather near to *triloba*, but not so much trilobed, though the lip is very broad. The superior half of the lip is pure white with five yellow keels running across the disc. The anterior part having numerous bright purple nervations outside, viz., on the sides covered with yellow filiform processes. The middle is nearly white with very numerous yellow filiform processes. The fringed and wavy border is of the purest white, which affords an admirable contrast to the large purple spots, the numerous purple nervations giving the effect of spots at a distance.

It was kindly sent me by Mr. B. S. Williams, my assiduous correspondent for nearly a quarter of a century. It was obtained from W. E. Bryner, Esq., Ilslington House, near Dorchester. *H. G. Rehb. f.*

HELICHRYSUM DEVIUM, *n. sp.**

A bush between 2 and 3 feet high, with scented flowers that appear in April and May. The leaves, which are not in the least viscid, are usually crowded towards the ends of the stout branches. They are from 40 to 70 mm. long, and from $\frac{1}{2}$ to $\frac{3}{4}$ times longer than broad. As in the case of *H. melanophthalmum*, the black discs form a strong contrast with the white scales and peduncles. The cymes rise well above the leaves. From *H. melanophthalmum* (Lowe) this plant differs, *inter alia*, by having the leaves sessile, semi-amplexicaul, three-nerved, with greyish-green surfaces, and white irregularly sinuate borders, in place of stalked, one-nerved white, very entire leaves; also by having the tips of the outer scales broad and semicircular, and the receptacle without a central papilla. By side, the difference in their appearance is at once seized by the eye.

H. Monizii, Lowe, has scentless flowers, with brown discs, and the scales, at first green, become chestnut-brown, edged with purple, the tips being scarious and colourless. Moreover, *H. Monizii* has stalked leaves and smaller heads.

The plant now described was discovered by Senhor J. M. Moniz, the well known botanist of Funchal, growing in tolerable abundance upon the barren islet at the eastern extremity of Madeira which bears the name of Ilheo Vermelho or Ilheo dos Embarcadores, and I am indebted to him for the specimens from which this account of it has been drawn up. *J. Y. Johnson, Funchal.*

* Shrubby, branching, bushy; branches densely tomentose, snowy-white; leaves sessile, semi-amplexicaul lanceolate, narrowed downwards, with greyish-green surfaces and white somewhat sinuate borders; distinctly 3-nerved. Heads hemispherical, broader than high, peduncles distinct, stout, snowy-white, in few (10-30) flowered, terminal, often compound cymes; scales lax in few rows, outer ones opaque, white, often pale brown below, not shining, without scarious tips or borders, ovate, broadly rounded above, sometimes toothed or lacinate; inner scales oblong, brown or purplish along the middle. Disc black; receptacle slightly convex, without a conical papilla at the middle, rough, with umbilicated discs. Pappus shorter than flower, closely echinate, not clavellate. Achenes dark brown, four angular truncate, sprinkled all over with white resinous particles. *J. Y. Johnson.*

THE SEED TRADE.

WHICH IS THE EARLIEST PEA? ROUND-SEEDED VARIETIES.—At their new trial grounds, Springfield, Chelmsford, Messrs. Hurst & Son, of 152, Houndsditch, have endeavoured to answer this question. The lease of their Croydon ground having run out, this enterprising firm thought it wise to go farther afield, and they have secured some good land for the purpose at Chelmsford, by the side of the Great Eastern Railway. It is a stronger and more holding land than the lighter soil at Croydon, and in course of time, when it becomes better tilled, it will grow vegetables to perfection. Already the crops of Peas, Lettuces, Onions, Cabbages, Beans, &c., together with innumerable samples of flower-seeds, can be seen to the best advantage.

But which is the Earliest Pea? I think that a thoroughly good stock of Dillestone's Early Prolific, which is but a selection from the old Sangster's No. 1, still holds its own in the race for earliest, though it may be met with here under several different names. A good selection of this type possesses two advantages—it is both early and hardy—and if the cooked Peas lack the finer quality of some of the second early types, yet it is something to have Peas early, and we are not so particular as to quality early in the season: the fact that they are young fresh Peas, and can be had early, leads us to overlook failings in quality; when we get on to the second earlies we can afford to be more exacting on this point.

What is known as the Extra Early of the Americans, and the Improved Sangster's No. 1 of Hurst & Son (a very fine and true stock, indeed), appear to be one of our very best early Peas. Of the round-seeded type there were eighteen rows of the latter—as level, uniform, and true as a set of ninepins. Sangster's No. 1 is a Pea that requires constant and persistent selection to keep it thoroughly uniform and good. What was growing here as Carter's Lightning is represented by a tall stock of Sangster's No. 1—much taller than the improved type, and decidedly later.

Emerald Gem is a good selected stock of the old Danecroft Rival, a good hardy variety, and, when growing, identical in appearance with Sangster's No. 1, only that the foliage, pods, and Peas are green. But there are some who think it distinct from Sangster's in all respects. After all, I suppose that Laxton's William I. remains the most useful of all that Mr. Laxton has raised: its long curved, well-filled green pods, with a pleasing bloom upon them, are decidedly attractive, and while of acceptable table quality, it is also useful for early exhibitions. But it is a variety that seems to show a tendency to run back to the old Prizetaker, which was probably one of its parents, and so a rigid selection is necessary. But of several samples seen here, Hurst's stock of Improved William I. stood out from all the rest for high-class quality. It is the practice of the firm to grow an acre of a very fine selected stock for seed purposes every year, and the produce is sown for a business supply. It is in this way that a good stock is kept pure and true. Laxton's Early William appears to be identical with Improved William I., both in the character of the growth and dried seeds. Veitch's First Early, blue seeds, Harrison's Eclipse, Laxton's Earliest of All, Carter's Blue Express, and Alaska, may, in the general character and similarity, be set down as blue forms of Sangster's No. 1—but good stocks of it; there were seventeen rows of them, and they were all of one type. Kentish Invicta appears to be the same in all respects, only that it is a little darker in the foliage.

I think that the old Berks Gem, or in its more modern form, the Improved Tom Thumb—the latter being both earlier and better than the old type—to be a Pea well deserving of culture for early work, and especially for growing in pots, or sowing in early warm borders; it produces good sized pods for so dwarf a plant, and is a good cropper also. Blue Peter is of the same character, but has darker pod and foliage and larger Peas; the dry seed being blue in colour. First Crop Blue is a large blue round-seeded Pea, a little taller than Tom Thumb, bears

fine pods, and comes in with the first earlies; it is a capital Pea, well deserving of a much more extended culture.

In Pride of the Market we get a very robust growing and free-branching dwarf Pea, about 18 inches in height, and one that will grow very strong in good ground. It does not come in quite with the first earlies, but it is an excellent Pea for small gardens. It has round seed, while its twin brother Stratagem has wrinkled seed. Early Kenilworth is a kind of pale-podded William I., taller growing, and not quite so early; Scimitar, a desirable variety, and showing a tendency to run out to a tall type. As seen here it is decidedly inferior to William I.

So far I have dealt with the early round-seeded varieties. The early wrinkled types shall be dealt with next. *R. D.* [It is interesting to note that these results do not agree with those obtained by Messrs. J. Veitch & Sons, in the case of the same Peas grown on other soil, and noted in our report of the meeting of the Royal Horticultural Society on the 10th inst. *Ed.*]

ANNUAL LIFTING OF DAFFODILS.

IN your issue of the 7th inst., p. 11, I see Mr. Jenkins refers to some remarks made by me some time ago at the Horticultural Club on the above subject. Politicians claim allowance for after-dinner remarks; I do not know if florists are allowed the same privilege; if not I think they ought to be. Further, it would be impossible for any one leading off the debate on any subject at these meetings to verify all the statements he makes. He ought to be brief, so that the other members present may have an opportunity of airing their opinion on the remarks made. I must own the statement with regard to annual lifting caused a good deal of discussion after the paper was read. Now for the part that Mr. Jenkins seems to think is not very explicit, namely, "It will be found that some varieties require to be lifted every year," that is, they do not succeed with me if they remain more than one year in the ground. The second remark, "while others will remain in the same spot for a number of years and do well." The words which follow this remark, "If it were not for the labour and expense I would lift all my varieties every year," meaning that the latter would even do better if lifted annually than if they were allowed to remain more than one year in the ground; in other words, all varieties are benefited by annual lifting, although some more than others. I am well aware that it has not been the custom with English growers to lift their Daffodils annually—but who succeeds by allowing himself to be entirely guided by custom? Experience has taught me that neither the flower nor the bulb of those that remain more than one year in the ground are equal to those replanted yearly; and if any grower will try the experiment of replanting part of his stock for a number of successive years, he will then see the advantage. Take for example a bulb lifted, say in the beginning of July, dried, carefully cleaned, planted by the beginning of August, if examined by the month of October, when it will be found that the fibre will be much deeper in the ground, and much stronger than in the case of those that have not been lifted; hence follows a larger flower and a better bulb at lifting time. This was clearly visible again this spring with *N. ornatus*: the flowers of those planted last year early in August were much superior to those planted in August the year previous. Mr. Burbidge, in your issue of the 14th inst., p. 35, gives very sound advice when he says, "The best plan in practice is to find out the best course to pursue in one's own soil, and in one's own locality," and this is clearly demonstrated when he says, *N. maximus* is the only one which seems to become stronger with him if left undisturbed for three or four years. Now, this is one of the varieties that I always failed with till I commenced lifting it annually. Now I must differ from Mr. Burbidge when he says the real amateur cultivator of bulbs has nothing to do with the storing of bulbs in any shape or form; here I

must again say, that the bulb that has been dried and cleaned will fibre quicker and stronger than a bulb that has not been taken up and replanted. What I strongly object to is, to divide and clean, and then lay up in heaps to get perhaps heated, or expose them in any form; it is then they will deteriorate—there is no fear of any deterioration when they are drying. What I recommend is, to dry them in trays, and plant the bulbs at once after having been cleaned; and if this custom were practised, I have no doubt whatever that the English grower who forces for market would find home-grown bulbs suit his purpose equally as well as those grown in Holland. *James Walker, Whitton.*

PLANT NOTES.

DELPHINIUM ZALIL.

THIS extremely interesting and valuable acquisition to our hardy perennial plants is now in flower in the Alpine-house at Kew. It was found by Dr. Aitchison while travelling with the Afghan Boundary Commission, and seeds were freely distributed under the name, we believe, of *D. hybridum*. The leaves somewhat resemble those of our common *D. ajacis*, but the plant is most nearly allied to *D. ochroleucum*. It produces a fine spike of 1 to 2 feet in height, sulphury yellow, with a greenish line down the centre of each petal, rather small for a Larkspur, to be in great profusion. The dried flowers known under the name of "Isparak" are treated with boiling water and yield a yellow dye, said to be an important commercial product. In his notes in the *Transactions* of the Linnean Society, Dr. Aitchison says, "This plant forms a great portion of the herbage of the rolling downs of the Badghis. In the vicinity of Guern it was in great abundance, and when in blossom gave a wondrous golden hue to these pastures. In many localities in Khorassan—about 3000 feet altitude—it is equally common. The flowers are collected largely for exportation, chiefly to Persia for dyeing silk with. They are also exported from Herat through Afghanistan to Northern India, where it is used both as a dye and for medicinal purposes. *D.*

CYTISUS RACEMOSUS.

At p. 523 of the last volume I had some notes on this plant and its allies, which I should now like to supplement with the following remarks:—I there pointed out that the plant known in gardens as *Cytisus racemosus* was distinct in certain respects from any wild specimen I had been able to discover, but that it seemed identical with *Genista bracteolata* of Link. There are two figures published of the latter plant which I then overlooked, namely, *Botanical Register*, vol. xxvi. (1840), t. 23, and Maund. *Botanic Garden*, vol. v., t. 235. The former figure is unquestionably identical with the Canary Island species called *Genista stenopetala* by Webb. Lindley remarks:—"The accompanying drawing of this rare plant was made in June, 1832, from a specimen communicated by Mr. Young, nurseryman, of Milford, which was unfortunately lost. It had been received by him from Mr. Webb, who had gathered it in Teneriffe, and sent it home under the name of *Cytisus racemosus*. Some years afterwards, upon showing the figure to Mr. Webb, he recognised it as the *Genista bracteolata* of Link, an obscure plant unknown to De Candolle." The latter figure, though with acute leaflets, probably represents the same species, though it more nearly resembles the *Cytisus racemosus* of gardens. Its origin is thus stated:—"The plant was raised from seed by R. Bevan, Esq., near Bury St. Edmunds, under the name of *Cytisus chrysobotrys*, but he is not aware from whence the seed was obtained." The synonym there cited, "*Genista racemosa*, Lindley, *Botanical Register*, 1840, pl. 23," is an error, that plate, as already shown, being *Genista bracteolata*, Link. From the above facts I am now inclined to believe that *Genista stenopetala*, Webb, and *G. bracteolata*, Link, are identical, and that *Cytisus racemosus*, Marnock,

is from the same source as the *Botanical Register* figure above cited is clear from the remarks made under each. So that *Cytisus racemosus* of gardens appears to be derived from the wild Canary Island plant, its present altered appearance being due to continued selection of the most compact forms for cultivation. If this view be the correct one it would add yet another instance of plants long cultivated in gardens becoming, by a process of selection, so different from their wild originals as to be almost unrecognisable, unless some record of their history be preserved. *R. A. Rolfe.*

ORCHID COLLECTING.

EARLY in 1887 I was up the Irrawaddy on a collecting tour, but more particularly in search of a certain *Dendrobium* which a short time previously had caused a great sensation at home, plants in flower having sold for upwards of sixty guineas each—a wonderful price for an Indian Orchid, though small compared with what some South American species have since realized.

I was staying at a place many miles beyond our frontier, and had determined to remain a few days, as the place was teeming with Orchids. My interpreter succeeded in inducing the head man of the village to come and see me. When he was informed what my business was he seemed considerably astonished; he could not understand what the white man (the first he had ever seen) could want with what he termed "jungle plants." I endeavoured to explain that they were to be sent across the *Kali pani* (ocean), but this was too much for him to take in. I was either humbugging him, or—what was far worse in his eyes—a fool. It took us not only an hour's continuous palavering, but also two or three brass utensils as presents, before I could propitiate his highness. At last I produced my book of drawings, and was careful to first show him the most common kinds, which I knew were to be had in abundance, and then gradually led him on to what I more particularly required, reserving my plate of *Dendrobium* till the last. He recognised many of the others I had shown him, and gave me their vernacular names, and it was an anxious moment for me when I turned up my trump card. Did he know it, or was I again to be disappointed?—for that unfortunate plate had been through the hands of perhaps fifty men of his class without being recognised. My anxiety may be imagined when I state that we had got as far up the river as was safe to venture in these days. The old man looked at it carefully first, shook his head, then a brilliant idea seemed to strike him—had I ever seen the plant in flower myself? Yes. Was the plate exactly the right colour? I looked at it carefully, and at first replied in the affirmative, but, on second thought, I recollected that one of the colours had been rather overdone—a purplish-crimson had been given where a deep pink or rosy-crimson would have been nearer the mark. This was explained to my old friend, showing him from another plate the proper tint. There was no longer any hesitation, he knew it well, and it was plentiful enough, and so it had been for the last thirty or forty miles of my journey. Then why had none of the other men recognised it? Simply because the plate I carried was wrongly coloured. I had wandered through miles of forest myself, and lived in a miserable country boat for upwards of three weeks without any return simply for this reason; and so it is with many of the plates published.

Well, the following morning my old friend returned, bringing upwards of a hundred plants of the true *Simon Pure*. And now to strike a bargain—often not a very easy matter with natives. Money was of no use, for at that time these men did not know its value. I produced a lot of brass utensils, cloths, and other articles that I brought for the purpose of barter, and he set to making his selection from them. In the midst of this laborious task his eye happened to fall on an empty beer bottle. Here was a prize indeed! I noticed the old man's action, and knew at once that he really meant business: he

examined it carefully, and seemed satisfied with the result. Would I give him this in exchange for the plant? Oh no, it was far too valuable. Well, what did I want, then? Simply another hundred plants as good as he had already brought. After a slight demur he consented, starting off at once to bring them in. During his absence several other men came in from his village; as soon as they saw the kind I was most anxious for, and the price for which their head man had bargained, every man started at once to collect them. Here was a good thing certainly; but where were all the bottles to pay for them? The first thing to do was to overhaul my stores. I found I had only thirty-three bottles of beer left. There was nothing to be done but draw the corks and empty their contents into the river. By the following evening every bottle had been bartered away, and still more plants were coming in. I showed every article that I had brought for the purpose of trade, but it was of no use—bottles, and nothing but bottles, would they have. Well, I had still seven bottles of whiskey left; there was nothing to be done but sacrifice the precious fluid, and make the best bargaining I could. Here was something new for them, being of white glass, and of course I dilated on their superiority, and they evidently thought so. One enterprising spirit commenced by offering 300 plants for a bottle; this was quickly followed by 350 and at last came a plucky offer of 400. Had I stuck out, I might have got even a better figure, but I knocked the lot down at the price, and the rest were taken up at the same rate. This was probably the first public auction ever held in the kingdom of Ava, now a dependency of the British Crown.

With the assistance of the natives it did not take us long to pack all my purchases into the boat, and being a beautiful moonlight night we started down the river at once. I cannot say that the voyage was a very pleasant one. Being a forced adherent to the Temperance League is anything but agreeable, especially on a river teeming with floating animal and vegetable matter. In due course we arrived in Rangoon without any mishap, and with probably the cheapest cargo ever landed. This is how one of the first shipments of *Dendrobium* were collected and paid for. I have often been up the same river since, and landed at the same spot, where my old friends are glad to greet me—but bottles will not go down with them now. They know the value of our silver currency well enough, and can drive as hard a bargain as any nation I know. *Cook's Universal Tourist Budget, ex Indian Agriculturist.*

OSTROWSKYA MAGNIFICA.

DR. REGEL did well when he spoke of this as a wonderful Campanulaceous plant. It was collected by Dr. Regel's adventurous son on the high mountains of Chanat Darwas, in Eastern Bokhara, and was described by Dr. Regel himself in a publication not likely to be very accessible to the majority of our readers.* The plant was exhibited by Messrs. James Veitch & Sons from their nursery at Combe Wood on Tuesday last week, and constituted the most striking feature of the remarkable exhibition of the Royal Horticultural Society on that day. It obtained a First-class Certificate from the Floral Committee, but in the case of an entirely new plant of this excellence a Botanical Certificate would surely have been the more appropriate award. This, however, is a matter of relatively little consequence. The plant amply deserved any award.

It is a hardy perennial with tuberous roots. As shown the stem is about 3 feet in height, green, sprinkled with small red spots, with four-leaved whorls at intervals. The leaves are glabrous, rather fleshy, shortly stalked, oblong acute, coarsely toothed. The inflorescence is cymose, the flowers

on long stalks, at first pendulous, afterwards nearly erect; when fully expanded they measure $5\frac{1}{2}$ inches in diameter. The sepals are linear-lanceolate, without appendages at the base, shorter than the bell-shaped, pale lilac, eight-lobed corolla, the veins being of a darker bluish-lilac colour. The eight filaments are dilated at the base, the style beset with collecting hairs, and the inferior ovary deeply furrowed.

The plant, despite a paleness of colour in the flower, is certainly one of the finest herbaceous plants ever introduced, and as there can be no doubt as to its hardiness, and little if any as to its adapting itself readily to cultivation, it is sure to become a popular favourite.

NAMED GLOXINIAS.

AT Messrs. J. Veitch & Sons' nursery recently I noted the following new hybrids, which are certainly improvements on older ones:—Ivanhoe, purple, white centre, purple spotted—the flowers have a margin of bluish-white; The Moor, deep rich purple; Rajah, bluish-purple—large, well formed; Celia, purple-white, throat, spotted purple; Jubilee, whitish ground, spotted purple, with a margin free from spots; Cygnet, white, lilac margin, large open mouth; Virginalis, the best pure white flowers—very large and of handsome form; Delicata, peculiarly feathered red, margin white, flowers of fine form; Irma, scarlet, white throat; Orestes, well formed flowers, of a crimson colour, the margin paler; Cordelia, large flowers, white, very densely spotted; Comet, bright crimson-scarlet; Sunbeam, light scarlet, whitish throat. The above gives an excellent variety of colour, and as *Gloxinias* can be easily propagated a stock of them is soon got up. The entire leaves or portions of the leaves inserted in sandy soil will form roots. The cutting pots should be placed in a warm house, and to prevent the leaves flagging too much they are better for being covered with bell-glasses, to be kept close at first, and when it is seen that the leaves are established, a small amount of air may be admitted, gradually increasing the quantity until the glasses may be removed altogether. The sandy soil dries rapidly, and care must be taken to keep it of an uniform degree of moisture, especially first. Small tubers will form at the base of the leaves, and as the leaves, or portions of them, decay, water should be withheld gradually, until they are quite decayed, when it becomes no longer necessary. The tubers will keep well in the dried sandy soil, until it is time to shake them out early or late the following season, according to the time they are required to flower; or a succession may be obtained by their being potted early or late. They are to be seen in their best condition during the months of May and June.

Many persons have an idea that the stronger these and allied plants can be grown the better it is for them, and to that end they set the tubers in very rich soil, whose richness is afterwards supplemented by doses of manure-water frequently applied; but this is certainly an error in culture, and may promote a disease which causes black streaks to appear in the leaves that checks growth. They will make a clean healthy growth in a compost of three-parts fibrous loam, one of light fibrous peat, one of leaf-mould, and one of dried cow-manure, adding sufficient clean, sharp sand to keep the compost open. Each tuber may be potted separately in a small pot; to be repotted again when the plant has grown sufficiently to fill the space with roots. It must be well borne in mind that the plants are not only checked but severely injured if they are allowed to become too dry at the roots. The leaves suffer from the attacks of thrips more than those of any other plant, and generally make their appearance after the plants have suffered a check. I never syringe the leaves, and they seldom suffer from insect pests when grown in the genial atmosphere of a medium hothouse. When the plants are well in flower they may be put into a greenhouse or cool conservatory, where they will stand for a long time in good condition. Those who do not care to grow

* *Ostrowskya magnifica*, Regel, nov. genus et nov. spec., in *Descript. Plant. Nov. et Minus Cognitarum*, fasc. ix., St. Petersburg, 1884; *Gartenflora*, 1885, p. 125 and 1887, p. 639; *Haage & Schmidt, Catalogue*, 1887, ic. parod et pessima.



FIG. 6. *OSTROWSKIA MAGNIFICA*: A GIANT HARDY BELL-FLOWER. COLOUR LILAC-GRAY. (SEE P. 64.)

named varieties, can obtain seeds and raise their own plants; and if the seeds are sown early in the year, pretty flowering plants can be obtained by the usual time of flowering in summer. They merely require to be pricked out from the seed-pots or pans and shifted as they increase in size. *J. Douglas.*

THE ALPINE GARDEN.

PRIMULA AURICULATA.

A CHARMING Primrose for the open air, where we have found it perfectly hardy, forming pretty healthy tufts, and giving no trouble beyond the necessary occasional watering during hot weather. It was received from the Continent over a century ago under the name of *P. longifolia*, and figured as such in the *Bot. Mag.*, t. 392. In habit as well as appearance it bears a great affinity to *P. farinosa*; the leaves are, however, broader, devoid of farina, the flowers, if anything, larger, and rosy-purple. While *P. farinosa* is found rather difficult to keep in the open air, especially in foggy districts, unless pot culture be resorted to, *P. auriculata* will be found a true perennial, steadily increasing, and never failing with abundance of its charming flower-heads, collected in ball-like clusters. It ripens seed freely, but they do not keep long and should be sown as soon as they are gathered. Native of the Caucasus, flowering April and May. *D.*

HOUSTONIA CERULEA ALBA.

Few plants, amongst the dwarfer of the alpine at least, afford so much pleasure to the cultivator as the one named above. Where a little shade can be given, either on an east or north exposure, we find the *Houstonia* perfectly at home, flowering so profusely as to injure itself. Indeed, although a native of the warmer parts of North America, it goes through our winters uninjured, unless too much weakened by the cause given above. The type with bluish flowers is, I believe, in cultivation, but in the possession of very few growers, so far as I know—it seems, indeed, to be as scarce as the variety *alba* is plentiful. It is just possible that the typical form changes colour with cultivation in our gardens, and if this be so it will easily explain its scarcity. According to the *Hortus Kewensis* it was introduced to this country over a century ago by Archibald Menzies, and figured in the *Bot. Mag.* of 1797, in the second volume, t. 370. It may be propagated either by cuttings or division, the latter being the quickest, as the divisions form tufty little plants the following spring, flowering all the summer. *D.*

TOMATOS AT CHISWICK.

THE old-Rose house in the Royal Horticultural Society's Garden is this season given up to the cultivation of Tomatos, and will be one of the attractions of the garden during the latter part of the season, when the plants will be in full fruiting state.

We learn that, on the average, the yearly consumption of Tomatos by the Londoner is about 57 lb. 4 oz., that of the Parisian being only 17 lb. 2 oz.; so that we may justly call this a popular vegetable in London.

As the collection under notice contains a large number of varieties, it should be a very interesting one, and a few notes upon them may prove of service to our readers. The Rose-house is a light, airy structure, of about 100 feet in length by 30 feet in width, and contains some 450 plants, planted out in four borders—two on each side of the central walk. The plants are grown with single stems, and trained to stakes about 6 feet in height. The seed was sown early in March, the planting-out taking place about the middle of April. Ordinary garden soil is that used. A capital set of fruit has been obtained, and the plants are in vigorous health.

Amongst all the sorts bearing the name of

Perfection there is a great family resemblance, and of this most useful kind, producing smooth, solid, scarlet-coloured fruits, there are some 250 plants in the collection—a sufficient evidence of the popularity of this particular type. Haw Green Favourite, certificated last year, is a variety worthy of note, being much esteemed at Chiswick.

Horsford's Prelude, another good thing, is an American introduction, and will be appreciated by those who like a somewhat small Tomato. It produces its beautiful deep scarlet fruits in clusters, sometimes numbering as many as eighteen fruits, and bearing to within 6 inches of the ground. The plants are characterised by a stocky and compact habit. Early Scarlet Tennis Ball is a round Plum-shaped fruit, which is produced in clusters—a very free setter; a good sort to cultivate where quantity is a desideratum. Laxton's Open-air, a good early variety and a free setter; and that good-all-round variety, Hathaway's Excelsior, also find a place in the collection. Golden Queen is a very fine yellow-skinned variety, certificated by the Royal Horticultural Committee two years ago.

In a lean-to house adjoining is a collection of about fifty varieties, grown in 12-inch and 16-inch pots, and containing some of the newer sorts, which promise well. In this house we noted some capital examples of the Currant Tomato. What a beautiful decorative subject, when ripe, with its racemes of diminutive fruits! *X.*

SCOTLAND.

CATHCART NURSERIES.

ABOUT ten minutes' walk in an easterly direction from Cathcart Station, on a considerable elevation, lie the new nurseries of Messrs. Austin & McAslan, nurseryman and seedsmen, 16, Buchanan Street, Glasgow. These nurseries, in extent about 40 acres, have been only three years broken in from farm land, and are already fully stocked with forest and ornamental trees and shrubs and fruit trees in variety: Rhododendrons are a specialty. The stocks of every sort outdoors are in capital health, the soil being good, and the atmosphere pure. A very commodious and handsome suite of offices, with dwelling-houses for the leading servants, and a fine block of plant-houses and frames, have been erected within the past twelve months. The houses are well stocked with stove and greenhouse plants, florists' flowers and Orchids, the latter chiefly Odontoglossums, all in excellent health and condition. The houses themselves are thoroughly substantial, yet light and elegant in style, models of what plant-houses should be. A very complete collection of hybrid greenhouse Rhododendrons occupies a considerable space in one of the houses, and appears to be making ground rapidly in public favour in the West of Scotland. Altogether there is a pleasing air of substance and thrift about the whole establishment that is cheering to note in an old firm in these days of general change and collapse in the trade. The career of the firm dates from 1717.

AIKENHEAD.

This, the seat of John Gordon, Esq., is situate about a quarter of an hour's walk from Cathcart Station, which is distant about four miles from Central Station, Glasgow. Lying to the south of the city, in a rural district, the park, which is of moderate extent, is furnished with well-grown plantations and handsome specimens of ornamental deciduous trees in fine health. Rhododendrons are a special feature in the kept grounds. They are not only objects of interest to Mr. Gordon, but are found to be the best hardy shrubs that can be planted in the neighbourhood. The collection, always a good one, has been much increased within the last seven or eight years. The winters of 1879 and 1880 revealed conclusively in this district that the whole Laurel tribe, and most other evergreens, were not proof against such arctic frosts as occurred

in those seasons. Masses of Laurels of great size and density were killed at that time, and have been replaced by masses of Rhododendrons of the best hybrid sorts. Our visit was made at the time they were in flower, and amongst the hundreds of plants blooming abundantly were such brilliant and familiar sorts as Michael, John, and Mrs. John Waterer, Lady Eleanor Cathcart, Everestianum, and many others.

The flower-gardening features include pretty nearly every style, from the ordinary types of bedding to carpet-bedding and picturesque beds, the latter being done with hardy shrubs of contrasting colours and habit, which have an excellent effect in combination with the surrounding flower-beds. Hardy plants of the herbaceous kinds receive a considerable share of the attention of Mr. Hogg, the intelligent and capable gardener.

In the kitchen garden borders were to be seen masses of *Orchis foliosa* and *O. maculata superba*, 2 feet or more in diameter, composed of dozens of plants throwing up their flowers most vigorously. In a snug corner by the door of one of the houses was a group composed of *Cypripedium pubescens* and *C. spectabile*, along with *Tropæolum polyphyllum* and the rare *Lychnis chalcidonica alba*. These already mentioned, along with beds of purple and old Double White Rockets—both the Scotch and French forms of the latter being equally well attended to—will suffice to indicate the opinion of Mr. Hogg as to what really good hardy herbaceous plants are.

The walls of the kitchen garden are well clothed with fruit trees. Plums are plentiful, so also are Cherries, but Apples are scarce, and Pears almost *nil*, owing to late frosts. Peaches on the open south wall are well set, and the trees healthy.

The kitchen-garden contains a long range of rather old-fashioned lean-to fruit-houses, well stocked with Vines and Peach trees bearing good crops. From the centre of this range there extend two roomy span-roofed modern plant-houses, one of which is devoted to Ericas of the hard-wooded class, to *Azalea indica*, and to New Holland plants now-a-days so rarely seen, even in large establishments. Here they are done well, and Mr. Hogg, it may be remarked, has won many laurels at the shows in the West of Scotland with this class of plants.

To Orchids there are four or five houses devoted. The collection is young, but in capital health, and contains choice species and varieties of all the popular genera. Some fine forms of *Cattleya Mossiae*, a remarkable variety of *Miltonia Roezlii*, with an enormously broad and long lip, almost pure white; several well-flowered specimens of *Vanda suavis*; *Odontoglossum citrosimum*, and several *Cypripediums*, were the chief of those in flower at the time of our visit. *W. S.*

CABBAGE COMPETITION.

We learn from the *Kelso Mail* of July 11 that Messrs. Stuart & Mein, seedsmen, Kelso, encouraged by the great success attending the Cabbage Competition which they inaugurated last year, determined to hold a similar competition this season, and accordingly Friday, July 6, was the date fixed for the exhibition. Last year, with a view to demonstrating the superiority of Mein's No. 1 Cabbage as an early variety, the firm offered a premium of £5 for the best pair of hearts grown from seed directly supplied by them, the date of exhibition being in May. On that occasion the prize was won by Mr. D. Inglis, Howick Hall, Northumberland, with two fine Cabbages weighing 8½ lb. This year a premium of £5 was again held out, Messrs. Stuart & Mein being desirous of now showing that their Cabbage was also the best late variety, standing longest without bursting; and hence the reason for the show being held much later than last year. As indicating the widespread interest manifested in the competition, it may be mentioned that no fewer than ninety-one pairs of hearts were sent in from all parts of Great Britain and Ireland. There was a large consignment from the Southern and Western Counties of England;

Lincolnshire and Nottinghamshire in the Midlands also made a good appearance, while Scotch exhibits were received from as far north as Forres. Three lots were also forwarded from Parson's Town, Longford, and Ballymeana in the North of Ireland. The bulk of the lots sent were well matured and generally in good condition, and a number of them were remarkably heavy. The judges were Mr. Waite, nurseryman, Berwick-on-Tweed, and Mr. Elphick, of Messrs. Hurst & Son, seed merchants, London. After going carefully through all the exhibits, they selected a number of the best specimens, and eventually three pairs were set apart, consigned by Mr. W. H. Divers, Ketton Hall, Stamford, Lincolnshire; Mr. James Lockie, Heatherslaw, Cornhill-on-Tweed; and Mr. Feddon, gardener, Scotby, Carlisle. After considering the respective merits of the lot, the judges awarded the premium to Mr. Divers for a pair of hearts of fine form and quality. Originally they weighed 8½ lb. and 6½ lb. each, but when divested of their outer leaves, in which manner they were judged, they together scaled 9 lb. Mr. Divers, who enjoys a high reputation as a grower of Cabbages (having gained great experience in vegetable culture while for many years foreman to Mr. Gilbert, of Burghley), when forwarding his exhibits, wrote as follows to Messrs. Stuart & Mein:—"I can honestly say your Cabbage is the best early one I ever met with, and I am acquainted with all the leading varieties." The hearts shown by Mr. Lockie and Mr. Feddon were also of a meritorious description, but neither in form, compactness, nor quality, were they equal to the first pair. Among the heavier of the Cabbages shown were two sent by Mr. E. Rilestone, Truro, Cornwall, which weighed 28 lb., and other two pairs scaled 22 lb. and 20 lb. respectively. Such a competition as the one under notice is singularly fitted to bring forward valuable data as to the adaptability of the particular variety of Cabbage represented to the varying climate and soil of these islands.

FLORISTS' FLOWERS.

THE CARNATION AND PICOTEE.

THE Carnation usually comes into bloom out-of-doors about the third week in July, but if we may judge by the appearance of the plants now, it will be August before we shall have much bloom. Those who grow plants in pots can place them in a glass-house, and if well exposed to the light they will be earlier in bloom. When warm dry weather sets in, and the colour of the flower begins to show at the mouth of the calyx, the flowers are likely to be attacked by thrips—at any rate, those which are in pots—and that will sometimes spoil them by robbing the colour of the flower, the flakes and bizzares suffering most. When the plants are standing in a house fumigation with tobacco-smoke will destroy the insects, and there need be no hesitation in adopting this measure, even when the flowers are fully expanded. It is needless to say that propagation by layering is preferable, but any scarce variety may also be propagated by cuttings—"pipings" as they are termed by the fanciers. The smaller growths are the best for this purpose, and those a little distance up the stems, that cannot be brought down sufficiently low to be layered. These pipings should be planted firmly in pots of light sandy soil, and they must also be covered with bell-glasses, or very close handlights, to exclude air from them, else they will dry up instead of rooting. The glasses should be taken off daily, or at least on alternate days, and the condensed moisture removed with a cloth, replacing them at once.

Seedlings may also be planted out, if the ground be ready for them, and they are large enough. As the beds of last year's seedlings come into bloom, the plants should be examined carefully, and those flowers which are likely to be valuable marked to be grown again. It is one of the most interesting incidents in the life of the florist to watch the

expanding of the blooms on the seedling plants. There are always plenty of blanks, even in the best of seasons, and prizes few; but if care has been taken in the saving of the seeds, some good and distinct varieties will certainly be found amongst them.

THE AURICULA, &c.

The seeds have mostly been gathered from the plants that were set aside to save seeds from, and this week the whole of the plants will be repotted. Some of the large plants were not repotted last year until the end of August, and this period we found was too late. They did not form roots freely, and as a consequence, the trusses produced the following spring were not so strong, nor were the flowers so well developed. It is during the period between the time of flowering and that of ripening the seeds that the *Auricula aphid* makes most havoc amongst roots; not that it does any appreciable harm, but one cannot think it is good management to leave it alone. I like to clear it off the roots entirely, and for that purpose all the soil is shaken off, by working it off with one hand, while the plant is held in the other, and its roots in a pail of water. The roots are then dipped in soft-soapy water, and the plant laid out to dry for an hour, and then dipped in clean rain-water to remove the soap. If greenfly be found on the leaves, the whole plant is dipped into the soapy water. We are careful not to over-pot the plants at this late period. A plant that we would unhesitatingly place in a 48 in the spring would now be more likely to do well in a large 60.

Offsets of last year repotted in May should now have a shift into larger-sized pots, the last shift of the season. Those who have sowed seeds should sow them at once in pots or pans, placing them in hand-lights in a partially shaded place. Seedling plants should also be potted, so that they may produce flowering plants for next year.

The plants succeed best at this time of the year in frames placed in a northern aspect behind a fence, hedge, or walk. The lights are always removed night and day, except during heavy rains, or when such are expected at night. Alpine Auriculas and the whole of the hardy perennial family require much the same treatment at this season, except that they do well with more exposure. The whole of our collection of these plants is fully exposed to the north and east winds, and they do much better in that way than when sheltered by trees, hedges, or walls. They are not repotted yet, but will be seen to as soon as we can find time to attend to them. I may remark that the *Auricula aphid* is very partial to the smaller species of alpine Primulas, and when it once gets into a tuft of, say, *P. minima* it becomes almost an impossibility to get it out from among fibrous roots. The alpine Primulas and Auriculas on elevated parts of the rock garden have succeeded admirably this year, and have been greatly improved by a rich surface-dressing where the roots were exposed. *J. Douglas.*

ALEURITES MOLUCCANA.

IN a report on the trade of Tonga, Vice-Consul Symonds says I have called the attention of merchants to the very large quantity of Candle-nut trees that flourish on these islands (*Aleurites moluccana*), the fruit of which is allowed to rot on the ground. Many years ago the German firm of Godeffroi exported over 1000 tons of Candle-nuts in the shell, but on the arrival of the cargoes in Europe they were found to be useless, from the fact that the natives had collected all the nuts under the trees, and thus the majority were several years old and contained no kernel.

An analysis of this nut that I have received is as follows:—Oil, 62.180 per cent.; water, 5.000 do.; nitrogenous substances, 22.653 do.; mineral matter, &c., 10.167 do.

With proper management over 200 tons of this nut could be bought annually from the natives. A few local traders have interested themselves in this

industry, and, at their request, I have asked for information relative thereto from the Consul-General at the Sandwich Islands, whence, I believe, Candle-nut oil is exported in large quantities.

The Candle-nut is very largely grown in the Moluccas and most of the islands of the Indian Archipelago, Malay Islands, Cochin China, as well as in Lower Bengal and other parts of India, West Indies, Mauritius, &c. In countries where the tree is common the oily kernels are eaten after being roasted, the flavour, it is said, being similar to that of the Walnut or Almond. It has been suggested that the seeds would form a valuable ingredient in cattle food if they could be deprived of their purgative properties. Candle-nuts of the value of £700 were exported from Tahiti, in 1875, while in 1876 and 1877 the value of the nuts sent to London from Levuka, Fiji, amounted to £1562 and £3040 respectively.

BOOK NOTICE.

REPORT OF OBSERVATIONS ON INJURIOUS INSECTS. By Eleanor A. Ormerod, F.R. Met. Soc., &c. London: Simpkin, Marshall & Co., 1888.

The issue of Miss E. A. Ormerod's *Report of Observations on Injurious Insects and Common Farm Pests* for the year 1887 has appeared, and forms a bulky pamphlet of 130 pages. In her preface Miss Ormerod says that the season of 1887 was marked by prolonged heat and drought which was accompanied "by an unusual amount of presence of various kinds of crop-insects, and also by unusual amount of damage from them." A considerable advance was made during the year in lessening the amount of insect attack and in increasing the knowledge of the habits of the insects and of the methods of treatment available. These reports have become so important to market-gardeners and farmers that their advent each year is looked forward to with interest by the most intelligent of our growers of vegetable crops. The subjects treated of in the present report, by Miss Ormerod, comprise Clover sickness, caused by eel-worms, frit-fly (*Oscinis frit*, L.), on Corn, the Hessian-fly (*Cecidomyia destructor*). To this subject, as might be supposed, a great deal of consideration is given. Several other Corn pests are fully discussed. The black Currant gall-mite (*Phytoptus ribis*) is stated to have been very troublesome in many localities. As an experiment in preventing the spread of this pest Miss Ormerod says:—"It does not appear that this *Phytoptus* or gall-mite attacks red or white Currants; therefore (so far as we know) replacing the destroyed black Currant bushes with the other kinds would be of service. Likewise, as this attack spreads to such a serious extent where black Currant bushes are grown together in large areas, as in fruit farming, it might be worth consideration whether growing the different kinds in alternate rows or plots would not be desirable." The concluding articles in the report treat of the slug-worm, of Pear and Cherry sawfly, small Pine sawfly, and Turnip grub.

VEGETABLES.

CAULIFLOWER CARTER'S DEFIANCE EXTRA EARLY.

THANKS are due to your correspondent "J. H." for referring to late Broccolis (p. 47). If "J. H." possesses the above-named Cauliflower there will be no gap between the season of Broccolis and that of Cauliflowers—"J. H." having cut his last heads of Broccoli on June 21, and I cut my first Cauliflower on June 28. The Cauliflower seed was sown on February 8, 1888, in boxes placed on the hot-water pipes of ainery where the heat was mild, and when the plants were sufficiently strong they were pricked out in other boxes 2 to 3 inches apart, and left on the pipes for two days longer, so that rooting into

the fresh soil should take place. They were then taken to a frame where no heat was employed, and from thence to their place at the foot of a south wall, but allowing them to remain in the boxes till the weather was genial enough for planting. I have now several dozen fit to cut which measure fully 8 inches across the flower-heads. *G. H. Merton.*

CULTURAL MEMORANDUM.

STEPHANOTIS FLORIBUNDA.

PLANTS of this, the best of all stove climbing plants, which are growing in 12-inch pots, in a mixture of sound fibry loam and good peat, with a liberal sprinkling of sharp sand added, the pots standing on bricks placed flatwise on two bottom-heat pipes in the centre of a raised bed in a small stove here, and the shoots trained to a wire trellis about 4 feet wide, fixed the full length of the house underneath the apex, yield a bountiful supply of their deliciously-scented white flowers every summer and autumn. They have not been potted for several years, but the plants are top-dressed once or twice a week with Beeson's Manure before giving water at the roots. In addition to this frequent applications of weak manure-water are given at the roots weekly during the growing season. The plants so treated are, at the time I write, completely smothered with large clusters of well-developed flowers. All plants having a large spread of foliage and flowers to support, with the roots rather confined, should have liberal and frequent supplies of liquid and artificial manure given at the roots. The same advice is applicable to fruit trees growing in pots, tubs, and narrow borders. *H. W. Ward.*

THE VEGETABLE PRODUCTS OF MOGADOR.

CONSUL PAYTON, reporting on the products of Mogador, refers to the following as special articles of culture:—Hemp (*Cannabis sativa*)—which, it is well known, is largely grown for its narcotic properties, furnishing "hashish," prepared from the powdered leaves—has, it seems, received a material check, in consequence of its cultivation and sale, together with that of Tobacco and opium, being prohibited by the Sultan's edict early in 1887. The principal fruits cultivated are Figs, Dates, Grapes, Melons, Water Melons, which are grown among the Maize; Walnuts, Pomegranates, Lemons, Limes, Peaches, Apricots, Plums, Apples, Pears, and Prickly Pears (the fruits of the *Opuntia*), which form such admirable hedges for small enclosures. In the neighbourhood of Mogador the cochineal insect has been cultivated on this same Cactus, but its production has been on a very small scale, and with the low prices obtained by the cochineal growers of the neighbouring Canary Islands, may be regarded rather as an interesting experiment than as a remunerative trade. Of Figs, which are very abundant in many parts, the preparation is far too rough, the Figs being simply exposed to the sun on a cloth or skin, sometimes slightly salted. If properly pressed and boxed, as in Turkey, they might form an attractive article of export.

Any account of the vegetable resources of southern Morocco would be incomplete without some mention of the Argan tree (*Argania Sideroxylon*), large forests of which exist in the province of Haha, and some in Shiadma and Sood, but not generally spreading more than about 40 miles inland. It is a hard-wooded tree, with rough bark, very sharp spines, small leaves, and a fruit like a large hard yellow Olive, from the kernel of which is expressed an oil of peculiar flavour in very general use in the districts mentioned, both for cooking and lighting purposes, and which is exported coastwise in years of abundance. The fleshy part of the fruit also yields a nourishing food to cattle and goats, and to the numerous herds of wild boar which roam through

the Argan woods. Another valuable tree is the "Azar" (*Callitris quadrivalvis*), which yields a beautifully grained hard wood of a reddish-brown colour, much prized in cabinet making, and known to the ancient Romans as Citron or Thyme wood. The root of a little plant known as the "Terny" (*Arisarum vulgare*) affords a food to the rural population in times of famine. It is not very palatable or wholesome, but is nevertheless life-sustaining. The acrid juice which the roots contain has to be got rid of by much washing and trituration; and the edible product is the Truffle, a white variety—so abundant in years of good rainfall that after plentiful rains they can be bought for about a penny a pound; but these white Truffles, many of which are as large as good-sized Potatos, are far inferior in flavour to those of France.

FRUIT REGISTER.

STRAWBERRY THE CAPTAIN.

SOME fifty years ago Black's Seedling Strawberry was raised in Aberdeenshire, and imported into the South, where it was sent out as Black Prince. During all those years it has been our earliest Strawberry until Laxton some six years ago raised and sent out King of the Earlies and The Captain; the latter I have now no hesitation in saying is the best of the three, and is in every respect a first-class variety, with fine large fruit, of good flavour and a strong constitution. Every gardener knows that in a late season like the present there is often disappointment in the supply—the pot plants are over, and the outdoor varieties are not fit to pick: The Captain, when planted on a south border, forms, as it were, the connecting link between the indoor and outdoor supply. I have no experience of it as a forcing Strawberry, but should judge it would do well. Very often it happens that Strawberries are nearly as dear in the beginning and middle of June as early in the season, and I should recommend this variety to market growers. *J. Rust, Eridge Castle.*

A VIEW IN ST. JAMES'S PARK, LONDON.

[SEE SUPPLEMENTARY SHEET.]

THIS now picturesque Park was formerly a swampy waste, first enclosed and improved by Henry VIII., and put into its present form and much of it planted by Loudon about the year 1828. The land, always flat, was made dry by draining the surface-water into what is called the lake—a view of which is depicted in our Supplement to this week's number. The smooth character of most of the surface is not marred by any misappropriate mounds, and softness of outline is the prominent character of the scenery within the boundary of the Park, which is the more effective by reason of its contrast with the lines of the public and private buildings all around.

The southern and western side of the lake is much masked by plantations of trees of moderate height, chiefly exotic species of Poplar, Willow, and other water-loving subjects, and fine specimens of Planes and common Elm abound, as well as symmetrical shaped Thorns of large size. These trees, so valuable as living specimens to the botanist and tree planter, cannot be said to be in vigorous health—a state of things due, doubtless, in part to unhealthy surroundings.

Owing to the groups of trees being situated on the western and southern sides of the water, there is a considerable amount of shadow thrown on the water, but then there are other stretches of the lake where the sun has free play, so that the monotony of a continuously shaded surface is avoided, and a pleasing contrast afforded. The lake abounds with water-fowl, which find quiet nesting places and haunts in the bouquets of shrubs and plantations that run down to the water's edge. Not many flowers are grown in the Park, in beds set apart for

them, but considerable quantities of bedding plants and hardy herbaceous subjects are employed as margins to beds and groups of shrubs.

PLANTS AND THEIR CULTURE.

WINTER-FLOWERING PLANTS.—These should now receive encouragement, it being only when this is given, and a well-matured growth obtained, that the best results may be looked for. Late struck Libonias will require close attention, and whether they be planted out in frames or grown in pots, it is important that they should not suffer any check. If it be intended to pot them again, this should be performed as soon as the roots fairly occupy the old soil, and pots from 4 to 7 inches will be found sufficiently large for the young stock, putting older plants in other suitable sizes. For soil use turfy loam, with a small quantity of peat or leaf soil, and plenty of sharp sand with some well-decayed and pulverised manure. After shifting, it will be necessary, if the weather be sunny, to shade slightly for a few days, but this should be discontinued as soon as possible. Cool frames which can be shut up early in the afternoon suit them admirably.

Scriogaphis Ghiesbreghtiana and *Peristrophe (Justicia) speciosa*.—These plants will also succeed during the summer, under the same treatment as the Libonias, but as they are not quite so hardy, the frame must have a light and sheltered position, and it is well if there are means of raising the temperature during dull, cool weather. To get well furnished bushy plants, the shoots must be frequently stopped, and if the stock of *Peristrophe* be short, there is yet plenty of time to raise good plants before the winter, provided cuttings are put in now. The rich purple flowers of this plant are always very telling when associated with other winter-flowering subjects, but the plants are rather apt to get infested with thrips and red-spider, however, with due attention to syringing them regularly, these insects may be kept in check.

Poinsettias.—The present is a good time to put in cuttings of this plant, and plenty of these can now be obtained from the old stock plants. In choosing the cuttings only those which are vigorous should be taken; the weak ones are better if left on the old plants until they have grown large. By so doing much greater progress will be made than by employing the small shoots, and moreover successional plants are valuable in prolonging the flowering season. *Poinsettias* strike readily if a genial moist atmosphere and a mild bottom-heat can be afforded them; and an ordinary dung bed frame is a very appropriate place, as the constant humidity arising from the fermenting materials will, with care in shading, generally be found sufficient to keep the cuttings from flagging without having to use much water, but flagging must in any case be guarded against, as it weakens them very much. If the cuttings are very soft I have sometimes found it of advantage to immerse them in water for about an hour before putting them in. This has the effect of making them stand up better during the operation of potting. Insert the cuttings singly in small pots with one good crock for drainage, and use a light sandy compost; care should be exercised not to bruise the cuttings. I find less damage from this cause if I simply fill the pots with the soil loosely, rather heaped up, so that when pressed down there will be just enough of it to easily fill the pot. The cuttings must be inserted before the soil is pressed down; and it is as well to put a pinch of sharp sand in the centre of the pot for the base of the cutting to rest on. When thus put in the whole mass of soil gently presses round the cutting, but not so much so as to bruise it, and the porosity of the soil is greater than when a dibber is used. If all go well they will be rooted in a few weeks, and should then be potted, employing a rich friable compost for the purpose. Six-inch pots are a useful size, but size of pot depends on requirements. After potting, shade slightly for a few days, gradually discontinuing it until they can stand full exposure. An airy place, with a temperature of 60° and 70°, suits best, for when grown in one that is hot and moist, flabby leaves are developed, which are difficult to retain on the plants. In all stages of growth keep them as near the glass as possible. *F. Ross, Pendell Court.*

THE FLOWER GARDEN.

VIOLETS.—The Neapolitans and the Russian varieties that were planted out in prepared borders a few weeks ago for flowering in frames in the winter, should be examined, cutting off all runners as fast as they appear, so as to get strong plants for lifting early in October. This point is one of much importance where quality as well as quantity of blooms is required. Stir frequently the surface soil between the plants, keep them free from weeds, and in all cases where the foliage is not of a satisfactory colour apply a light dressing of some artificial manure.

Antirrhinum and Pentstemons.—Put in cuttings of all named and any choice unnamed varieties that it is desired to perpetuate. For this purpose use a compost consisting of finely sifted loam, leaf-mould and silver-sand, and choose shoots about 3 inches long, and in a half-ripened state. Remove the bottom leaves and cut just below a joint. The pots, 4 to 5 inches, should be well drained, and after watering the cuttings they should be placed in a frame and kept shaded from bright sunshine till rooted, syringing overhead, occasionally. Pentstemons may also be propagated under handlights on a north border. Florists' varieties of *Phlox acuminata* may also be treated in the same manner. After the cuttings are rooted put the pots in a position where they will get plenty of sun and air, so as to obtain sturdy plants for standing through the winter.

Subtropical Plants.—Soft-wooded subjects raised from seed the current season must have the leading stems tied to stout stakes, *Ricinus*, *Nicotiana*, many of the *Solanums*, and *Cannabis gigantea* being amongst those that will bear no neglect in this respect. Do not make the ties too tight, and see that the lower ones are not cutting into the stems. The last-named species, if planted in groups, will need a certain amount of thinning out, and the strongest side shoots stopping occasionally—i.e., if growing in small beds, and the soil is covered with *Alternantheras*, *Mesembryanthemums*, or other very dwarf plants.

Hollyhocks.—Put in cuttings of these, choosing side shoots with a heel, and not too long. Use clean pots, with plenty of drainage and a sandy compost, containing some finely-sifted leaf-mould; press down moderately firmly, insert the cuttings round the sides of the pots, and place them in a frame where they can have the assistance of a gentle bottom-heat; the cuttings must be well shaded till rooted, after which pot off singly and harden in due course. Care must be taken to avoid too much moisture until it is seen that they have taken root, for being of a soft nature they soon damp off in the frames. *J. Horsfield, Heytesbury.*

THE HARDY FRUIT GARDEN.

PEACHES AND NECTARINES.—Trees should now be looked over frequently, and the laterals kept persistently pinched-in on trees bearing full crops. Give the fruit light and air by fastening the foliage on one side, and if a few leaves are removed altogether it will do no harm, provided the trees are perfectly healthy and will not feel the loss of them. Trees carrying heavy crops should be assisted by an occasional sprinkling of guano on the borders just before rain.

Apricots.—The fruit is now swelling fast, and the trees should be looked over frequently to see that none of the fruit gets spoilt by being squeezed against wall-nails; at the same time be careful not to expose them fully to the sun. Apricots ripen better and the fruit is finer when it is shaded by the foliage. Syringe the trees two or three times a week to keep in check insects of all kinds, some of which, notably woodlice, harbour in the rough bark of the stems and branches. The last-named depredators do a great amount of mischief to the fruit by gnawing it.

Thinning the Fruits of Apples and Pears.—The rain, which has fallen heavily in this district, and generally all over the country, has been of great assistance in swelling up the fruit, and in cleansing the trees of insects. Apples and Pears bearing heavy crops may now be thinned of superfluous fruits at once, and by so doing increase the size of the fruits, and also afford the trees a better chance of bearing the following year. When thinning, the depredations of birds should be taken into consideration, as likewise the character of the variety, and it may generally be said that a greater number

of a small variety may be left on a tree than would be the case were the fruits large. Push on with the summer pruning.

Layering Strawberries.—Opportunities have been afforded lately on wet days to get the pots filled with soil, so that they will now be in readiness. It is a recognised fact that layering of the plants in pots is the more preferable method, and if layered early, so that the plants get well established before winter sets in, they bear fairly well the first season. Of course runners lifted direct from the ground with a little soil attached to the roots and planted make good plants, but however well they may be attended to, they will not compare with plants that are layered in pots. It is a good plan to begin by partly plunging the pots in the ground between the rows, as this will help to save labour in watering. Select the strongest runners, and pinch off all growths beyond the young plants, and then either peg them to the soil or lay a stone on them to hold them in position till rooted. After the requisite number is layered, continually remove the runners which arise. The forced plants had better be planted at once, the ground being now in fine condition to receive them, and if the balls are soaked a few hours previous to planting, they will not require further watering; but with a view to save labour, should dry weather set in mulch between the rows with old Mushroom dung, or such-like material. The forced plants of *Vicomtesse Hericart de Thury* should be accorded a nice warm nook under a wall—one facing south would be best. They must be attended to, and well watered during dry weather, removing the runners as soon as they appear; they will then give excellent results in the autumn, when a dish of Strawberries is a luxury. *A. Ward, Stoke Edith Gardens, Hereford.*

FRUITS UNDER GLASS.

PEACHES.—The early houses from which the fruit has been cut should receive all the air possible and the inside borders a good watering every ten or fourteen days. Where any of the trees have not done satisfactorily, or have shown signs of decline, the present is a suitable time to examine the seat of mischief. Choose a cloudy day and cut out a trench to the depth of the border at about 6 feet from the stem, then, with a steel fork, proceed to prick out the soil from amongst the roots, using all possible caution not to damage any of the roots, clearing all the soil away as the work progresses. It may not be necessary to disturb the tree entirely, unless the soil be in a very soured, wet state, and in this case the whole of it should be removed. The drainage should be examined and put in order, no trouble being spared in a matter of this kind, but let the job be done thoroughly. When everything is ready for the reception of the new soil place a layer of turf, grassy side downwards, over the drainage, and then proceed to fill up with fresh compost. This should not be of too rich a nature, else gross growth is apt to be the result. Add a liberal quantity of charred soil and old mortar to the compost—the first to promote the development of fibry roots, the second to aid in building up the stone of the fruit. Fill up the border to within 8 inches of the desired level, and then proceed to lay out the roots which have been disturbed in proper form. Give them a good dusting over with Vine manure and fine soil (the larger proportion charred), and when a few inches of the ordinary compost have been placed over the roots a good watering with tepid water should be given. After this has drained away fill up to the level; shade the trees until it can be seen they are making fresh roots, giving heavy syringings thrice a day.

Succession Houses. Keep the atmosphere cool in houses where the fruit is ripe. See that the border does not become too dry, or the fruit will not hang so long as might be wished, but rather water if there be any danger of it being dry; maintain a dry warm atmosphere in houses where the fruit is ripening; and should the weather be dull and sunless, a little heat in the hot-water apparatus will promote high flavour and finish. See that trees in all stages of growth with crops swelling have sufficient water at the root; and if the trees should be old ones, assistance with weak guano-water should be afforded them. Attend to the tying in of the requisite amount of young shoots; pinch all laterals and strong shoots. Push aside the foliage from the fruit, so as to give the latter all the benefit of direct sunlight. *W. M. Baillie, Luton Hoo.*

THE KITCHEN GARDEN.

CABBAGES.—The earliest sowing should be got in between this date and August 12, the exact time will vary in different localities, and this can only be learnt from experience; but when removing to a fresh place it is well for the gardener to ascertain the practice of those residing in the district. I find August 4 about the best time here in the average of seasons, but as a general rule in late districts the seeds should be sown earlier, and the warmer ones later. It is well to make three sowings at intervals of ten days, and to sow the earliest crop in rows, so that a number of the best plants may be left to mature without being removed. By this means they are ready to cut much earlier in the spring, and are not so liable to run, they not suffering any check by removal. *Stuart & Mein's No. 1* is one of the best of the early varieties; it also stands longer without cracking than some others. *Ellam's Early* is also very useful for the first sowing; and as a main crop variety *Enfield Market* is excellent. Some seeds of *Red Dutch* should be sown with the second sowing.

French Beans.—A few of these should be sown now on a border where they can be covered with a frame in September, thus prolonging the season considerably. *Sir Joseph Paxton* and *Ne Plus Ultra* are good varieties. A few *Chelsea Gem* Peas may also be treated in the same way, and these will prolong the supply after the other varieties are killed by the frost. Both the Peas and Beans should be sown in rows 18 inches apart.

Chou de Burghey. sown as previously mentioned for the latest crop, will now be ready for planting out, and although perfectly hardy it is much assisted by a little extra warmth in February, it should therefore have a sheltered position in cold districts—a south border if possible—and be planted in rows 2 feet apart and 18 inches in the rows. Thus treated it will be fit to cut in February and March. It resembles young Cabbages, with the additional recommendation of being much better in flavour.

When lifting the early Potatoes enough roots should be left to come to maturity in order to get some good tubers for forcing next year, as large sets make a great difference in this crop, and it is often impossible to purchase them. I have found *Sharpe's Victor* very quick and useful as a first early outside, but it is not to be compared with the *Ashleaf* for quality. If a few old Potatoes of the late varieties are kept for a time on dry, airy shelves without growing much they will give a supply of new Potatoes at Christmas, if placed in layers of damp sawdust in a Mushroom-house early in September.

Herbs of most kinds will now be ready for drying. They should be cut when in flower and dried gradually by spreading them out in a cool and shady position, in order to retain their flavour, and afterwards tied in bunches and hung up in a similar position where they will be secure from dust, &c.

More seeds of *Endive* and some *Brown Cos* Lettuce should also be sown. *W. H. Divers, Ketton Hall, Stamford.*

PLANT PORTRAITS.

ANTHURUM SCHERZERIANUM VAR. *WAROQUEANUM*, *Illustration Horticole*, June, 1888, t. 51.

ASTER ALPINUS, *Gartenflora*, t. 1276.

CLEISOSTOMA CRASSIFOLIUM, *Lindenia*, t. 139.

CYLOGYNE CRISTATA and *C. C. VAR. LEMONIANA*, *L'Orchidophile*, July.

CYPRIPEDIUM CURTISII, *Lindenia*, t. 140.

HAKEA LAURINA, *Bulletino della R. Società Toscana di Orticoltura*, June, 1888.

ODONTOGLOSSUM CITROSIMUM VAR. *DEVANSAYANUM*, *Lindenia*, t. 137.

ODONTOGLOSSUM ROSSI MAJUS, *Revue de l'Horticulture Belge*, July.

ONCIDIUM PAPILLO VAR. *MAJUS*, *Lindenia*, t. 138.

TRICHOPIA LERMANI, *Gartenflora*, t. 1276 (2).

ZEPHYRANTHES GRANDIFLORA, *Illustration Horticole*, June, 1888, t. 49.

TRADE NOTICE.

We are requested to state that Mr. A. W. Crews, late manager of the Chad Valley Nurseries, has commenced business on his own account, at Gloucester, in conjunction with Mr. A. C. Cox, late of Messrs. Hugh Low & Co.'s nurseries.

Advertisers are specially requested to note, that, under no circumstances whatever, can any particular position in the paper be guaranteed for advertisements occupying less space than an entire column.

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W. RICHARDS, 41, Wellington Street, Strand, W.C.

GARDENERS' CHRONICLE OFFICE TELEGRAMS.

NOTICE to Correspondents, Advertisers, Subscribers and others. The Registered Address for Foreign and Inland Telegrams is
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Post-office Orders and Postal Orders should be made payable at the Post Office,
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APPOINTMENTS FOR THE ENSUING WEEK.

MEETING.

TUESDAY, JULY 24 { Royal Horticultural Society: Scientific, Fruit, and Floral Committees.

SHOWS.

TUESDAY, JULY 24 { Carnation and Picotee Society (Southern Section), in connection with the Royal Horticultural Society.
Tibshelf.

THURSDAY, JULY 26—Trentham.

SALES.

MONDAY, JULY 23 { Imported Orchids, at Protheroe & Morris' Rooms.

TUESDAY, JULY 24 { Second portion of the Downside Collection of Orchids, on the premises, at Leatherhead, by Messrs. Protheroe & Morris (four days).

The Gardeners' Orphan Fund.

THE heartiest congratulations are due to the gardeners of this country, and the warmest thanks of the community are due to the officers and committee of the Gardeners' Orphan Fund, on the occasion of the first annual meeting held on Friday last, July 13. Suggested by Mr. PENNY, Mr. CLAYTON, and one or two other gardeners, as an appropriate means of celebrating the Jubilee of HER MAJESTY, the idea was at once warmly taken up by the great body of gardeners, and zealously and efficiently worked out by the committee and the local secretaries.

Where every one who took part may fairly indulge in some complacency at the happy result already attained it is not necessary to specify individuals. The work has been done by the gardening community for a purpose than which nothing can be more meritorious, and the best return they can experience lies in the consciousness of real distress alleviated, real good achieved. No one, a twelvemonth ago, could have foreseen how admirably the gardeners would have pulled together, or could have dared to hope that at the very first election it was found possible to place on the list the whole of the available candidates, ten in number. What this means in the mitigation of sorrow and the relief of need may be readily imagined. What this means as an evidence of co-operation on the part of the gardeners is a subject of great and hopeful significance.

At the same time the sense of responsibility entailed must needs be deep, but if met in the same spirit with which it has been incurred, we do not think any anxiety may be felt in the

future. The gardeners and those connected with them have but to continue to put out their collective strength, and success in the future will grow in proportion to the needs of the case.

The report of the committee and the balance-sheet are probably in the hands of every reader of this journal, so that it is not necessary to reprint them here. The first annual meeting was well attended by the gardeners. The Chairman of the committee, Mr. G. DEAL—to whose business tact, unflagging industry, and genial manner, the Institution owes so much—commented on the report, and explained the several items on each side of the balance-sheet. He thanked all those who had lent a hand in the good work—and this may be said to include not only individuals but all the public bodies and institutions connected with horticulture, not forgetting the "Market Men" and the ever-popular Superintendent of the Royal Horticultural Society's Garden at Chiswick, who has acted as Honorary Secretary.

Mr. H. VEITCH commented on the fact that the accounts had been audited by a professional accountant, and expressed his satisfaction that the expenses of starting the Institution and making it widely known had been relatively very small. Needless to say, the report was received with acclamation.

Some formal business, such as the reorganisation of the Committee and the appointment of officers was then transacted, and after some discussion it was arranged, as we have already said, that not only the six selected but all ten of the candidates were placed on the list. The names of these fortunate recipients of the gardeners' bounty are as follows:—

Emily Mabel Hyde	...	...	245 votes.
Alfred Swanborough	...	...	171 "
Albert Lacey	...	...	166 "
Emily Smith	...	...	153 "
Ralph Joseph Gardiner	...	...	131 "
Victor Spyers	...	...	88 "
Albert Edward Best	...	...	80 "
William Samuel Stannard	...	...	75 "
Ethel Staples	...	...	29 "
George Smith	...	...	21 "

We may here interpolate that we have received letters from the friends of some of the candidates expressive of their gratitude to the subscribers.

After all this work was got through—and it was by no means light—the members had fairly earned their dinner.

And here another great success was achieved. The large room at the Cannon Street Hotel was filled mainly with gardeners and representatives of all departments of horticulture, about 200 sitting down to a dinner as remarkable for its success as for the happy innovations that were introduced into it. The guests were all in full sympathy with the objects of the Institution, and on the best of terms with each other. The catering was good, and reflected credit on the Manager, Mr. J. A. BERTHER, and the proceedings were enlivened by the singing of Miss MARIE BELVAL and some of her friends, who gave their services, and whose kindness was acknowledged by the presentation to each of the lady singers of a handsome bouquet.

The speeches formed another welcome variation from the ordinary pattern. Assuredly they were of a considerably higher and better type than ordinary after-dinner speeches, and show that some gardeners can use their tongue as well as they wield the pruning knife. Far from being conventional, wordy and discursive they were earnest, significant and straight to the point.

Sir JULIAN GOLDSMID once more proved what an excellent Chairman the Institution has secured,

and the whole affair was like a family party wherein each endeavours to be agreeable to each other and in which the prominent features were sympathy and good fellowship cheered by success and hallowed by the sense of rendering present help to the helpless, and by determination to continue steadfastly in the good work so auspiciously entered upon.

ROYAL HORTICULTURAL SOCIETY.—The next meeting in the Drill Hall, James Street, Westminster, will be held in conjunction with that of the National Carnation and Picotee Society on the 24th inst. The exhibits will also comprise Ferns, Selaginellas, Ivy and zonal Pelargoniums, &c.—A meeting of the Fruit and Vegetable Committee was held at Chiswick, on July 9. Present:—T. F. Rivers, Esq., in the chair; Messrs. Lee, Wright, Burnett, Willard, Howe, Smith, Crowley, Cheal, Saltmarsh, and Warren. The collection of autumn sown Cabbages, numbering forty, were inspected, First-class Certificates being awarded to Express, from Vilmorin & Co., an early selected form of the Early Etampes; and to Ellam's Dwarf Early (Veitch & Sons); Myatt's Early Market (Watkin's & Simpson); Early Rainham; Heartwell and Cocoa-nut were approved as good stocks. Strawberries were next inspected, and First-class Certificates awarded to King of the Earlies (Laxton), Noble (Laxton), Countess, and Lucas. Dr. Morère was approved as a large handsome sort, also Sir Harry, Souvenir de Kieff, and Waterloo. Early Peas were inspected, the earliest types being Carter's Lightning and Veitch's Selected Early, closely followed by Horsford's Free Trade and Canary Bird; selected forms of Kentish Invicta, William I., and Dr. Hogg, of the same earliness, were much approved; and Gradus (Laxton), certificated last year, well maintained its reputation as a large early extremely handsome variety.

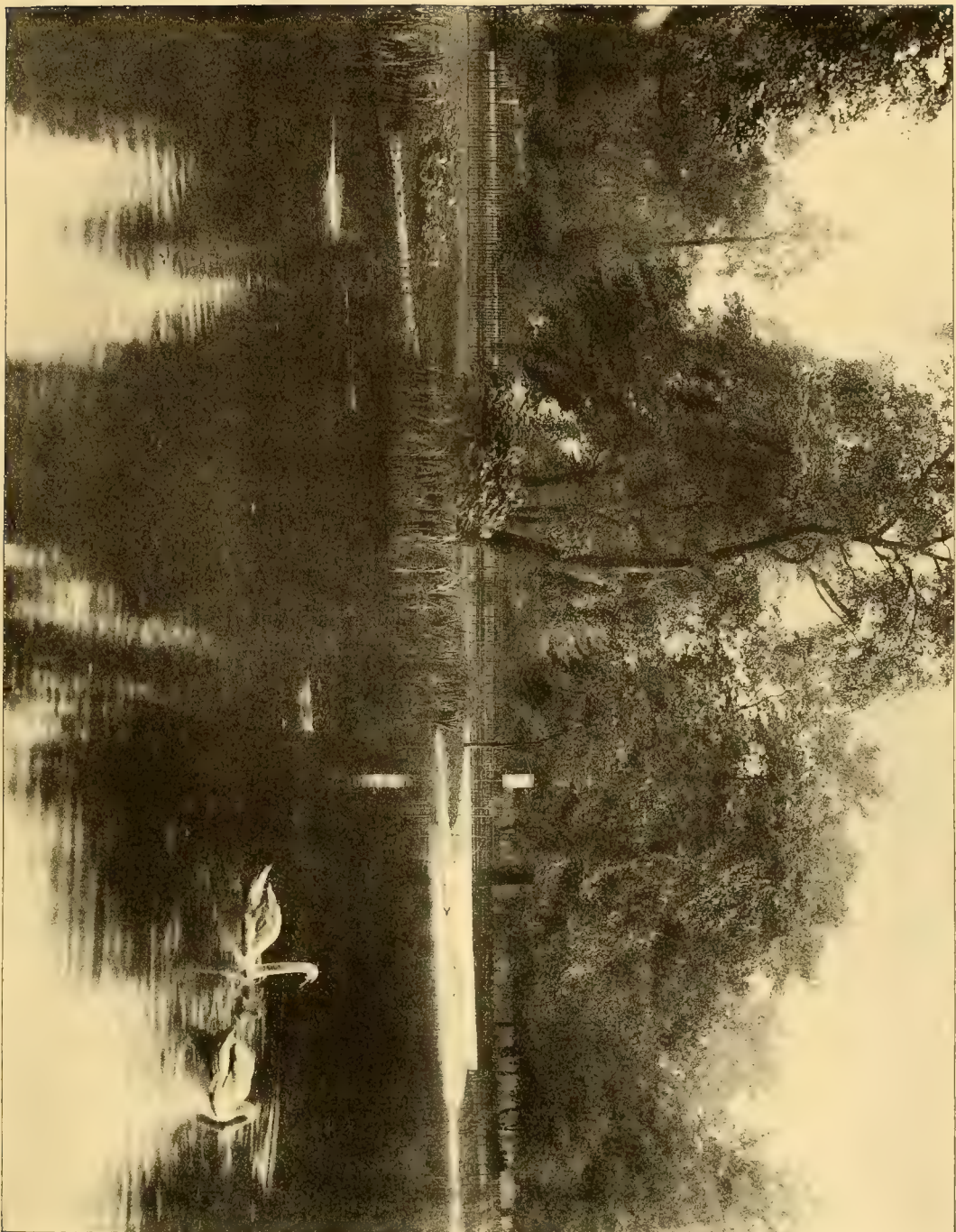
FRUIT CROPS.—We hope to publish in our next Number the reports on the condition of the fruit crops throughout the country, to be followed shortly afterwards by a number of remarks on the same, obligingly supplied by our correspondents.

MR. E. R. CUTLER.—We are pleased to be able to report that the zealous Secretary to the Gardeners' Royal Benevolent Institution is progressing favourably, and that hopes are entertained that he may be able to resume his duties in the course of a week or two.

PEOPLE'S PALACE.—We are desired by the Chairman of the above Institute, Sir E. HAY CURRIE, Bart., to state that the show previously announced to take place on August 6 and 7, will not be held.

NORTHERN FIELD CLUBS' CONFERENCE.—The first Conference of representatives of the Northern Field Clubs was held at Huntly, Aberdeenshire, on Friday and Saturday, the 13th and 14th inst. There was a good attendance, delegates being present from Aberdeen, Inverness, Nairn, Elgin, Banff, Keith, &c. At the opening meeting, which was largely attended, Professor J. W. H. TRAIL (Professor of Botany, Aberdeen University) occupied the chair, advocating the claims of the various societies, and sketching the work done by them. The Conference was addressed on many other subjects on Friday, and Saturday was devoted to excursions to various places of interest in the neighbourhood. The several leaders of the excursions read papers on the districts visited.

ALLIUM NARCISSIFLORUM.—This seems to be the proper name for the plant certificated on Tuesday last week under the name of *A. pedemontanum*. In the *Botanical Magazine*, t. 6182, *A. grandiflorum*, *pedemontanum*, *nigrum*, and *roseum*, are given as synonyms of *A. narcissiflorum*, but the plant figured at the above tab. is said to be *A. insubricum* (Boiss. and REUT.), a new name given, we believe, because the name *pedemontanum* had been several



THE PHOTOGRAPHED BY "THE GARDENERS' CHRONICLE" FOR THE "GARDENERS' CHRONICLE" JULY 21ST 1888.

times confused, and to separate that plant from the true *narcissiflorum*. To this group of large individual flowered *Alliums* belong *A. macranthum* (BAKER, *Gard. Chron.*, and *Bot. Mag.*, t. 6789), a native of the Lachen Valley, in Sikkim Himalaya, at elevations of 13,000 feet above sea-level. This is a most charming species, with pretty mauve-purple flowers, perfectly hardy in our borders. *A. narcissiflorum* is a Dauphiny plant, while *A. pedemontanum* is a native of Piedmont, with larger and handsomer coloured flowers.

HORTICULTURAL CLUB.—The annual excursion, in which ladies are invited to take part, is fixed for Wednesday, July 25. The members and their friends will meet in the first-class waiting-room at Charing Cross (S. E. R.) Station, at 10.15 on the morning of July 25, and will then proceed in a second-class saloon carriage at 10.32, calling at Cannon Street at 10.42, to Tunbridge, where brakes will be in readiness to convey them to Redleaf and Hever Castle, returning to Tunbridge for dinner, at the "Rose and Crown" Hotel, at 6 o'clock precisely, whence they can return to London at 7.35. Further particulars may be had from H. HONYWOOD D'OMBRAIN, Secretary, Westwell, Ashford, Kent.

ST. SWITHIN'S DAY.—The 15th of July will long be remembered as one of the wettest of St. Swithin's Days on record about London. It rained fully twelve hours without cessation, and towards the evening it resolved itself into a perfect down-pour. The soil was literally soaked, the trees washed about all previous July experience, and the Apples—what there are—were cleansed by ablutions far in excess of the requirements of the case; for, to accord with the water used, the crop should have been fifty times as large. If what is standing does not become remarkably fine in the autumn it will not be for lack of moisture at the tree roots. It is worthy of note, however, that the trees so far have not made growth in excess of what was made by this time last year. If we get a fine warm autumn, not only should the fruit be fine, but there should be a wonderful swelling up of fruit spurs for another year.

FUNERAL WREATHS.—The last number of the *Gartenflora* gives a series of illustrations of the wreaths forwarded by various illustrious personages on the occasion of the interment of the Emperor FREDERICK. For the most part they seem to have been sufficiently ugly, lacking in taste and refinement. Oddly enough, a wreath sent by King GEORGE of Tonga seems to have been the least objectionable of the whole. It consisted of a leaf of a *Latania* as a background, on which was placed a bouquet loosely arranged and surmounted by an imperial crown. Obtrusive ribbons form a prominent feature of all the designs.

NANODES MEDUSÆ.—Mr. J. CARVILL writes:—"A very fine specimen, with thirty flowers, of this most peculiar Orchid, is now flowering in Mr. BRIESEMANN'S collection at Paragon House, Blackheath."

TREE GUARDS IN SHEEP-RUNS.—Mr. Sidney Ford, of Leonardslee, made at the recent meeting of the Fruit Conference committee the interesting statement that the best form of tree-guards in orchards and fields where sheep fed, was found in loose coats of stout mesh wire, 3 or 4 feet high, fixed securely yet loosely round the stems of the trees. Against these the sheep would rub and the guards would revolve with the friction, until the animals, soon tired of the operation. The wire is cheap and enduring, and would prove a protection also against ground game.

TABLE DECORATIONS.—The following note, extracted from the *Queen*, may prove serviceable to some of our readers:—"Beautiful have been the flowers at the dinner parties. Mrs. Pattison showed what a great effect could be produced by foliage of rare kinds, set in silver stands. Alpine Poppies have found favour with Mrs. Newgate, at Prince's

Gate; Mrs. Rickards, in Cavendish Place; Mrs. Dimsdale, in Palace Gate; and with Countess Rosse, at the pretty dinner she gave last Saturday; the Duchess of Leinster, the previous day, chose similar flowers, which were placed in silver bowls, with the Directoire wreaths, on the table. Mrs. Gwynne Holford had them in silver bowls and stands. Mrs. Dennistoun placed hers in a notably handsome gold service, and Mrs. Johnston Foster, in Chesterfield Street, in silver baskets, with crescents and Directoire wreaths on the cloth. Mrs. Naylor Leyland carried out the original idea of a green velvet cloth, with the alpine Poppies upon them in glasses, and arranged as wreaths—a triumph of colour. The Countess of Kimberley displayed them in fine Rose du Barry vases. Mrs. Dennistoun, of Golfhill, placed the alpine Poppies in a gold service, giving a posy of Roses to each lady. The Hon. Mrs. Oliphant had trelliswork baskets of the Poppies. The Shirley Poppies are, perhaps, newer. Mrs. Van de Weyer gave a most enjoyable dinner on Tuesday, and her table decorations were particularly admired, with these Poppies placed in gold baskets. Mrs. Phelps also showed them to the best advantage in baskets, and Mrs. Akers, in Hyde Park Terrace, enhanced the beauty of a very fine service of plate with these same Shirley Poppies. Mrs. Ambrose Ralli had them arranged in innumerable devices, and Mrs. Turner in wreaths and crescents. The June Roses were especially beautiful. Mrs. Dunsterville displayed blush and yellow Roses on her table, in silver baskets and in wreaths, and no flower makes such perfect wreaths. Mrs. Siltzer, in Cromwell House, had yellow shaded Roses, which loaded the air with sweetness. Lady Constance Gore, in St. George's Place, had a table of pink and yellow Roses, the combination which Madame La Valiere loved so much. Mrs. Whish mixed red and pink, and Mrs. Henry White, black, red, yellow and pink Roses, the former being, of course, extremely rare, but adding mightily to the effect. Miss Monk, at Buckingham Gate, had red Roses. Mrs. Russell Gole, pink and yellow Roses. Mrs. Montagu again had another variety, the finest shaded Roses in silver baskets, which were interspersed with wreaths on the cloth. Mrs. Arthur Wilson celebrated her silver wedding by a large dinner party, when each guest received either a *bouquet de corsage* or a buttonhole of Devoniansis Roses, matching the blooms placed on the table in silver bowls. Mrs. Estcourt started a pretty generous fashion; her table was arranged with branches of Catherine Mermet and Maréchal Niel Roses, so that they might be worn afterwards by the guests. Mrs. Peebles, on Friday, displayed pale pink and yellow Roses; and Countess Cadogan, on Monday, had shaded Roses, which were laid on the cloth. Mrs. Powles intermixed fairy lights with her Roses. All white flowers are now much used for the decoration of dinner-tables. Lady Burton had quite a country rustic bouquet in her amalgamation of Forget-me-Nots, white Poppies, Marguerites, and other wild flowers."

RALEIGH.—Attention is this week turned to the memory of a great national event, which we all, even as children, learned to look back on with pride. So familiar to us are all the incidents that history has preserved, that we hardly realise the gap in time between the 1815 Waterloo and the 1858 Armada. LUCAS' ideal picture of the "Game of Bowls on the Hoe" is as fresh to us as a sketch from "our special artist" of an illustrated paper at Burmah or the Cape, and we almost in the intervals forget what our living friends, wearing V.C.'s, did in the Crimea. We feel we have given the last honours in funeral rights to the Elizabethan heroes in our own lifetime. Happily one part of the Plymouth programme is the game of bowls; for our warriors then were not always leading troops in Flanders or running little ships against Spanish galleons in Mexican waters. They had their periods of rest from fighting, though fighting then, ashore or afloat, occupied so much time. And it is pleasant for those of us who enjoy the pleasures

of cultivating trees and flowers to remember how the peaceful times—times to be reckoned only in months and weeks—of one of the most prominent men of ELIZABETH'S Court were passed. RALEIGH, who has been so misrepresented in history—who has been called an upstart adventurer, while his family connections on both sides were of the highest in the country, who had relatives at Court long before the apocryphal cloak incident—was, though a warrior who had served abroad, a fore-thinking colonizer, a courtier, a scholar, and a statesman. He was also a naturalist, and while the hunting is still flapping in the Plymouth breezes to remind us of cannon and sword point, we may turn to this side of his life with a calm pleasure. Those who have had the good fortune to wile away a lazy holiday near Budleigh, on the South Devon coast, where his boyhood was spent, can have no difficulty in understanding his keen appreciation of natural beauties. The woods, the flower-decked banks, the hedgerows, attractive with insect-life, and the sea-shore, with its many voices, from those of gentle murmur to angry storm, all spoke to him before he went to Oxford to pass on to his duties as a man in troublous times. And all through his life we can trace this influence. Was ever man more called on to show his many-sidedness than RALEIGH? There have been his equals, but few his superiors, in this—yet, if it be that we read him rightly, in his times of repose he enjoyed natural beauties. His idea of the planting of Sherbourne is an illustration of it. Even in his account of his exploration in Guiana, where he was occupied with the care of his men, and noting the course of rivers and the position of hills, he breaks away to speak of verdant plains and "deer trooping down, as if called by a keeper," notes the trees he sees, and speaks of the plants new to him as "enough to fill ten herbals." So keen was his eye, that on his second visit to Guiana he noted the "change in habitat" of plants. We revere writers like HERODOTUS and PAUSANIAS who have told us what they saw, but RALEIGH stands as one of the first who used his pen as an artist would his brush to give us glimpses of beautiful scenery abroad. Botanists will ever be thankful to his memory for having sent so accomplished a scholar and naturalist as HERIOT to Virginia—HERIOT'S report stands as the prototype of reports by naturalists "attached to expeditions." That RALEIGH introduced Tobacco and the Potato we know is mere fable, but he will always be remembered as the first Englishman who sent a naturalist abroad to report on the flora of a country intended to be a colony. May he have a memorial not only among his comrades-in-arms, but also in our Imperial Institute as the first Englishman who with careful foresight thought of colonisation.


THE MUMMY PEA.—Every year we receive specimens of a Pea in which the stems are more or less flattened into a riband-like form, and twisted spirally. There is a nonsensical story of its having originally been derived from seeds found in the wrappings of a mummy. A better designation is Crown Pea, as, owing to the distortion of the stem, the flowers and buds are often collected into a sort of crown at the ends of the stalks. The case is interesting as showing that a particular monstrosity can be reproduced from seed. A figure of this Pea was given in our number for January 11, 1873, where a full history of the Pea is also to be found.

LIQUORICE CULTURE IN RUSSIA.—Liquorice root (*Glycyrrhiza glabra*), which is now but little cultivated in this country, the chief supplies coming to us from Spain and Italy, is said to have become of late an important article of cultivation in the neighbourhood of Batoum. A few years ago its existence was scarcely known or heeded. It is now grown in great abundance at Liakha, in the district of Elizavetopol. The quantity exported from this place in 1887 amounted to 1400 tons, and the average price on the spot of production is about £2 per ton, and at the port of Batoum, properly pressed and packed, it realises over £6 per ton.

ROOTING OF LEAF CUTTINGS OF SANSEVIERA GUINEENSIS.

THE accompanying illustration (fig. 7) was taken from some leaf cuttings which were prepared at Kew with a view to testing them as a means of quickly obtaining a stock of any of the species, all of which are now attracting attention as valuable fibre-yielding plants. The succulent nature of leaves is by no means an indication of their being capable of rooting and producing plants, as anyone who has any experience in plant-propagation well knows. Theoretically we know of no reason why all leaves should not do this, but practically only a comparative few can be made to strike root. When the minute anatomy of the leaf is sufficiently studied, these points may be made clear. The leaves of the *Sansevieria* were cut into lengths of about 2 inches, and planted with the basal end in sandy soil. In about a month they developed roots, and soon afterwards they put forth the long fleshy runner-like stems shown in the picture. Apparently this stem is an elongated bud, with scale-like leaves, which ultimately forms a bud at the apex from which the true leaves are developed. It might have been expected that the leaf-bud would have been formed on the cutting itself. It seems singular that a bit of the leaf of a plant with the habit of a *Sansevieria* would, when treated in this way, form a true stem before it proceeded to develop leaves.

HOME CORRESPONDENCE.

 Correspondents will greatly oblige by sending early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

Photographs or drawings of gardens, or of remarkable plants, trees, &c., are also solicited.

A LARGE LILIUM AURATUM.—The Countess of Dartmouth had presented to her in the spring a large pot of *Lilium auratum*, which, when received, was about 3 feet high. There were thirty flowering stems in the pot. There are now 200 open blooms on the plant, not a few of them measuring 8 inches across and 1 foot from tip to tip of the petals. A good many of the stems have eight blooms, while the others have seven. There are still a few buds to open. In all there are 220 blooms and buds. How many bulbs there are in the pot we have no means of knowing as yet. *B. P.*

BEDDING-OUT COCKSCOMBS.—In a dry warm season the bedding out of the Cockscumb usually proves a success, but in a dull, cold, sunless season such as we are having, with the thermometer down to 37° for a minimum in the middle of July, it is a miserable failure. Last year we tried for the first time the Cockscumb as a bedder, and with excellent results. We only tried one bed, in which there were over 200 plants; the bed was admired by all who saw it. Some of the combs measured 1 foot in length, and were correspondingly broad. I had the idea that a bed of Cockscombs would have a very stiff appearance, but after the experience of last year I have altered my opinion, as the fine foliage the plant took away the stiff appearance of the comb, and the comb showed itself well above the foliage. My employer was so well satisfied with the bed that it was resolved to have a bed in close proximity to the house this year. I had one planted, but the plants do not grow, and they are damping off one after the other as fast as possible, and the few leaves they have made are puny. The plants must be rooted out and the bed replanted with something else. *P. J. B.*

CANTERBURY BELLS.—As border flowers these are quite unrivalled for effect, as few plants are so floriferous, and as they grow some 3 feet or more in height and branch freely, producing bells of such a large size and so varied in colour, they make a very fine show. The best and most desirable to grow is the variety known as *C. calycanthema*, which has a salver-like calyx about twice as big as the flower, and this saucer-shaped base is a fine setting off to the blooms. Not only are these Canterbury Bells highly ornamental for border work, where they grow freely and are quite hardy, but they are valuable for

pot culture, as by keeping them under glass during the winter and giving them a little heat in early spring, they may be brought into flower early, when they make a grand display in the greenhouse. As these *Campanulas* are biennials it is necessary to sow seed the year before the plants are required, and the sooner this is done the better so as to get them strong, the way to raise the plants being to sow under the protection of a handlight, or in a pan of finely sifted soil, and then place a piece of glass over the top. In either case the handlight or pan should be shaded and the soil kept damp till the seed germinates, when full light and air must be given in order to induce a dwarf sturdy growth. As soon as the seedlings are large enough to handle, those intended for borders should be pricked out in good ground in some nice open spot, and those for the greenhouse potted in rich soil in small pots to be shifted on after, or they too may be planted out with the others, and treated in the same way and lifted and potted up late in the autumn. *J. S.*

PROFITABLE TOMATO CULTURE IN POTS.—A few weeks ago I noticed in a small span-roofed house at Common Hill, Ilfracombe, a fine example of Tomato culture in pots, two plants being grown in each 14-inch pot, of which there were about thirty—fifteen stood closely together in a row close to the front hot-water pipes on each side, and the plants were trained each with a single stem up to the rafters, the shoots and leaves being kept pinched back so as to allow the full benefit of air and sunshine to reach the stems and the numerous clusters of fruit. Owing to Strawberries having been grown on suspended shelves until early in June the leading shoots of the Tomato plants had to be kept stopped hard back until the shelves were taken down, with the result that 60 lb. of fruit were gathered off the plants up to that time, and when I saw the plant (June 21) a like quantity of ripe and ripening fruit could have been gathered. The leading shoot of each plant is now being allowed to reach the top of the house, stopping, however, the secondary growths above each cluster of fruit. Meanwhile a young shoot is taken up from the base of each plant, the points being pinched when about 2 feet high, and afterwards above each cluster of fruit showing on the secondary growths, as indicated. The plants are kept well supplied at the roots with weak liquid manure, and an occasional surface-dressing of Beeson's manure is given before applying water at the roots. I need hardly say that when the crop of fruit on the old stems is ripe the latter are cut clean away, to allow more room for the young plants proceeding from their bases. Thus grown, provided there is a good heating apparatus at command, ripe Tomatos may be secured from the same pot plants all the year round. The varieties cultivated so successfully by Mr. Dadds, the gardener at Common Hill, are Chiswick Red, Earliest of All, Reading Perfection, and Main Crop. *H. W. W.*

HARDINESS OF CLIVIA MINIATA.—My experience with *Clivia miniata* being to my mind somewhat remarkable, I am desirous of mentioning it, as it may induce some would-be cultivators of *Clivias* to take the plants in hand for window decoration. The plant noticed was Belgian-grown, and came into my hands in the early part of last summer in full bloom, but destitute of all soil at the root. Not having what most gardeners would regard as "suitable" soil, it was put into a carefully-drained pot, the soil employed being that of the back-garden of a house in the suburbs which certainly, a few years ago, formed part of a meadow. The plant after a few days of retirement, spent in a shady corner of a room, was brought into full sunshine at a window facing S.E. It soon appeared to take root, and not a single flower fell from its really magnificent head, which was the envy of my less fortunate neighbours. The roots were greedy of water all that hot summer, but being fleshy they are enabled to hold a considerable store for the use of the leaves, and it was considered good practice to let the soil get tolerably dry before supplying more water. With a little artificial manure—I forget whose—the plant made excellent leaves, which grew with a decided bow of respect towards the sun, and therefore required a weekly readjustment by making the plant right-about-face. There was abundance of sunlight in 1887, and I looked forward with certainty to a good head of bloom this year, provided the plant did not succumb to frost, the room being unheated, and I had no other with so sunny a window. Water was gradually withheld from September, just enough being afforded from time to time to prevent the appearance of

shrivelling in the leaves. The thermometer must have fallen on many occasions during the winter to several degrees below 32°, for *Maurandias*, *Heliotropes*, *Mesembryanthemums*, &c., were killed by the frost, but the *Clivia* bore the low temperature equally well with Orange trees, *Cactus Jenkinsoni*, and *Adiantum Capillus-veneris*; and in May last it bore as fine a head of flowers as that which came on it from the Belgian nursery. After this experience I may fairly claim to place the *Clivia* amongst the best of our room plants. The foliage is now of a dark green colour, indicating perfect health, and the plant should be rewarded by a shift into a larger pot. The sun-god has been very retiring this season, and by no means brilliant, at least in London; and the crook in the back of my plant is certainly less decided than in 1887—he has "bo'ed," in fact, much less, so that the right-about-face movement was not so urgent as last year. *M. W.*

BICOLORS IN SCARLET BROMPTON STOCKS.—The whitening of the flowers of scarlet Brompton Stocks to which Mr. Scaden refers, is far from being uncommon—indeed it is a frequent occurrence. Sometimes the flowers will show a flaked form of white and scarlet; sometimes portions will be white and other portions scarlet. Of course these features are not largely marked, and are most usually found in either the latest bloomers or in plants which may have become partially checked or injured. The suggestion conveyed by Mr. Scaden, that Brompton Stocks at Bournemouth are practically perennials, leads to the inference that that locality must be a paradise for Stocks. The most remarkable fact seems to be, that on the same plants some of the flowers are single and some double. Of such variation on the same plant I never heard before. *A. D.*

BARREN STRAWBERRIES AND MILDEW.—Much has been said and written about barren Strawberries, but after all there is nothing remarkable in it, as the barrenness was only brought about by want of strength or development in the crowns, which weakness and imperfection was caused by the great heat and drought of last summer and autumn. In soils that are deep and favourable plants have done well, and in such districts there seems to have been no lack of fruit, but in others, where the land is light and quickly dries, it is only spongy ones, fresh from runners, that had sufficient vigour in them to form flower-heads. What has been a great trouble to us is the mildew, and this we have had both on pot plants and on those outdoors, not only on the leaves, but on the fruit likewise, and it stops the swelling and almost spoils it for use. In houses we could manage to mitigate the evil by syringing with water in which sulphur and soft soap had been boiled, but outdoors little good can be done with this, as it is almost impossible to wet the whole of the leaves. Like the barrenness no doubt the season has had much to do in bringing this mildew about; but I am afraid it is not so easily got rid of, as the spores remain on the foliage or lodge about all the winter. I find that some sorts are more subject to it than others, and Vicomtesse Hericart de Thury and Queens are the worst. The first-named may often be seen with it, on the seeds, when forced, and it gives a peculiar bloom to the fruit of the Queens, which it hardens, and prevents swelling, unless checked at once. Perhaps some one may know of a remedy against this troublesome parasite, and if so they will confer a great benefit by making it public. *J. S.*

STRAWBERRIES here are quite a failure this season, whereas last season I gathered upwards of a ton; this year I shall not be able to gather more than about 1 cwt. Seeing Mr. House's advertisement in the *Gardeners' Chronicle*, inviting all interested in Strawberry growing to see his "Victory," I paid him a visit, and must confess I was astonished. He has them growing in different situations, and both in and out of pots; and, without exception, the plants are covered with fruit of all sizes, and the quality has proved to be excellent. The "berry" evidently partakes of the good qualities of both its parents, viz., President and British Queen. The late runners planted last year had from six to eight good fruit on each, and the old plants one hundred or more. I grow Sir Joseph Paxton, President, Eleanor, and other leading varieties, but have nothing to equal Victory in withstanding drought, and for cropping. *J. Toogood, The Gardens, Alwinton Hall, Peterborough.*

SMUT ("BUNT") IN WHEAT.—This latter term is not in common parlance in Ireland. There are two kinds, both the production of a parasitic fungus.

Looking through my Wheat crop to-day, I noticed, say 1 or 2 per cent. of the heads black or smutty. This is generated by the fungus *Ustilago*, and as it will immediately be washed or blown away it is not so injurious to the quality of the grain, or, subsequently of the flour, as that produced inside the head later on, and now not easily discerned. This latter fungus is the *Uredo*—and it is against this primarily the various preventative dips—those dips, are, I believe, sulphide of sodium or potassium—chiefly are used. I should like, with your permission, to ask as to the life-history of the spores of these parasitic fungi, especially the first—When scattered what becomes of the spores, no Wheat being sown in the same fields for four or five years; and no seed scattered without being first dipped, and then dried out in slaked lime? *W. J. Murphy, Clonmel.* [See Mr. W. G. Smith's *Diseases of Field and Garden Crops.* (Macmillan). Ed.]

BLIND NARCISSUS POETICUS.—There is no doubt that the blindness of this valuable variety is this year very general, as shown by recent communications on the subject. It is not easy, however, to trace the cause of this general failure, and the various opinions advanced do not tend to smooth over the—to many—serious difficulty. A market grower near by, whose stock of this has been five years planted, estimates his loss of buds at about 10 per cent. The whole of his stock is planted in lines between the Apples and Plums in his orchard; they rarely, if ever, get manure, and the soil, though trenched prior to the original planting, could hardly benefit the bulbs to any great extent, by reason of the traffic to the trees in the fruit season. The soil, too, consequent upon the thick manner in which the trees are planted, must be fairly full of root-fibre, and this upon a soil naturally light with a deep gravelly subsoil would not unnaturally point to a dry and impoverished soil. My friend attributes the blindness to wind frosts. In this I cannot agree, inasmuch as we had no wind frost in this locality at the time these went blind this year, therefore, we must look elsewhere for the cause. For myself I had imagined that the excessive drought of the past year or two had not allowed the bulbs to properly mature themselves and this being a late variety strengthened my belief in this direction for the time. This theory, however, is also set aside, for, upon examination at the time, I found mine were exactly like those described at p. 807 by the Rev. G. Wolley Dod; the miniature petals forming a rosette within the scape brown and dead. The flower-stems internally bore every evidence of health so far as my experience would admit my judging. I am now under the impression that heat has something to do with this blindness during the nascent period. I am led to this conclusion by the fact of some of the common *Pseudo-Narcissus* going blind a year or two since, by an attempt to force them into flower very early in the year. Only a few emerged from the soil while in heat, some of which expanded, but the majority turned brown. The whole batch were eventually turned out-of-doors as worthless, and notwithstanding the weather which followed, a great many flowered at their usual time. The double yellow Daffodils, when subjected to much heat in the early part of the year will also go blind—the blindness in each case becoming apparent when the buds are in the same stage; those that go blind continue erect and never assume the horizontal turn, which is a sure indication of proper expansion. Mr. Burbidge gives preference to annual lifting and a comparatively poor soil, while the soil in Mr. Dod's garden is apparently what Mr. Burbidge would avoid. Our soil and attendant circumstances are distinct again, manure being employed when originally planted, and manure-water applied twice during the past winter; the result being a decided increase in the number of flowers compared with that of last year. Should this blindness be traceable to excessive heat, the difficulty will be overcome by planting in partial shade where possible, or of affording some protection when planted in beds. I have not noticed any sign of the disease till the stems have attained their full height, as they emerge from the ground all equally healthy-looking, while those that fail appear to do so quite suddenly and at one particular stage of their existence. If any readers of the *Gardeners' Chronicle* have well-flowered batches of this variety this year, they will confer a boon to many besides the writer by giving particulars respecting them. *E. Jenkins.*

NON-WARRANTY CLAUSE.—I see a notice of the Scotch meeting against the non-warranty clause, reported in the *Gardeners' Chronicle* of last week, and I strongly urge that a similar agitation among

retail-seedsmen and market gardeners be commenced without delay in England. It is contrary to the interests of the public generally that any class should be allowed to set themselves above the law, as the London wholesale trade and certain of their provincial brethren are now doing. It is all very well to say they will meet us in a fair and liberal spirit in case of error, but hitherto most of those who have had occasion to complain—myself included—have been met with the reply, "We state on our invoices we will not hold ourselves responsible in case of failure of the crop from any cause whatever." The only alternative left to us under the circumstances appears to be to buy our seeds of Scotch houses if English ones cannot and will not recommend [guarantee] their seeds. *Market Gardener, Evesham.*

BROWNEA GRANDICEPS.—This handsome tree, alluded to in your number for June 16, flowered in the public gardens here a year ago. The heads of flowers were bright red, measured 1 foot across, and attracted the attention of all horticulturists. *Letellier & Son, Cuen.*



FIG. 7.—LEAF CUTTING OF *SAXIFRAGA GUINEENSIS*.

1, Portion of leaf inserted as a cutting, showing two young plants growing out from base, natural size; 2, 3, 1, Views of same cutting, showing the manner of development of the young plants.

THE BERMUDA LILY, LILIAM LONGIFLORUM HARRISII.—As a window plant this has often been commended in the *Gardeners' Chronicle*; but really too much cannot be urged in its favour. I have two potfuls in my sitting-room windows now expanding into bloom. The height is about 2 feet, and each stem has two immense trumpet-shaped flowers of the purest white, and the scent is most delicious, something like a combination of Musk and Tea Rose. Those Lilies were wintered in 3½-inch pots in a cold frame, and must have often been frozen, and have had no forcing since, beyond a little guano-water on a few occasions. Owing to their great substance these flowers will remain perfect, when shaded from hot sun, for a month. *W. J. Murphy, Clonmel.*

WHAT IS A "HERBACEOUS" PLANT?—After repeated endeavours to answer this inquiry for myself, I am led to seek assistance in the matter. Some years ago I thought that I knew what are herbaceous plants, but to-day I am compelled to confess that the matter is much too complicated for me to attempt to draw the line. In places where one would least expect to find it—as, for example, at the recent shows of the Royal Botanic Society and the Royal Horticultural Society at the Inner Temple—the confusion was heightened beyond measure by the very subjects which did service for herbaceous plants. Naturally enough visitors would imagine when viewing the collections of hardy

plants, that as the schedule provided distinct classes for alpine and herbaceous plants, they were inspecting the one or the other, and not a mixture of both, coupled with "foreigners" which had no right there at all. But while the question may, in many cases, be a somewhat thorny one to decide, there are some points which do not require a moment to decide. When we find our leading hardy plant nurserymen staging such things as bedding Tulips, Polyanthus, bedding Pansies, *Myosotis dissitiflora*, Harrison's Musk, *Saxifraga pyramidalis*, and tree Pæonies in the middle of May, as representing herbaceous plants, I think one might fairly assume, that if all these are admissible, what might not be included? Surely if tree Pæonies are allowed to figure as herbaceous, what law can disallow the introduction of a few pot Roses, for example?—or of *Azalea mollis*, or, in fact, of any plant which is so purely a deciduous shrub, even as are the tree Pæonies? The word "herbaceous" is defined by Dr. Cooke in his *Manual of Botanical Terms* as "producing an annual stem from a perennial root"; in Don's *Gardeners' Dictionary* it is given thus—"a plant, the stem of which perishes annually;" and by Chambers the botanical definition runs thus—"having a soft stem that dies to the root annually." By a comparison of these—all agreeing in the main—there would not appear much room for question, if the meaning which it is obviously intended to convey were only carried out in practice. But I very much doubt whether such a plant as Harrison's Musk or *Saxifraga pyramidalis* could perform the functions set forth by the authorities I have cited. The plant of *Saxifraga pyramidalis* which flowers this year never flowers again, therefore it cannot be regarded as "producing annual flowering-stems from a perennial root." In this case offsets are produced, which in course of time flower and perish likewise. Were I asked to define this particular plant, I would do so in the words "perennial alpine." Bedding Tulips are quite in their proper place, and fulfil the office of "herbaceous." If a nurseryman were required to supply one hundred herbaceous plants, at, say, the low price of 25s., he most assuredly would not include Harrison's Musk, common Forget-me-nots, Polyanthus, Pansies, or bedding Tulips, much less Tree Pæonies; therefore I contend that to exhibit all these things in a group provided for herbaceous plants is likely to mislead. In large collections of hardy plants there is no dearth of good things in the month of May, and growers of hardy plants generally, who desire to extend the growing taste for these plants, cannot do better than make their exhibits of them as full as possible of really good, genuine, and useful subjects, at the same time illustrating the value of many of them in the decoration of the conservatory. One word more: very confusing are such things as herbaceous *Calceolarias* and *Erica herbacea*, the former little more than a half-hardy annual, while in the latter we find a dwarf evergreen shrub. Is it possible to classify such as these with what we generally understand as herbaceous plants?—I think not. *E. Jenkins.*

THE POTATO DISEASE.—Have you seen anything of the Potato disease yet? is the anxious query put from day to day by Potato growers. The weather with its very low temperature and daily downpour of rain—sometimes perfect floods of rain—naturally gives ample reason for this anxiety. Rarely has the soil been more thoroughly saturated than it is at the present moment of writing; and the surface is impacted beyond previous summer experience. If there is any virtue in washed air and in cleansed soil, then should both air and soil abound in virtues, and impurities be few in either. But in spite of the cool temperature and the excessive rainfall the Potato haulm looks wonderfully healthy—perhaps never appeared better, for the past three weeks have filled the gaps in the rows caused by the cold which checked leaf growth. The moment sunshine shall rewarm the soil, root development will take place with hasty strides, and the grower will exult in the prospect of a heavy yield. In view of the probability of disease, it would be interesting to know if the earthing system of protection against disease (Jensen's) will be followed by any one this year. It is, perhaps, not too late even now, to put the plan into operation with later kinds, providing the requisite space between the rows has been allowed. As I looked at the cleanly washed ridges of soil about the plants, and the ditch-like appearance of the furrow, I thought that if ever conditions were favourable for a thorough testing of the value of protective earthing they are so at present.

Of course the ridges of soil which are formed under ordinary earthing offer some protection to the tubers from the heavy washing rains, but do not give all that Mr. Jensen requires, and, indeed, what the dangers of the case require, if the spores of the *Peronospora* are really washed into the newly forming tubers from off the foliage, as that gentleman has declared to be the case. But, after all, everything depends upon the presence of the spores, and so far these do not seem to be existent. In some previous years, and under such gloomy weather conditions as now prevail, we have had the disease rampant in the early varieties of Potatoes by this time. Its absence so far may be due to the general lateness of all vegetation, which may also influence the germination of the spores. It is poor comfort to think that. It would be pleasant to be assured that the disease has died out, and that, let the weather be what it will, our crops are safe. That, however, remembering the experience of many years out of the past forty-four, is too much to hope. I confess to having more dread of hot nights and white mists than I have of the plashing rains. The old superstition as to the assumed connection between electrical storms and the *Peronospora* arose from the fact that the air during such times, and especially immediately after these storms, is full of humidity—hot steamy humidity. Then with the spores abundant and active, whole breadths have been spotted and blackened almost in a single night just because the foliage had been saturated in a bath of warm vapour. No protective earthing can check such a disaster as that. We have had none of these conditions so far this year, and for the obvious reason that we have had no excessively hot weather to heat the soil and promote humid exhalations. Should the clouds disappear and the sun show his face for any lengthened period without doubt the soil will get warmed. Our chief reason for hope that the worst may not come lies in the fact that the Potato disease most dreaded has been for the preceding two or three years in a great measure inoperative, and that lack of activity may have materially lessened its powers of reproduction. *A. D.*

SOCIETIES.

ROYAL HORTICULTURAL.

Scientific Committee.

JULY 10.—Present: G. F. Wilson, Esq., F.R.S., in the chair; Messrs. Snee, Boulger, W. G. Smith, J. O'Brien, D. Morris, and Dr. Masters.

Insects attacking shoots of Ash.—Mr. Boulger mentioned, on the authority of Mr. Stainton, that the insect, alluded to at a previous meeting, was probably one of the *Tineidæ*, *Prays Curtisellus*.

Plague of Caterpillars, &c.—A further discussion took place on this subject, in the course of which Mr. O'Brien alluded to the abundance of earwigs (*Forficula*) this season. Mr. Wilson drew attention to the local distribution of the caterpillars. In one garden in his neighbourhood none of the pests were found, while in others there was scarcely a leaf left on the trees. At Wisley, Mr. Wilson had found that exposure to east wind was associated with the presence of the insects; thus the trees in one line of Plums, fully exposed, were stripped of their foliage, while in another line of the same variety close by, on the same description of soil, but where the trees were sheltered by a Furze fence, not a leaf was injured.

Fungi on Cucumbers and on Poppies.—Mr. W. G. Smith exhibited leaves of Cucumbers affected with the rare *Didymium dadaleum*; and also Poppies attacked by the *Peronospora arborescens*, in consequence of which the flower-stalks were lengthened and spirally twisted.

Lælia Egermanniana.—Mr. O'Brien made some remarks relating to this plant, exhibited by Messrs. Sander, which is remarkable for the presence of well-developed leafy bracts (not membranous sheaths) at the base of the flower-stems. By some the plant is considered to be a hybrid between *L. autumnalis* and *L. majalis*. As there was some doubt expressed as to whether the existence of leafy bracts might not be accidental, it was suggested that the plant be exhibited again another year.

Odontoglossum Eugenes.—A plant of this was shown, and was considered to be a form of *O. excellens*, and possibly of hybrid origin, *O. Pescatorei* being one of the parents.

Anthurium Rothschildianum.—From Messrs. James Veitch & Sons came a plant with two spathe from

the same stock. One of the two was much more densely spotted than the other.

Epidendrum vitellinum.—From Messrs. Sander came flowers of this species, in which, although the flowers were not fertilised, the ovary beneath the flower was enlarged, its colour glaucous-green, with six prominent orange-coloured ribs. [Subsequent examination showed that the pollen-masses had not been removed, and that, although the ovary was swollen, the ovules in the interior were imperfectly developed. *M. T. M.*]

Diocious Strawberries.—Mr. Morris forwarded a letter from Mr. Colebrook on the subject of the well-known tendency towards the separation of the sexes in Strawberries, especially in the United States.

Tomato Disease.—From the editor of the *Journal of Horticulture* came a letter written by a Guernsey grower detailing the course of this too well-known, or rather these too well-known diseases. The writer's plants were in a span-roofed house, 60 × 25 feet, and were affected last years when sulphur was applied without effect, the leaves were speedily affected but not the fruits. After the removal of the crop the grower took the precaution to have the walls washed with lime, to renew the soil, and adopted every known means to secure healthy growth, but this year the disease is worse than before. One grower was mentioned as having seven houses, each 350 × 45 feet, decimated with the disease and not a pound's worth of saleable fruit in before. Mr. W. G. Smith referred to the full description and illustration of the several fungi known to attack the Tomato given in the *Gardeners' Chronicle*, in 1881, November 12, and in 1887, August 6, October 1 and 29, by Mr. C. Plowright and himself. Dr. Masters suggested the trial of sulphate of copper in fine powder, mixed with precipitated lime, and dusted over the foliage, as used in the French vineyards.

Monstrous Cypripediums. Various specimens from Mr. Tautz and Mr. Pollett were shown, and referred to Dr. Masters for examination and report.

CHERTSEY AND DISTRICT.

THE twenty-third annual exhibition of this Society was held, by kind permission of R. Gibbs, Esq., in the grounds at The Hollies, Weybridge, on Thursday, the 5th inst. Considering the inclement weather we have experienced of late, the committee are to be congratulated on the results of their labour, while it is gratifying to learn there is a balance on the right side. Favoured during the afternoon with bright sunshine, the inhabitants of the district came out to see the show and hear the excellent music played by the band belonging to the Royal Scots.

The exhibits were staged in three large tents, and the prizes offered in the various classes were keenly competed for. Amongst the most successful exhibitors were Mr. Sutton, Ashley Park, Walton-on-Thames, who was 1st in the group arranged for effect, the same exhibitor showing well in fruits. Mr. Reed, Broadlands, Oaklands Park, staged some splendid stove and greenhouse plants, his collection of Fuchsias being very good. Mr. Osman, Otter-shaw Park, was well to the fore with black and white Grapes, and green-fleshed Melons; while Mr. Sutton was 1st with the miscellaneous collections of fruit.

IPSWICH AND EAST OF ENGLAND HORTICULTURAL.

THIS Society held its first annual meeting on Wednesday the 11th in the picturesque grounds of Christchurch Park, which the committee had wisely secured for the occasion, as the park is in close proximity to the town, and no place could be better adapted for holding a *fête* of the kind, as, besides the advantage mentioned, the particular part at which the tents were pitched is well sheltered and lies at a high elevation, and therefore soon dries after even the heaviest rains. This was at once apparent the morning of the show, the night having been rainy.

The principal tent was devoted to plants and Roses, the first-named being ranged down the sides, the Roses in the centre, and nearly filled it, and hardly ever were H.P.'s seen in a greater state of perfection, the blooms fine and massive in petal, and the colours bright and decided, especially the dark flowers. Teas were on the whole good, although, in a few instances, showing signs of injury from wet.

In specimen-plant exhibiting and growing there has been a great falling off of late years, one of the principal exhibitors having left the country, and others appear

to have given up growing for show purposes, therefore the competition in any of the classes was languid, excepting in the groups where the plants are in small pots, which were quite a feature, and here the growers for sale made a good display of useful saleable stuff.

Open Classes.—Four stove and greenhouse plants. —Messrs. Gilbert, of Ipswich, were 1st, with a fine specimen of *Erythrina crista-galli*, and one of *Erica Parmentieri rosea*; Mr. Marshall, gr. to J. D. Cobbold, Esq., of Holywell, was 2nd.

For six ornamental foliage plants, the above-named exhibitors maintained the same order, the best plants in the winning lot being *Croton Queen Victoria* and *Phormium tenax variegata*, *Asparagus plumosus*, *Phoenix reclinata*; *Dracena Shepherdii* and *D. Baptistii* being good specimens in the 2nd.

In the amateur class for a group of plants (50 square feet), arranged for effect, Mr. Catlin, gr. to G. Crisp, Esq., Playford, was 1st, and Mr. Marshall 2nd.

For a specimen Orchid, Mr. Rogers, gr. to Lord Rendlesham, was 1st, with an *Oncidium macranthum*, and Mr. Marshall 2nd, with a well flowered *Dendrobium densiflorum*.

For six exotic Ferns the Messrs. Gilbert were to the fore, with fine plants of *Gymnogramma Mertensi*, *Davallia pyxidata*, and *D. Mooreana*; while the 2nd prize fell to Mr. Marshall. Mr. Cresswell, gr. at Stoke Park, took 1st for the single specimen. In the class for six hardy kinds Mr. Leatherdale, gr. to F. Nicholson, Esq., came in 1st, with good plants of *Athyrium Filix-femina plumosum*, *Polystichum angulare Wollastoni*, and *Lastrea Filix-mas cristata*.

Amongst the cut flowers Roses, as already mentioned, made a fine display, Mr. B. R. Cant, of Colchester, taking 1st in the open class for thirty-six single trusses, and Mr. F. Cant, 2nd. The blooms most noteworthy in the 1st stand were Countess of Oxford, Heinrich Schultheis, Marie Finger, Maurice Bernardin, Horace Vernet, Dupuy Jamain, Ulrich Brunner, Mary Bennet, Pride of Waltham, Marie Verdier, Merveille de Lyon, and Victor Hugo. Mr. F. Cant had fine flowers of Her Majesty, A. Colomb, Madame J. Perrière, Exposition de Brie, and Baroness Rothschild.

In the open class for twelve triplets the prizes fell to the same exhibitors, and in the same order, the Rev. Foster-Melliar coming 3rd; the best blooms in the winning stand being Etienne Levet, Charles Lefebvre, Mary Bennet, Duke of Edinburgh, and Prince Arthur. For the best twelve Teas and Noisettes (open) these nurserymen again won, but the order was reversed. The 1st stand had fine blooms of Madame Lambard, Souvenir d'Elise, and the lovely tinted Madame de Watteville.

In the amateurs' class for thirty-six single trusses the Rev. Foster-Melliar was 1st, with a remarkably fine lot, and he was closely run by the Rev. H. A. Berners, who showed very strongly, and took 2nd. The best flowers contributed by the first-named exhibitor were Madame Verdier, Lady Mary Fitzwilliam, Ulrich Brunner, Harrison Weir, Earl of Pembroke, Horace Vernet, Duke of Edinburgh, Thomas Mills, Marie Van Houtte, and Catherine Mermet.

For twenty-four single trusses the Rev. J. Frere, of Burston Rectory, was 1st; Mr. Palmer, gr. to J. H. Powell, Esq., of Drinkstone, 2nd. For twelve, the Rev. H. A. Berners took 1st; the Rev. Foster-Melliar 2nd.

In the class for twelve Tea and Noisettes the Rev. H. A. Berners was again 1st, and the Rev. Page Roberts 2nd.

For six Roses of any variety, the Rev. H. A. Berners took 1st, with Her Majesty; Mr. Palmer 2nd, with Duke of Edinburgh.

In the class for six distinct kinds, D. G. Orpen, Esq., took 1st. For six Teas and Noisettes, the 1st prize was taken by Mr. Morris, gr. to Miss Penrice.

Herbaceous cut flowers were well represented, the Messrs. Gilbert taking 1st, with a fine stand; and Mr. Cox, gr. to B. Chevellier, Esq., 2nd.

For ballroom and bridal bouquets in the nurserymen's class, the Messrs. Gilbert were 1st; and in the amateurs' the premier prizes went to Mr. Andrews, gr. to the Hon. T. Lowther, M.P.

The stands of cut stove and greenhouse flowers were good, that from Mr. Rogers, gr. to Lord Rendlesham, who took 1st, being specially noticeable for the fine pieces of *Thunia Marshalliana*, *Odontoglossum*, *Pancratium*, and *Epidendrum vitellinum majus*; the 2nd fell to Mr. Palmer, who had the remarkable *Dendrobium Dalhousieanum* and *Sobralia xantholeuca*.

Fruit.—Excepting for Strawberries, which were

good for the season, there was not much competition in the fruit classes, but the collection contributed by Mr. Rogers, gr. to Lord Rendlesham, and who took 1st, was good. The Peaches and Nectarines were very fine and well coloured.

For three bunches of black Grapes, Mr. Rogers was 1st, with nice coloured Hamburgs; and Mr. E. Lewis, gr. to John Limmer, Esq., 2nd—larger bunches, and berries, not so well finished.

For three bunches of white Grapes, Mr. Holden, gr. to A. D. Halford, Esq., was 1st, with good large-berried Buckland Sweetwater; and Mr. Tibbenham, gr. to Lady North, 2nd, with the same variety, almost equally good.

The prize for six Peaches was won by Mr. Rogers, with large highly coloured Royal George; Mr. Chettleburgh, gr. to Col. Rous, coming in 2nd; and the last-named was 1st for six Pitmaston Nectarines, and Mr. Rogers 2nd with Elruge.

Cherries were remarkable for size, Mr. Rogers taking 1st with Tartarian, and Mr. Cresswell 2nd for May Duke, in the class for blacks; and Mr. Cox 1st in the whites, for Gov. Wood, a fine sweet, early sort, and which beat the dishes of Elton.

Strawberries were mostly represented by John Powell, which took 1st for weight and flavour, but why they should have been placed before the Queens was a puzzle.

Vegetables were very fine, especially the collection shown by Mr. Cresswell, gr. to — Charters, Esq., of Stoke Park, who had fine Asparagus, Vegetable Marrows, Tomatos, Carrots, Sutton's Seedling Potato, and Duke of Albany Peas; and Mr. Andrews, gr. to the Hon. T. Lowther, who took 2nd, had also a very nice lot.

EALING, ACTON, AND HANWELL.

JULY 11.—A wet morning greeted this, the opening of the first of all of the metropolitan suburban shows, in the grounds of the Indian Asylum, Ealing. None the less the show was, in all its departments, a very good one, the entries in excess of any previous year, and the attendance, in spite of the weather, very large. The cottagers' exhibits were remarkably good, and comprised 370 entries. The plant groups included a lovely arrangement of golden pyramidal *Celosias*, *Begonias*, *Gloxinias*, *Ixoras*, *Carnations*, &c., sent by Mr. Roberts from Gunnersbury Park Gardens. Messrs. C. Lee & Sons sent a fine collection of ornamental trees and shrubs; a beautiful lot of large flowered and fancy *Pelargoniums* came from Mr. C. Turner, Slough; a very nice lot of decorative plants from Messrs. Fromow & Sons, Chiswick; and an interesting group from Mr. B. S. Williams, Victoria Nurseries, Holloway. The best of the ordinary decorative groups were arranged by Mr. Hudson, Gunnersbury House Gardens; and Mr. A. Wright, Devonhurst, Chiswick, whose group was exceptionally pleasing and gay. Mr. A. Wright had the best four *Fuchsias* in very fine pyramids; Mr. W. Wright gr. to G. P. Greenfield, Esq., Hanwell, coming 2nd, with larger but less compact plants. Mr. Chadwick, gr. to E. M. Nelson, Esq., Hanger Hill, had the best six foliage plants, and the best six flowering plants—Mr. A. Wright having the best single specimen in a good *Bougainvillea glabra*.

Zonal *Pelargoniums* were in good form and plentiful, the best four being staged by Mr. Davis, gr. to H. G. Lake, Esq., Chiswick, who had *Oncida*, *Henry Jacoby*, *Sarah Bernhardt*, and *Rosa Bonheur*. Mr. A. Wright had the best six *Gloxinias*, and four fine pyramidal masses. A lovely group of *Orchids*, sent by G. F. Tautz, Esq., Hammersmith, attracted much attention.

In the cut flower department the Rose competition for twenty-four trebles brought a lot of fine flowers from Messrs. Paul & Sons, Cheshunt; C. Turner, of Slough; and G. Prince, Oxford, who took the prizes in the order given; whilst, in the class for twelve Teas, Mr. Prince was a good 1st, Mr. Rumsey, Waltham Cross, being 2nd, and Mr. Turner was 3rd. The local exhibitors made up a big show of Roses also, and Messrs. Veitch & Sons, Chelsea; and Messrs. C. Lee & Sons also staged large and very telling collections. *Gloxinias* in bunches make a lovely class, and here the best came from Mr. Long, gr. to E. B. Bridges, Esq., Acton; and Mr. Eaton, gr. to J. B. Bonnier, Acton, was 2nd. With twelve bunches of stove and greenhouse flowers, including several beautiful *Orchids*, Mr. Cowley, gr. to G. F. Tautz, Esq., was 1st, Mr. Chadwick coming 2nd, and Mr. Hudson 3rd. Mr. Davis had the best twelve bunches of hardy flowers, whilst Mr. Sax was well 1st with six hardy kinds. Mr. Collyer, gr. to Mrs. Morrell, Ealing, had the best twelve bunches of

zonal *Pelargoniums*; and Mr. Sutton, gr. to Mrs. Wilkinson, Ealing, had the best twelve bunches of show *Pelargoniums*. Sweet Williams, *Antirrhinums*, &c., were also abundantly shown, and in the same tent Messrs. Cheal & Sons, Crawley, put up a very interesting collection of hardy flowers, Roses, &c.

Fruit was shown in great plenty, and was very good also. Mr. Milsom, gr. to W. Lindell, Esq., Drayton Green, was placed 1st for an excellent collection of six dishes, and was also 1st in the class for two bunches of black Grapes, with excellent Black Hamburgs; whilst in the class for whites Mr. Wynne, gr. to F. Hicks, Esq., had the best in good Foster's Seedling. The latter was 2nd in the class for six dishes of fruit.

Truly wonderful Strawberries came from Mr. Garlandroy, gr. to Mrs. Field, Greenford, and who showed James Veitch, huge samples and handsome, and very fine Dr. Hogg. Mr. Eaton had the best single dish in good British Queen.

Very fine dishes of Cherries in Governor Wood and Empress Eugénie gained Mr. Chadwick the 1st place with two dishes; Mr. Hudson coming 2nd, with Black Tartarian and Bigarreau, also good. Mr. Chadwick had the best six Peaches in Noblesse.

Amateurs, single-handed gardeners, and cottagers had rare quantities of fruit, all of which it is impossible here to particularise.

Vegetables were so good as to almost give the lie to the assumption that the season is backward. Messrs. Milsom, Davis, and Chadwick took the 1st three prizes in the class for a collection of six kinds. Mr. Milsom had the best three dishes of Potatoes in wonderfully good Prizetaker, Beauty of Hebron, and Sanday's Seedling; Mr. W. Wright coming 2nd, with dishes of the two former and Early Rose. Mr. Milsom was also 1st with six fine Perfection Tomatos, and Mr. G. Weedon took the 1st place with Telegraph Cucumbers in that class. What exhibition Cucumbers should be was well shown by a couple of brace of seedlings from Mr. Lockie, Oakley Court, Windsor, the fruits being of moderate length, and perfect in form.

Children's collections of wild flowers made a wonderful show. No less than six pairs of judges were needed to get through the immense number of exhibits in competition.

TUNBRIDGE WELLS.

The thirtieth annual exhibition was held on Wednesday, July 11, in the picturesque grounds of the Spa, by kind permission of W. B. Dick, Esq. Every preparation had been made for a most successful exhibition; but the day turned out miserably cold and wet. The result, we fear, will be a considerable loss to the Society.

For the best six stove and greenhouse plants in flower, Mr. S. Pope, gr. to J. J. Barron, Esq., Holme-wood Park, took 1st honours, with *Anthurium Scherzerianum*, with over a hundred spathes; *Allamanda Hendersoni*, *Ixora javanica*, *Statice profusa*, *Stephanotis floribunda*, and *Clerodendron Balfourianum*. Mr. Offer, gr. to J. Warren, Esq., Handcross Park, Crawley, 2nd, showing good plants of *Allamanda nobilis*, *Statice Butcherii*, and *Ixora Williamsii*.

For six foliage plants, Mr. Pope was again 1st, with good plants of *Pandanus utilis*, *Croton angustifolius*, *Croton variegatus*, *Alocasia metallica*; Mr. Offer 2nd.

For a group of plants for effect—the leading feature (space 17 × 14 feet)—Mr. W. F. Smith, gr. to Mrs. Byass, Nevill Court, was 1st, with a tastefully arranged lot; Mr. Offer, 2nd.

For twenty-four stove and greenhouse plants in 12-inch pots, Mr. Offer was 1st, Mr. Smith 2nd.

For six exotic Ferns, Mr. Pope was 1st, his best plants being *Cyathea dealbata*, *Davallia Mooreana*, and *Microlepia hirta cristata*; Mr. Smith 2nd.

Group of Ferns, 17 × 14 feet—Mr. Webber, Tonbridge, 1st; 2nd, Mr. L. Dupond, gr. A. Alchin, Esq., Rustall.

Roses were a grand display. For forty-eight blooms Mr. A. Slaughter staged 1st with very good blooms; Mr. Balchin, Hassocks, 2nd.

For twenty-four blooms Mr. Harris, Horsham, was 1st; Mr. Warde, West Farleigh, 2nd; Mr. R. E. West, Reigate, 3rd.

For twelve, Mr. Harris was 1st, Mr. Steyning 2nd, Mr. Warde 3rd.

For twelve Teas, Mr. Harris was 1st; Mr. J. Dodds, Reigate, 2nd; Mr. G. Bunyard, Maidstone, 3rd.

For six of any one variety, Mr. Ward was 1st; Mr. Balchin, 2nd; Mr. Gorrington, Eastbourne, 3rd.

Fruit was very fine, and for the best twelve dishes

Mr. Hopgood, gr. to Sir Julian Goldsmid, was 1st; Mr. J. Snow, South Park, Wadhurst, 2nd.

Grapes.—For the best three bunches of black, Mr. Duncan Christy was 1st; Mr. Hopgood, 2nd. For three bunches of white Grapes Mr. Harvey, gr. to C. L. Hughes, Esq., Warrington, was 1st; Mr. G. Denton, gr. to A. F. Beeching, Esq., Ferox Hall, Tonbridge, 2nd.

For the best dish of Nectarines Mr. Pope 1st. Peaches: Mr. Hopkins, 1st. For the best Melon Mr. Hopgood 1st.

CHISWICK HORTICULTURAL.

JULY 12.—It was a remarkably good exhibition, held in the Royal Horticultural Society's Gardens, under the most depressing circumstances, for it rained all day. There were three tents, and the conservatory was also utilised.

Group for Effect.—The leading feature was the group arranged for effect, to occupy a space of 100 square feet, the 1st prize being a Jubilee Challenge Cup, value 26 guineas, presented by Mrs. S. A. Lee, to become the absolute property of the person winning it three times. In addition there was a prize of £4. This was won for the second time by Mr. William Brown, St. Mary's Grove Nursery, Richmond, who had a charming group in perfect taste. There was a carpet of Maidenhair Ferns, rising from which were *Orchids*, richly coloured *Crotons*, small *Palms*, &c., with a background of elegant *Palms*. Messrs. Hooper & Co., Covent Garden and Twickenham, were a good 2nd, with a tastefully arranged group; and Messrs. Fromow & Son, Sutton Court Nurseries, Chiswick, 3rd. The closely cropped and level sward upon which these groups were set down gave a charming finish to them. There was also a class for a group occupying a space of 60 feet, and here Mr. J. Hudson, the Gardens, Gunnersbury House, was a good 1st; and Mr. A. Wright, gr. to E. H. Walls, Esq., Dumbert, Chiswick, 2nd.

Plants.—Mr. Bates, the Gardens, Poulet Lodge, Twickenham, had the best six stove and greenhouse plants; Mr. E. Chadwick, gr. to E. M. Nelson, Esq., J.P., Hanger Hill House, Ealing, being 2nd. The best three plants in flower were shown by Mr. F. J. Hill, gr. to H. Little, Esq., Twickenham, who had *Cypripedium barbatum* superbum, *C. Dominianum*, and *Dendrobium thyrsiflorum*.

Fine-foliaged plants were shown in sixes, Mr. Chadwick being a good 1st; and Mr. A. Wright had six good exotic Ferns, Mr. Chadwick taking the 2nd prize. A very good half-dozen *Caladiums* came from Mr. Harding, gr. to W. E. Tautz, Esq., Chiswick. *Coleus* were fairly good, the best plants deficient in colour, and the best-coloured plants wanting in growth, Mr. A. Wright had the best *Fuchsias*; Mr. Milsom, gr. to W. Lindell, Esq., Drayton Manor, Ealing, being 2nd.

Zonal *Pelargoniums* and also Ivy-leaved varieties were shown in good character by Mr. Little and others. Tuberous-rooted *Begonias* were a good feature, and made some of the best exhibition plants of the day. There was a special class for nine plants, Mr. H. Little staging a very good lot indeed; Mr. A. Wright being 2nd. In the class for three plants, Mr. H. Little was again 1st.

The handsome special prizes offered by F. G. Tautz, Esq., for three *Orchids* brought three collections. Mr. H. Little being 1st with *Cattleya Sanderiana*, *C. intricata*, *Dendrobium densiflorum*, *Aërides Lobbii*, *A. odoratum* purpurascens, *Cypripedium Veitchii*, and another; Mr. Cowley, gr. to F. G. Tautz, Esq., Shepherd's Bush, was a good 2nd, his leading plants being *Cattleya gigas*, *Miltonia vexillaria*, *Dendrobium superbiens*, and *Cypripediums*. Some very fine *Lycopods* were shown by Mr. A. Wright.

Cut Flowers made a good feature. Mr. W. Rumsey, Waltham Cross, had the best twenty-four Roses, showing some very nice fresh blooms of Annie Wood, Richard Laxton, Grace Darling, General Jacqueminot, Marie Baumann, Duchesse de Morny, Victor Verdier, Star of Waltham, Senateur Vaisse, &c. 2nd, Mr. C. Turner, Royal Nursery, Slough, Mr. Chadwick had the best blooms, Mr. W. Langdon, of Ealing, being 2nd. Roses were also shown in sixes. Mr. Cowley had the best twelve bunches of cut flowers, staging a very fine lot, consisting largely of showy *Orchids*.

Some prizes offered by the Marquis of Bute for the best boxes of York and Lancaster Roses, brought a good competition.

Tub' Decorations were, as usual, a prime feature. Special prizes were offered by the Duke of Devon-

shire for three stands or vases, Mr. J. Hudson, The Gardens, Gunnersbury House, being 1st, with very tasteful arrangements.

W. E. Tautz, Esq.'s, special prizes for a stand or vase of flowers brought but one competitor in Miss S. A. Fromow, of Turnham Green; and the same lady was placed 1st, with a charmingly arranged basket of Roses. Mr. Prewett, Hammersmith, showed good bouquets, being 1st.

Fruit.—The special prizes offered by Mr. Leopold de Rothschild for six dishes of fruit brought a brisk competition, Mr. W. Bates being 1st, with good Foster's Seedling and Alicante Grapes, Queen Pine, Stirling Castle Peaches, Lord Napier Nectarines, and President Strawberries. 2nd, Mr. T. Donan, gr. to L. J. Parker, Esq., Ottershaw Park, Chertsey. Mr. Donan had the best two bunches of Black Hamburgh Grapes, Mr. Milsom being 2nd. Mr. Donan was also 1st with two bunches of white, having good Buckland Sweetwater; Mr. Bates being 2nd with Foster's Seedling. Strawberries were very good. Cherries, Raspberries, Currants, and Melons were fairly well represented.

Vegetables were, as might be expected, a leading feature. The special prizes offered by Messrs. Sutton & Sons, seed merchants, Reading, for their Reading Perfection Tomato brought some very fine fruit. Special prizes were also offered by Messrs. James Carter & Co., High Holborn, and Messrs. W. Fromow & Sons, for collections of six varieties of vegetables, which brought in each case brisk competition. One novel class was for a collection of garden produce, to consist of twelve plants, twelve bunches of flowers, six kinds of fruit, and six of vegetables, the prizes offered by Lady George Hamilton; but it was a disappointing one, nevertheless. A class for nine dishes of vegetables brought a very keen competition, and good Potatoes, Peas, and Tomatoes were shown in these several classes. There were also a number of vegetable classes for cottagers, and prizes were offered for school children for bouquets of flowers, and arrangements of flowers on a plate, for which there were numerous entries.

The show was greatly helped by contributions not for competition. Among these was a fine group of show and fancy Pelargoniums from Mr. Charles Turner, Royal Nursery, Slough; plants from Messrs. Hooper & Co., very finely arranged; groups from Mr. J. Roberts, The Gardens, Gunnersbury Park, Ealing, and Mr. May, The Gardens, Chiswick House; a fine group of variegated and ornamental hardy shrubs and trees, sent by Messrs. C. Lee & Son, Isleworth; and cut Roses from their Ealing nurseries; a choice collection of plants from Mr. B. S. Williams, Victoria Nurseries, Holloway; and cut Roses from Mr. C. Turner. All these were highly commended.

WINCHESTER HORTICULTURAL.

JULY 12.—The annual summer show of this Society was held in the Guildhall, the arrangements being as usual very satisfactorily carried out by the committee and the Secretary, Mr. C. Sherton.

Roses.—These formed the principal feature of the show, and were of fair quality this trying season. The entries amounted to 2800 blooms, but many failed to put in an appearance owing to injury from the rain at the last moment.

Seventy-two blooms, distinct. 1st, Mr. Frank Cant, Colchester, with a finished even lot of blooms Dr. Andry, Pride of Waltham, Thomas Mills, La France, A. K. Williams, Triomphe de Rennes, Marie Van Houtte, and Maréchal Niel, being only a few of the best; 2nd, Mr. B. R. Cant, with smaller blooms lacking a trifle in freshness.

Thirty-six blooms, distinct, in triplets.—Here Mr. B. R. Cant was 1st, with a fine stand of blooms; 2nd, Messrs. Keynes, Williams & Co., Salisbury, with blooms certainly fresh, but a trifle uneven in size.

Twenty-four distinct single trusses.—1st, Messrs. Keynes, Williams, & Co.; 2nd, Mr. G. Prince, Oxford.

Twelve distinct triplets of Teas or Noisettes.—1st, Mr. G. Prince, with an even stand, the best blooms being Madame Watteville, C. Mermet, Alba rosea; 2nd, Mr. F. Cant, whose blooms were smaller.

Twelve blooms of any one variety, dark.—Mr. F. Cant was 1st with Ulrich Brunner; 2nd, Mr. B. R. Cant, with the same variety, running very closely.

Twelve blooms of any light coloured variety.—Mr. G. Prince was 1st with Merveille de Lyon, fine in size, but slightly wanting in freshness; Mr. B. R. Cant was 2nd, with same variety.

Twelve blooms of any one variety. Mr. Frank

Cant was 1st, with Madame Watteville, very fine; Mr. G. Prince 2nd, with Souvenir d'un Ami.

The following classes were not open to nurserymen, and produced a good competition:—

Thirty-six distinct blooms.—Captain Ramsay, Ivory House, Fareham, Hants, was 1st, with a good stand, showing large and fresh flowers of Captain Christy, Marie Verdier, Pride of Waltham, and Duke of Wellington; Mr. W. Neville, gr. to F. W. Flight, Esq., Twyford, Winchester, was a close 2nd. The National Society's Silver Medal was awarded to Merveille de Lyon, in this stand, as the best hybrid perpetual in the amateurs' division.

Twelve distinct Teas or Noisettes from the Rev. F. R. Burnside Campden, Gloucester, were 1st, the National Society's Silver Medal for the best Tea or Noisette being awarded to Catherine Mermet in this stand.

Mr. Neville took 1st honours for six Teas or Noisettes and six H. P.'s, in threes, and for six Teas or Noisettes in threes.

Fruit was of moderate quality and sparingly shown.

Vegetables, on the whole, were good in quality and fairly plentiful. For nine sorts (two Potatoes allowed), Mr. W. Pope, gr. to the Earl of Carnarvon, Highclere Castle, Newbury, was 1st of four exhibitors, Magnum Bonum Cauliflowers, Veitch's Scarlet Model Carrots, White Elephant Onion and Ringleader Potato were his leading dishes; 2nd, Mr. Inglefield, gr. to Sir J. W. Kelk, Bart., Tedworth, Marlborough. Messrs. Sutton & Sons, Reading, offered prizes for six distinct varieties. Seven competed, Mr. Lye, gr. to W. H. Kingsmill, Esq., Sydmonth Court, Newbury, leading with even, clean samples.

For the best dressed stand of flowers Miss A. Flight led out of five, with an elegant arrangement; Miss B. Flight 2nd, also a capital stand.

Mr. E. Hillier, nurseryman, Winchester, staged the best bouquet; Miss Flight, 2nd.

ROYAL SOCIETY OF CANADA.

At a recent meeting the following papers were read:—

On the Nymphaeaceae. By George Lawson, Ph.D., LL.D.—An account was given of the general conformation, and of the arrangement of tissue systems, in the organs of these plants, and of special features in their organisation and minute anatomy. The South American Water Lily, *Victoria regia*, had been many years ago fully described and illustrated, as regards its general botanical characters and history, successively by Dr. Lindley, Sir William Hooker, and Mr. Thomas Moore, and by the author of the present paper; as regards its minute structure and development it was more carefully studied by Planchon, whose researches were published in the *Flore des Serres*, vol. vi., p. 249, &c.; and Trécul, who illustrated the more important facts of its structure and the development of organs in the *Annales des Sciences Naturelles Botanique*, 4 ser., i., pp. 145-172. Some facts well known a quarter of a century ago seem to be forgotten now. Lately De Bary, in the *Comparative Anatomy of Phanerogams and Ferns*, and J. H. Blake, of Cambridge, in Balfour's *Annals of Botany*, August, 1887, question the explanations given of the structure of the prickles of the *Victoria*, and especially the character of the ostiole or depression at its apex. The author of the present paper had shown, as long ago as 1855, the true character of these prickles, and that the ostiole had no special function as had been argued (and inferentially was not pathological as now suggested by Blake), but "a simple depression in the apex of the prickle of no physiological importance." (*Proceedings Bot. Soc. Edin.*, November, 1855.) In the same paper it was shown that the stomatodes or perforations of the leaf, were not mere holes, caused by insects, as argued by Trécul, and now accepted on his statement by Blake, but special structures of uniform size formed by surrounding modified cells, and comparable with the more complete reductions of parenchymatous tissue seen in submerged plants and in *Ouvirandra fenestralis*; moreover their special function in *Victoria* was indicated.

A series of large coloured drawings, illustrating the microscopical structure of the *Victoria regia*, was shown. These drawings were made by Dr. Lawson, partly from observations on the *Victoria* which flowered in Knight & Perry's nursery, King's Road, Chelsea, in the autumn of 1851, and partly from a plant which flowered in the Botanic Garden of Glasgow in 1855. They show the epidermis and stomata, with their chlorophyll granules, of the upper surface of the leaf; the surface cells, hairs, and hair-bases of the lower surface; the prickles in several aspects and

sections, showing their structure, the ostiole, &c.; the air spaces of the leaves and the large stellate processes projecting into them, whose surface has a bead-like sculpture reminding one of the much more minute markings on diatoms; colouring matter of the lower surface leaf-cells; the so-called "stomatodes" or perforations of the leaf, margined by more or less oblong, flat-sided cells, filled exclusively with red colouring matter; the upper surface petal cells, with thick translucent, slightly plicate or crimped cell walls, and filled with colouring matter of a rose colour of diverse depths of shade in different parts of the petal.

A statement is given of the historical facts connected with the nomenclature of Nymphaeaceae, with regard to the proposal recently made to give up the generic name *Nymphaea* to the yellow-flowered group so long known as Nuphar, and to reinstate Salisbury's name *Castalia* for the true white, red, and blue, Water Lilies. Acting on Professor Greene's suggestion, Mr. Britten had given very full details in the *Journal of Botany*, and these might be quite satisfactory to botanists in London or Paris, or wherever a large University library enabled the student to refer to original sources. Unfortunately, the great majority of Canadian students had no such facilities, and the additional information is given to meet their cases.

To Professor Greene is entirely due the credit of calling attention to *Castalia* at an opportune time when priority reigns paramount, and threatens indeed to exclude every other consideration. If, on occasion, an honourable member in a public assembly calls attention to the want of a quorum, or to the presence of strangers in the gallery, it is not usual to assume that his fellows were up to that moment ignorant of the fact.

The two volumes of König and Sims' *Annals of Botany* form a publication so full of important memoirs by European, British, and American botanists, written at a time of unusual activity in changes of classification and nomenclature that for the last eighty years it has been a constant reference-book for working botanists. A synopsis of the species of Nymphaeaceae was appended to the paper.

Observations on Early-ripening Cereals, by William Saunders.—Giving details of the work done in connection with the experimental farms in obtaining from other northern countries early ripening cereals, results are given of the testing of these in the north-west provinces of Canada including reports of earliness, productiveness and variations in quality of the same grain grown in different localities as shown by chemical analyses.

Contributions to the Bryology of the Dominion of Canada, by N. Conrad Kindberg, Ph.C., K.N.L., Professor in the University of Linköping, Sweden, and Professor John Macoun, M.A., F.L.S.—This paper contained descriptions of a large number of new species.

GLASGOW AND WEST OF SCOTLAND HORTICULTURAL.

This Society held its summer flower show in the grounds of the International and Industrial Exhibition, Kelvin Grove Park, Glasgow, on the 11th and 12th inst., £500 being offered in prizes. The main feature of the show was to have been the Rose, but the weather has been adverse to the production of good Roses or anything else, yet there was, all things considered, a fine display.

Ireland carried off the chief honours. In the class of sixty blooms, distinct varieties, Mr. Hugh Dickson, Belmont, Belfast, was an easy winner, with the following as prominent blooms in his stand:—Marie Baumann, La France, Lady Sheffield, Merveille de Lyon, Duke of Edinburgh, Paul Jamain, Alfred K. Williams, and Sénateur Vaisse; Messrs. Harkness & Sons, Bedale, Yorks, were a good 2nd; and Messrs. A. Dickson & Sons, Newtonards, a close 3rd in this class.

In the class of forty-eight bloom positions were reversed with the same competitors.

In the class of twenty-four blooms Mr. David Robertson, Mossend Nursery, Helensburgh, took the 1st position with an excellent collection in which the Teas were fine; and Mr. W. Montgomery, Cardross and Messrs. T. Smith & Son, Stranraer, respectively took 2nd and 3rd prizes. This class was open to Scotch growers only, and form the most important exhibit of Scotch-grown Roses in the show.

The class, twenty-four Teas or Noisette Roses, at least twelve distinct varieties, formed a wonderfully good feature. 1st, Mr. David Robertson, who had conspicuous blooms of Madame de Watteville,

Madame Willermoz, Perle des Jardins, Marie Van Houtte, Antoine Mermet, Reine Marie Pia, and Perle de Lyon. In this class Messrs. Harkness & Sons were 2nd.

In the class, twelve blooms Maréchal Niel, the best came from Mr. Tinsley, Lennoxtown, whose flowers were superb, and yet said to have been cut from the open air, which in such a season as we are passing through is something to congratulate Mr. Tinsley upon, for the like could hardly be found elsewhere in Scotland.

The Gloire de Dijon class was largely represented, the best coming from Gordon, Drymen; and the 2nd best from Hugh Dickson. Space will not admit of particularising the competition in the smaller classes, which, however, were well represented the competition in some cases being very close.

In the competition for the best basket of Roses, Messrs. Perkins & Sons, Coventry, stood a conspicuously good 1st; Mr. Alexander Raeside, Yorkhill, Glasgow, being a fair 2nd.

Gardeners' and Amateurs' Class.—Thirty-six blooms, to which was attached the Memorial Medal and £5, presented by the Veitch Memorial Trustees, Mr. William Parlange, Rosevale Row, was the champion. The best Hybrid Perpetual Rose in the exhibition was shown by Mr. Hugh Dickson, and the best Tea by J. Tinsley.

Pansies were an important feature of the show. The 1st prize of twenty-four blooms went to Mr. Sutherland, Lenzie; Mr. W. Storrie, Garngaber, Lenzie; and Messrs. William Paul & Co., Barghill Nursery, Bridge of Weir, Lenzie, being 2nd and 3rd respectively. Mr. Campbell, Blantyre, was an easy 1st, with a fine stand of twenty-four blooms of fancy Pansies; and Mr. Sutherland and Mr. Russel, Cawdor, Bishoprigg, closely divided the 2nd and 3rd honours respectively.

Violas or bedding Pansies, in bunches, were represented in tolerable numbers and good quality. The best in the open class of twenty-four was put up by Mr. J. Baxter, gr. to Colonel McCall, Daldowie, Broomhouse; Messrs. Dicksons & Co., Edinburgh, and Messrs. R. B. Laird, being 2nd and 3rd in order.

The class of eighteen bunches hardy herbaceous flowers brought out one of the finest features of the show. The 1st prize went to Mr. Tinsley, Mr. John Meiklam, Alpine Cottage, Bridge of Weir, and Mr. Charles Irvine, Jedburgh, being 2nd and 3rd in order. Had the latter set up in a better style he would have been in a better position, as he certainly had points in his favour, particularly as regards variety and rarity of species and varieties.

Twelve trusses of stove and greenhouse plants (Orchids excluded), were a good show, 1st, Messrs. Laird & Sons; Mr. Sutherland and Mr. Lyon, Greenhall, Blantyre, being 2nd and 3rd respectively. Six trusses of Orchid blooms, distinct:—1st, Mr. Grossart, Oswald House, Edinburgh; 2nd, Mr. Kidd, gr. to J. B. White, Esq., Ardarroch—a close 2nd.

Pot plants were not remarkable for numbers, although in some cases the quality was good. This was more noticeable in table plants than in any other class, which were indeed very superior, and the competition keen. In the class of twelve table plants, Messrs. R. B. Laird were 1st, closely followed by Mr. Grossart.

Three Orchids in flower placed Mr. Wilson, gr. to H. Steven, Esq., Westmount, 1st, with *Odontoglossum crispum*, *Miltonia Rozlii*, and *Epidendrum vitellinum majus*; Mr. Kidd, Ardarroch, was 2nd with *Cattleya Dowiana*, *C. Gaskelliana*, and *Odontoglossum Pescatorei*.

Fruit.—Though not a large feature this was an excellent one. The prize for a collection of six dishes went to Mr. McIndoe, Hutton Hall, Guisborough, there being no other competitor. The prize for four bunches of Grapes in two varieties was easily taken by Mr. McHattie, with very superior Black Hamburgs and Muscat of Alexandria, the latter being in finish more like autumn than summer fruits. Mr. McConnochie, Cameron House, Alexandria, was 2nd, with excellent fruit; and Mr. Barrie, gr., Woodstone Row, was a very good 3rd.

In two bunches of black Grapes Mr. McHattie was again 1st, with fine samples of Black Hamburg; Mr. Murray, Parkhall, Polmont, and Mr. Montgomery, Broomhill, Partick, 2nd and 3rd respectively. With two bunches of white Grapes Mr. McHattie was again 1st, with fine bunches of Muscat of Alexandria; while Mr. Wilson, gr. to A. L. Cochrane, Esq., was a good 2nd, with grand samples of Dr. Hogg; and Mr. Montgomery took the 3rd prize.

Peaches were remarkably fine, Mr. McHattie, Mr. Gallacher, and Mr. Wilson taking honours in the order named.

Nectarines were also exceedingly good, Mr. McIndoe taking 1st, with Stanwick Elruge; and Mr. McHattie pushing him close with Elruge.

Vegetables were poorly represented, the schedule providing little encouragement for this class of garden products. An excellent collection of eight distinct sorts was, however, tabled by Mr. McIndoe, who took 1st prize, and was closely pressed by Mr. Hogg, Aikenhead. The latter took 1st prize for an excellent collection of salad stuff.

Miscellaneous Exhibits were numerous, and in some instances very meritorious. Pyrethrums, fancy Pansies, cut flowers of tuberous Begonias, and Carnations, the latter especially good, were put up by Mr. Campbell, Blantyre. Mr. Alex. Lister, Rothesay, tabled a numerous set of fancy Pansies, which were besieged by the admirers of Pansies in this district, who are very numerous, and their comments were laudatory. The lot were remarkably good, and some individual flowers were new in character, and possessed every good feature of the class. Messrs. R. B. Laird & Sons, West Coates, Edinburgh, had a very superior lot of Pyrethrums beautifully set up in their own foliage in triangular sprays, in which the leading varieties were well represented. Mr. John Wilson, gr. to Jas. Clelland Burnes, Esq., Glentea, Hamilton, exhibited a fine specimen of *Stanhopea tigrina* with sixteen blooms in a small basket. From the Botanic Gardens, Glasgow, came a fine collection of officinal and medicinal plants and tropical fruits, a hundred in all. Messrs. J. & R. Thyne had a fine table of varied foliage and flowering plants, and Mr. Jas. Boyson, nurseryman, Helensburgh, a fine lot of pot and cut Roses.

The Scottish Mushroom Company exhibited fine samples of their productions from the Scotland Street Tunnel, Edinburgh. Mushrooms were shown in every stage of growth in a capacious Wardian case, and appeared to attract much attention from the general public. Mr. McIndoe, Hutton Hall, Guisborough, exhibited samples of two fine Melons, his own raising, one named Scarlet Premier, a medium-sized oval fruit finely netted; and another named McIndoe's Best of All, an oblate fruit, the colour of which was not described. Mr. Hugh Hanan, Bank Street, Edinburgh, exhibited samples of a very superior early Cauliflower, named Hanan's Extra Early Dwarf, from a cottage garden at Dalkeith, the owner of which had begun to cut crop on June 26. The judges commended the variety on account of its earliness and very superior quality.

EDINBURGH BOTANICAL.

JULY 12.—The last summer meeting for the season was held in the Royal Botanic Garden, Mr. Lindsay and afterwards Dr. Craig, in the chair.

It was resolved, on the motion of Mr. Taylor to empower the Council to petition against the new Universities (Scotland) Bill, now before the House of Commons, in so far as it enacted the transference of the Royal Botanic Gardens from the Treasury to the Edinburgh University.

A paper, by Dr. David Christison was read, summarising the results of ten years' observations by the late Sir Robert Christison, and his son, the author, "On the Annual Increase in Girth of Trees in the Royal Botanic Gardens, and at Cragiehall, near Edinburgh, from 1878 to 1887."

In two specimens of *Betula alba*, with a girth when first measured of 55.40 and 56.20—the girths in 1887 were respectively 56.05 and 59.85. The total of ten annual increments of *Fagus sylvatica* were 6.30, 7.50, 6.05, 7.20, 5.90, 6.05, and 4.90. These figures, given in inches and tenths, mark the effect of cold seasons during the decennial period. Five British Oaks, *Quercus rubra*, had girths at commencement of measurement of 65.40, 69.45, 120.35, 112.90, and 94.50, which had increased in October, 1887, to 67.30, 73.20, 127.25, 115.10, 96.15. In three specimens of *Quercus conferta* there was a total increase in ten years of 16.55, 13.60, and 12.60. Two of *Q. cerris* showed growth equal to 5.70 and 7.33, whilst one specimen of *Q. rubra* showed an increase of 4.50 inches. Limes showed a smaller increase; thus, of three specimens of *Tilia europæa*, the figures of growth in ten years were, 3.05, 3.50, and 1.75. Two Planes show a nearly approximate increase. The girth of *Castanea vesca* was found to have increased in the ten years, 9.45; *Liriodendron tulipifera*, 6.00; *Crataegus oxyacantha*, 5.50; *Ornus europæa*, 4.15; *Carpinus betulus*, 4.10; *Fraxinus*, 3.75.

Amongst the evergreen trees, four specimens of *Sequoia gigantea* showed a total increase of 8.10,

14.13, 13.70, 12.80, respectively; and the same number of *Cedrus Deodara* gave a decennial increase of 8.50, 6.00, 5.10, and 5.30; whilst three of *Araucaria imbricata* gave 4.15, 7.00, and 6.30; two specimens of *Abies Douglasii* gave 3.90 and 4.80; whilst the record of the Scots Fir (*Pinus sylvestris*) is a miserable one, being for three specimens, 0.75, 0.65, 0.60; two *Pinus excelsa* gave 2.40 and 4.80; a *Pinus Laricio* gave 4.10, and a *Pinus austriaca* gave 14.40; while *Abies Lowiana* gave 11.10, and *Cupressus Lawsoniana*, 7.70. The average annual increase in girth of the Yew, *Taxus baccata*, was 34 tenths of an inch. Of some noted Yews, Dr. Christison gives the following details:—

Taxus.	Height, June 26, 1879.	Average Increase.			
		Jan., 1878.	61 Years, 1815-78.	8 Years, 1879-87.	
No.	Feet. Inches.	Ft. In.	In.	In.	
41	27 9	27 11.5	.....	.....	0.3
42	29 7	30 2.5	.....	.....	0.64
43	22 5	23 3	4.14	.....	0.94
49	19 7	21 9.5	3.61	.....	3.06
50	24 1	27 0	4.41	.....	4.10

The increment of two specimens of *Quercus Ilex* showed an annual increase of .25 of an inch.

Mr. John Wilson, B.Sc., read a paper on "The Leaf Glands of Plumbaginæ." Axillary glands, corresponding to those which secrete copious mucilage in *Statice Holfordi* and like forms, were found to exist in all the *Statices* studied, in many *Armerias* and *Plumbagos*, in *Limoniastrium*, *Acantholimon*, *Ægialitis* and *Vogelia*. In all the species examined minute oval glands, composed of a few regularly disposed cells, were also found, in most on both sides of the leaf, on the bracts, and even on the calyx. The glands which secrete lime (which in many species forms conspicuous incrustation) were also considered. Mr. Wilson has undertaken the study of the distribution, relationship, and development of the different glandular structures in the order.

Mr. Robert Turnbull made a communication on the "Distribution and Structure of Water Stomata in Cotyledons," which was highly commended by Professor Balfour.

Mr. Richardson exhibited and presented beautiful micro-photographs of root of *Vanda suavis*, stems of *Clematis montana*, &c.

Mr. Lindsay gave in his monthly report on "Progress of Vegetation at the Royal Botanic Garden for June."

"The month of June was unusually cold and disagreeable, in marked contrast to that of last year. Easterly winds were almost of daily occurrence. No frost was registered during the month at the garden, but in various districts of Scotland several degrees occurred, and much damage has been done thereby. The lowest night temperature recorded at the Garden was 35°, which took place on the 1st of the month; other low readings were registered—on the 3rd, 37°; 4th, 37°; 11th, 38°; 14th, 36°. The lowest day temperature was 42°, on the 2nd; and the highest, 72° on the 17th. Notwithstanding the cold backward kind of weather experienced, trees and shrubs generally have seldom been seen in finer condition; both foliage and flower have been decidedly above the average. Variegated forms of *Taxus*, *Biota*, *Retinospora*, and other Conifers have developed unusually bright and finely coloured foliage, affording a pleasant contrast to the dark green leaves produced by the typical species. This is not the least remarkable feature of this abnormally cold summer, seeing that variegated plants, as a rule, require abundance of heat and sunshine to enable them to colour well. The fine warm summer and autumn of last year has doubtless had much to do with their present satisfactory condition.

Annals and other plants which depend entirely on the present season's growth for their well-being, are very far behind, and unless a change of weather come soon, will be a total failure.

Alpine and herbaceous plants, though somewhat late, are flowering freely, and owing to their not having suffered from drought this season, their period of flowering has been prolonged. On the rock-garden 430 species and varieties came into flower during June, making a total of 1052 since January 1 as against 1048 for the same period last year. Amongst the most conspicuous were:—*Achillea Clusiana*, *Aciphylla squarrosa*, *Allium McLeani*, *Anemone palmata*, *Aster diplotheoides*, *Aquilegia*

glandulosa, Aubrietia Leichtlini, Campanula abietina, C. Allioni, Chamaebatia foliolosa, Clintonia Andrewsiana, Coronilla iberica, Cypripedium spectabile, Delphinium nudicaule, D. cashmirianum \times cardinale, Dianthus alpinus, D. gelidus, D. superbus, Dryas Drummondii, Edraianthus pumilio, E. serpyllifolius, Epilobium latifolium, Gentiana pyrenaica, G. Weschniakowii, Heuchera sanguinea, Ianthé bugulifolia, Linaria origanifolia, Leontopodium alpinum, Lychnis viscaria splendens fl.-pl., Lonicera pyrenaica, Myosotis alpestris, Nardostachys jatamansi, Onosma taurica, Orchis maculata superba, Oxytropis uralensis, Patrinia nudicaulis, Pentstemon Lewisii, Polygonum sphaerostachyum, Ranunculus parnassifolius Saponaria cespitosa, Saxifraga pyramidalis, Scilla peruviana, Vaccinium Mortinii, Vancouveria hexandra, Veronica amplexicaulis, V. anomala, V. Colensoi, V. Hulkeana, V. vernicosa."

Mr. Bullen communicated extracts from the record of temperature, vegetation, &c., in the Botanic Garden, Glasgow, for June, 1888:—

"The lowest night temperature recorded during the month was 33° during the night of the 4th, the highest 49°, and that only on three nights. The mean day temperature in the shade has been correspondingly low, the highest reading was 75° but once only. The readings mostly varied from 60° to 65° since the dry weather set in on the 13th. Since then the day readings in the sun have been high, almost equalling those of June last year for intensity. During the latter half of the month 90° to 120° has been frequently registered; but the effect of the sun's heat has been greatly modified by the continuous cold east and north-east winds. Owing to the dry weather, and cold winds, particularly at nights both hardy and half-hardy plants are very backward of bloom, and the growth poor on all except the hardiest forms of vegetable life; even the foliage of our common deciduous trees is small as compared with last year, but fruit is abundant."

THE WEATHER.

THE PAST WEEK.

The following summary record of the weather for the week ending July 16, is furnished from the Meteorological Office:—

"The weather has again been dull, gloomy, and rainy over nearly the whole kingdom. Slight snow fell in different parts of the country during the early morning of the 11th, and was even observed as far south as the Isle of Wight. Towards the end of the period thunder and lightning were experienced at some of our southern stations."

"The temperature has continued below the mean in all districts, the deficit being as much as 6° to 8° over the greater part of England, and 4° to 5° over Ireland and Scotland. Soon after the commencement of the week it became abnormally low for the time of year, the maximum reading in London on the 11th and 12th not exceeding 54°; as the week advanced, however, the thermometer rose, and maxima between 71° and 74° were prevalent over south-western, southern, and central England. The absolute minima, which were recorded on rather irregular dates, were also very low, ranging from 35° in 'England, S.W.,' and 36° in 'Ireland, S.,' to 40° in 'Scotland, E.,' and 'Ireland, N.,' and 47° in the 'Channel Islands.' At Callompton the thermometer on the grass fell to 31° during the night of the 12th–13th, and at Strathfield Turgiss to 32°."

"The rainfall has been less than the mean in Ireland and the extreme north of Scotland, but more in all other districts, especially over the eastern and central parts of Great Britain."

"Bright sunshine has again been very deficient generally. In 'England, N.E.,' the percentage of the possible amount of duration was only 8, and in most other districts it varied between 12 and 23. In 'England, S.W.,' however, 32 per cent. was recorded, and in the 'Channel Islands' 52 per cent."

MEAN TEMPERATURE OBSERVED AT CHISWICK DURING THE WEEK ENDING JULY 28. (AVERAGE OF FORTY-FOUR YEARS.)

July 22	63°·4	July 26	63°·4
" 23	63°·4	" 27	63°·3
" 24	63°·4	" 28	63°·3
" 25	63°·4	Mean for the week	63°·4

[Accumulated temperature indicates the combined amount and duration of the excess or defect of temperature above or below 32° F. for the period named, and is expressed in Day-degree—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	Above or below the Mean for the week ending July 16.	TEMPERATURE.				
		ACCUMULATED.				
		Above 49° for the Week.	Below 49° for the Week.	Above 49° difference from Mean since Jan. 3, 1888.	Below 49° difference from Mean since Jan. 3, 1888.	
Principal Wheat-producing Districts.		Day-deg.	Day-deg.	Day-deg.	Day-deg.	
0. SCOTLAND, N. ...	4 below	62	0	— 140	+ 201	
1. SCOTLAND, E. ...	4 below	80	0	— 271	+ 157	
2. ENGLAND, N.E. ...	8 below	69	0	— 313	+ 73	
3. ENGLAND, E. ...	7 below	88	0	— 253	+ 154	
4. MIDLAND COS. ...	7 below	83	0	— 295	+ 150	
5. ENGLAND, S. ...	6 below	95	0	— 332	+ 204	
Principal Grazing, &c., Districts.						
6. SCOTLAND, W. ...	4 below	81	0	— 202	+ 107	
7. ENGLAND, N.W. ...	6 below	83	0	— 258	+ 117	
8. ENGLAND, S.W. ...	5 below	94	0	— 233	+ 254	
9. IRELAND, N. ...	5 below	83	0	— 193	+ 67	
10. IRELAND, S. ...	5 below	94	0	— 172	+ 113	
— CHANNEL ISLANDS	5 below	102	0	— 243	+ 154	

DISTRICTS.	More or less than the Mean for the Week.	RAINFALL.		BRIGHT SUNSHINE.	
		No. of Rainy Days since Jan. 3, 1888.	Total Fall since Jan. 3, 1888.	Percentage of possible Duration for the Week.	Percentage of possible Duration since Jan. 3, 1888.
		Tenths of Inch.	Inch.		
Principal Wheat-producing Districts.					
0. SCOTLAND, N. ...	1 less	127	19.9	36	31
1. SCOTLAND, E. ...	7 more	110	16.0	17	31
2. ENGLAND, N.E. ...	10 more	101	13.3	8	26
3. ENGLAND, E. ...	3 more	103	12.3	13	26
4. MIDLAND COS. ...	7 more	94	12.7	16	26
5. ENGLAND, S. ...	1 more	96	13.6	22	27
Principal Grazing, &c., Districts.					
6. SCOTLAND, W. ...	4 more	99	21.7	22	32
7. ENGLAND, N.W. ...	6 more	102	13.2	11	28
8. ENGLAND, S.W. ...	2 more	103	16.8	32	34
9. IRELAND, N. ...	2 less	105	17.9	12	28
10. IRELAND, S. ...	4 less	96	19.0	23	33
— CHANNEL ISLANDS	2 more	118	15.4	52	38

Obituary.

THE death of Mr. CHARLES PITMAN some fortnight or so ago, removes from the ranks of the horticultural profession a man who in his day filled a unique position. He was for over fifty years the ground or outside foreman to Messrs. Osborn & Son, The Nurseries, Fulham. He was considered in the nursery-trade to be one of the very best men in that capacity, a remarkably good knifeman, and a first-class grower of fruit and ornamental trees and shrubs, and a clever propagator of hardy stock generally. His knowledge of stocks for fruit trees, and their suitability for particular varieties of fruits, was something remarkable. He possessed a great knowledge of the names of rare trees and shrubs, and was held up as a most reliable authority upon such matters. He was also greatly respected by all in the nursery trade. Under his management the Fulham nursery was noted

for the fine collection of fruit and ornamental trees grown there, and it was regarded as a good school for youngsters, and many an outdoor foreman has reason to be grateful for the tuition gained under Charles Pitman. He was pensioned off previous to the breaking up of the firm, and ended his days in quiet at the ripe age of over eighty years. R. D.

NOTICES TO CORRESPONDENTS.

INTELLIGENT READERS, do PLEASE NOTE that letters relating to ADVERTISEMENTS, or to the supply of the Paper, should be addressed to the PUBLISHER, and that all communications intended for publication, as well as specimens and plants for naming, should be addressed to the EDITOR. Such communications should be written on one side only of the paper, and sent as early in the week as possible. Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

APPLES: A. H. We cannot name the fruits, send again when in good condition.

ARTIFICIAL MANURES: G. S. X. *Artificial Manures: How to Make, Buy, Value, and Use.* By Alfred Sibson, F.C.S. (W. Ridgway, 169, Piccadilly, London, W. Price 1s., or less.

BOUGAINVILLEA: W. L. Yes, in the absence of any rule to the contrary. If the plant was grown and flowered in a greenhouse, it is a greenhouse plant.

CARBOLIC ACID FOR WEEDS ON WALKS: C. S. One ounce to one gallon of water. Apply with a rose watering can. The box or other live edging must be protected. The sea water you purposed using to kill weeds is of no use.

CORRECTION.—In article on "White Pinks," last week, p. 46, col. c, five lines from bottom, read "fat" for "pink" flowers.

DEADLY NIGHTSHADE: W. Bennett. This is *Atropa belladonna*. *Solanum dulcamara*—often, but erroneously, so called—is much less poisonous.

FLOWER HOLDERS: *Rosa*. Messrs. G. Smith & Co., Commercial Road, Pimlico, S.W., are the makers.

INSECTS: D. C. A microscopic examination of the Melon stems and leaves has failed in showing any trace of insects. The numerous small patches of white mould all over the leaves seem to be embedded in the substance of the plant. W.—W. E. The leaf of *Odontoglossum crispum* sent exhibits a large number of small dark coloured oval pustules, each covered with a thin transparent film like the cover of some small scale insects, but with a high power we could not discover any trace of insects. W. [Look for a further answer next week.]—F. W. Z. Your *Oncidium* leaves show a number of small elongated brown patches, but no trace of insects of any kind. W.

MELONS: G. P. The roots are affected with the root-worm. Possibly the *Torenia*s are so also, but we cannot find them.

MUSHROOM: H., Peckham. A very fine one, measuring 12 inches in the largest diameter across the flat top.

NAMES OF PLANTS: A. B. 1, *Heuchera Richardsonii*; 2, *Tussilago fragrans*; 3, *Heracleum giganteum*.—J. K. *Populus monilifera*: a form of *P. canadensis*.—C. H. *Cytisus capitatus*.—A. O. W. 1, *Eucalyptus coriacea*, easily recognised by the nerves of the leathery leaf being nearly longitudinal—one of the hardest species; 3, and 4, *E. viminalis*, known by the opposite leaves (when young), and by the three-flowered umbels; 5, *E. coccifera*; 6, probably *E. globulus*. *Ch. Ndm.*—Mrs. H. T. Goat's-beard (*Tragopogon pratensis*).—Pontypool. *Ranunculus aquatilis*.—A. H. The Bee Orchis, *Ophrys apifera*—not rare in chalk districts, but it is rare to see it in flower so late in the year.—H. & Co. *Glycerium saccharoides*.—C. W. S. *Asteriscus maritimus*.—C. A. L. 5, *Veronica teurcium*; 6, *Scutellaria violacea*.—J. S. W. 1, *Veronica officinalis*; 2, *Heracleum sphondylium*; 3, *Peucedanum sativum*; 4, *Scutellaria altissima*.—Constant Reader. 2, *Saxifraga arizonae* var. *recta*; 3, *S. Hostii*; 4, *S. arizonae*.—*Bulbulus*, *Leyton*. *Cyrtanthus obliquus*, Ait. J. G. P. *Stanhopea insignis*—ordinary form. *Hortus*. *Nigella damascena*.

—*J. B. Oncidium Batemannianum*.—*G. W. R.* A good bright Cattleya Gaskelliana.—*Twenty Years' Subscriber*. *Dendrobium moschatum*.—*G. W. C.* The bush is *Prumnopitys elegans*, *Oncidium hastatum*, and *Lycaste cruenta*; the spotting is accidental.—*J. W. S. & Co.* 1, *Eria bicolor*; 2, *Miltonia Russeliana*.

ORNAMENTAL FOLIAGED TREES AND BUSHES FOR AUTUMN PLANTING: *Midland*. Deciduous "picture plants" are now so many that we must refer you to some good trade list for their names. We can merely mention a few of the more indispensable ones, viz., *Prunus pissardi*; Japanese Maples in great variety—nice neat-habited plants, with foliage of much beauty and diversity; Privets of various variegated forms; variegated Elders, white, creamy-white, and yellow; *Acer pseudo-platanus* *Nizelli*, purple, green, yellow leaf; *Acer argutum*, and *A. macranthum*; *Ptelea trifoliata aurea*; variegated pyramidal Oaks; Purple Beech in many forms; purple-leaved Hazel; Golden Catalpa; variegated Poplars; *Berberis vulgaris purpurea*; *Halimodendron argenteum*, silvery foliage; *Cornus mas variegata*; and *C. sanguinea*, the latter with bright crimson young shoots.

PEA, EXONIAN: *R. V. & Son*. An excellent, new variety of marrow Pea—early, prolific, podding almost down to the ground, the pods short but well filled. It was past its best; having been in perfection three weeks ago.

PHYLOXERA: 40. Certainly not; a bad case of mildew.

POPLAR: *Camjee*. The tree has been wounded, perhaps by some boy tugging at the shoots. Fungus spores enter the wound, germinate therein, prevent the proper healing of the bark, and increase and multiply; hence the canker, which is of very common occurrence in this tree. The fungus is probably *Nectria ditissima*. *H. M. W.*

SMALL ORCHARD, CORDONS, &c.: *Mulberry*. In your district, bushes and half-standards will be best for the inside parts of the quarters, and espalier and cordons at the sides near the walks. With regard to Cherries (especially Morellos), and such Plums as Greengage, Orleans, and Mirabelle, these are, perhaps, best grown as half-standards. Apples and Pears should be obtained on dwarfing stocks, so as to secure early returns. Cordons are easily managed, and can be made to produce fine fruits by thinning the young fruits and surface feeding. If your orchard is open to those points from which the heaviest gales come, it would be advisable to use generally the espalier form of training for most of the Apples and Pears, running the espaliers across the quarters at from 20 to 30 yards from line to line. These stiff walls of foliage break the force of the wind greatly, and save their own crop and that of the bushes growing between the lines.

TOMATO AND CUCUMBER GROWERS: *J. B. Manchester*. There are so many engaged in the business now, we cannot inform you who is the greatest. Some of the salesmen in Covent Garden Market could give you the information if applied to.

VINE LEAVES: *G. T. Coates*. The leaves have been scalded by sun-heat—perhaps during a sudden burst of sunshine following cloudy days. The ventilation of modern-built houses, roofed with large panes of glass, requires watchful care to avoid such accidents.

CATALOGUES RECEIVED.

KELWAY & SONS, Langport, Somerset—Wholesale Lists of Plants, Trees, and Seeds.

B. S. WILLIAMS, Victoria and Paradise Nurseries, Upper Holloway, London, N.—General Plant Catalogue.

T. METHVEN & SONS, 15, Princes Street, Edinburgh, N.B.—Bulbs.

DEANE & CO., 46a, King William Street, London Bridge, E.C.—Greenhouses, Heating Apparatus, &c.

E. H. KRELLAGE & SON, 17 to 27, Kleinen Houtweg, Haarlem, Holland—Wholesale Bulb List.

JOHN LAING & SONS, Forest Hill, London, S.E.—Roses.

L. SPÄTH, Rixdorf, Berlin—Bulbs, Roses, &c. KRUIT & HOMMES, Haarlem, Holland—Wholesale List of Dutch Bulbs, &c.

COMMUNICATIONS RECEIVED:—W. S. M.—T. W.—D. M.—P. M.O., Capetown.—J. C.—A. O. W. (yes, please).—J. Y. J.—Prof. Henriques, Comm. ra.—Dr. Ritzema Bos, Wageningen.—R. M. R. (we regret the omission).—K. J. (when the time comes—may it be long first).—G. J. (Paris).—G. F. W.—H. Low & Co.—J. B.—R. V. & S.—M. Foster.—R. D.—J. J. W.—J. D.—W. A. H.—H. B. P.—T. S. W.—G. Fennell (next week).—W. G. S.

Correspondents sending plants or fruits to be named, or asking questions demanding time and research for their solution, must not expect to obtain an answer to their enquiries in the current week.

MARKETS.

COVENT GARDEN, July 19.

[We cannot accept any editorial responsibility for the subjoined reports, which, however, are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list, and who are responsible for the quotations. It must be remembered that these quotations represent averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the supply in the market, and they fluctuate, not only from day to day, but often several times in one day, and therefore the prices quoted as averages for the past week must not be taken as indicating the particular prices at any particular date, and still less can they be taken as guides to the prices in the coming week. ED.]

THE wet weather is considerably affecting supplies of soft fruit, Cherries especially reaching us in very bad condition, and Currants colouring slowly. Hothouse goods in full supply; prices lower. *James Webber, Wholesale Apple Market.*

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Cherries, half-sieve...	3 0-6 0	Lemons, per case	12 0-21 0
Currants, blk., half-sieve	3 6-4 0	Melons, each	1 0-3 0
— Red, half-sieve...	2 3-3 0	Peaches, dozen	2 0-10 0
Grapes, per lb.	1 6-3 0	Pine-apples, Eng. lb.	2 0-...
Kent Cobs, 100 lb.	40 0-45 0	— St. Michael, each	2 0-5 0
		Strawberries, lb.	0 6-1 0

VEGETABLES.—AVERAGE RETAIL PRICES.

	s. d. s. d.		s. d. s. d.
Artichokes, p. doz.	6 0-...	Mushrooms, punnet	1 0-1 6
Asparagus, Fr. bund.	1 6-4 0	Mustard and Cress,	...
— English, 100	3 6-6 0	punnet	0 4-...
Beans, Kidney, lb.	1 0-...	Onions, per bushel	5 0-...
Beet, red, per dozen	1 0-2 0	Parsley, per bunch	0 4-...
Carrots, per bunch	0 9-...	Potatoes, per cwt.	4 0-5 0
Cauliflowers, each	0 8-...	— kidney, per cwt.	4 0-5 0
Celery, per bundle	1 6-2 6	Rhubarb, per bundle	0 4-...
Cucumbers, each	0 9-1 0	Shallots, per lb.	0 6-...
Endive, per dozen	2 0-...	Spinach, per bushel	2 6-...
Green Mint, bunch	0 4-...	Tomatos, per lb.	1 0-...
Herbs, per bunch	0 4-...	Turnips, per bunch,	...
Leeks, per bunch	0 6-...	new	0 8-...
Lettuce, per dozen	1 6-...	Vegt. Marrows, each	0 6-...

POTATOS.—Jersey Flukes, 6s. to 7s.; do. Kidneys, 6s. to 7s. per cwt.; English, 4s. to 5s. per bushel. Markets blocked, and samples much diseased.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Aralia Sieboldi, doz.	6 0-18 0	Fuchsias, doz.	3 0-8 0
Bouvardias, per dozen	9 0-12 0	Heliotropes, dozen	4 0-6 0
Calceolarias, dozen	3 0-6 0	Hydrangeas, dozen	9 0-18 0
Carnations, per doz.	6 0-18 0	Liliums, var., doz.	18 0-30 0
Coleus, dozen	3 0-6 0	Lobelias, per dozen	3 0-6 0
Crassula, per doz.	9 0-18 0	Marguerites, doz.	9 0-12 0
Cyperus, per dozen	4 0-12 0	Mignonette, 12 pots	3 0-6 0
Dracena terminalis,	...	Musks, dozen	1 6-3 0
per dozen	30 0-80 0	Myrtles, per dozen	6 0-12 0
— viridis, per doz.	12 0-24 0	Palm in var., each	2 6-21 0
Eucyomus in var.,	...	Pelargoniums, doz.	6 0-15 0
per dozen	6 0-18 0	— Ivy-leaf, dozen	3 0-6 0
Evergreens, in var.,	...	— scarlet, dozen	3 0-6 0
per dozen	6 0-24 0	Rhodanthe, per doz.	6 0-9 0
Ferns, in var., doz.	4 0-18 0	Scented Geranium, doz	3 0-6 0
Ficus elastica, each	1 6-7 0	— Verbena, per doz.	4 0-6 0
Foliage plants, vari-	...	Spiraeas, dozen	6 0-12 0
ous, each	2 0-10 0	Zinnia, per dozen	4 0-6 0

BEDDING OUT PLANTS.

Per dozen, 1s. to 2s.; per box, 1s. to 3s.

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Asters, 12 bunches	4 0-6 0	Mignonette, 12 bun.	3 0-6 0
— French, per bun.	2 0 3 0	Pansies, 12 bun.	1 6-3 0
Bouvardias, per bun.	0 6-1 0	Pelargoniums, 12 spr.	0 6-1 0
Carnations, 12 blms.	1 0-2 0	— scarlet, 12 spr.	0 3-0 6
— dozen bunches	4 0 6 0	Pinks, 12 bun.	3 0-6 0
Chrysanthemums,	...	Poppies, 12 bun.	4 0-6 0
annual, 12 bun.	1 0-3 0	Primulas, double, 12	...
Coriander, 12 bun.	1 6-3 0	sprays	0 9-1 0
Delphiniums, 12 bun.	3 0-6 0	Pyrethrums, 12 bun.	2 0-4 0
Eucharis, per dozen	3 0-6 0	Rhodanthe, 12 bun.	4 0-6 0
Forget-me-nots, 12	...	Roses, Tea, per doz.	0 6-1 6
bunches	2 0-4 0	— coloured, dozen	2 0-4 0
Gardenias, 12 blooms	1 6-4 0	— red, per dozen	1 0-2 0
Heliotropes, 12 spr.	0 6-1 0	— 12 bunches	3 0-6 0
Iris, various, 12 bun.	3 0-9 0	— Safrano, dozen	0 9-1 6
Lilium longiflorum,	...	— Moss, 12 bun.	4 0-12 0
12 blooms	3 0-5 0	Spiraea, 12 bun.	4 0-6 0
— candidum, 12 bl.	0 6-1 6	Stephanotis, 12 spr.	2 0 4 0
— per bunch	1 6-2 6	Sweet Peas, 12 bun.	3 0-6 0
— (Orange) per bun.	1 0-2 0	Sweet Sultan, 12 bun.	3 0-6 0
Marguerites, 12 bun.	3 0-6 0	Tuberose, 12 blms.	0 6-1 0

. Orchid bloom in great variety, but the demand not very good.

SEEDS.

LONDON: July 18.—Messrs. John Shaw & Sons, seed merchants, of 37, Mark Lane, E.C., report a very poor attendance on the market to-day. A speculative inquiry has sprung up for Trefoil at hardening rates. For Trifolium also higher prices are asked. The prospects of both these articles are badly spoken of, owing to the continued unfavourable weather. Mustard and Rape seed are but little inquired for. Bird seeds move off slowly on former terms. Blue Peas continue exceedingly cheap.

CORN.

Averages.—Official statement showing the average price of British corn, imperial measure, in the week ended July 14:—Wheat, 31s. 6d.; Barley, 28s.; Oats, 16s. 8d. For the corresponding week in 1887:—Wheat, 31s.; Barley, 20s. 5d.; Oats, 16s. 9d.

FRUIT AND VEGETABLES.

SPITALFIELDS: July 18.—Very large supplies of all kinds of fresh vegetables, fruit, &c. Demand brisk, at undermentioned prices:—Fruit: Raspberries, 4d. to 6d. per punnet; red Currants 4s. 6d. to 5s. per half sieve; black Currants, 3s. 9d. to 4s. do.; Strawberries, 2s. 6d. to 3s. 6d. per peck; Cherries, 3s. 6d. to 4s. 6d. per half sieve; Gooseberries, 2s. 3d. to 2s. 9d. do.; English Tomatoes, 5s. to 6s. per peck of 12 lb. Vegetables: Cabbages, 1s. to 2s. 6d. per tally; Peas, 2s. 6d. to 3s. 6d. per bushel; do., 4s. to 5s. per sack; new Carrots, 2s. to 2s. 6d. per dozen bunches; Turnips, 2s. to 2s. 6d. do.; spring Onions, 1s. 6d. to 2s. 6d. do.; Parsley, 1s. to 1s. 6d. do.; Mint, 1s. to 1s. 6d. do.; Rhubarb, 1s. 6d. to 2s. 6d. per dozen bundles; foreign Onions, 7s. 6d. to 8s. per box of about 112 lb.; frame Cucumbers, 2s. to 3s. 6d. per dozen; Endive, 1s. to 1s. 6d. do.; Cos Lettuces, 2d. to 4d. per score; Beetroots, 6d. to 8d. per dozen.

STRATFORD: July 17.—Both trade and supply have been good during the last week. Quotations:—Cabbages, 2s. to 3s. per tally; Turnips, 3s. to 4s. per dozen bunches; Mangels, 16s. to 21s. per ton; Watercress, 6d. to 8d. per dozen; Gooseberries, ripe, 3s. per half sieve; do. green, 2s. 3d. to 2s. 6d. do.; black Currants, English, 4s. do.; Cherries, do., 4s. do.; Apples, 7s. to 9s. per box; Strawberries, 3s. per peck; Raspberries, 4s. per dozen punnets; Tomatoes, 9d. to 1s. per box; Cucumbers, 1s. 2d. to 2s. per dozen; Peas, 5s. to 7s. per bag.

POTATOS.

BOROUGH AND SPITALFIELDS: July 17.—Large supplies, dull sale. Quotations:—Jersey kidneys, 5s. to 6s.; do. rounds, 4s. 6d. to 5s. 6d.; Cherbours, do., 4s. to 6s. per cwt.

SPITALFIELDS: July 18.—Quotations.—Jersey kidneys, 3s. 6d. to 4s.; do. flukes, 4s. to 5s.; St. Malo rounds, 3s. to 3s. 6d.; Lisbon do., 4s. to 4s. 6d.; Cherbours, do., 3s. to 3s. 6d.; do. flukes, 4s. to 4s. 6d. per cwt.

STRATFORD: July 17.—Jersey kidneys, 80s. to 90s.; St. Malo rounds, 40s. to 50s. per ton; Dutch, 1s. 6d. per bushel; Cherbours kidneys, 80s. to 90s.; do. rounds, 70s. to 80s. per ton.

Imports.—The imports into London last week consisted of 1055 boxes from Barfleur, 2638 packages from Jersey, 1492 packages from St. Malo, 941 boxes from Cherbours, 2526 cases from Rouen.

HAY.

Averages.—The following are the averages of the prices obtained at the various metropolitan markets during the past week:—Clover, prime, 94s. to 118s.; inferior, 76s. to 86s.; hay, prime, 90s. to 114s.; inferior, 75s. to 84s.; and straw, 26s. to 46s. per load.

BOXWOOD IN TREBIZOND.—It is interesting to know, from an official source, that there is a good prospect of the supplies of Boxwood from Trebizond increasing. It is stated that the contests between the authorities and the rural classes as to the ownership of Box trees was brought, in December last, to a termination satisfactory to the villagers, consequent on the action of the British Consulate in behalf of an English firm whose interests were thereby involved. If prices improve, therefore, Boxwood will once more become an important export to Europe, freed, as it has now been, from the vexatious interference of local officials.

SAVE HALF THE COST. GARSIDE'S SILVER SAND,

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GISHURST COMPOUND, used by leading Gardeners since 1859 against Red Spider, Mildew, Thrips, Green Fly, and other Blight. 1 to 2 ounces to the gallon of soft water; 4 to 16 ounces as winter dressing for Vines and Orchard-house Trees; and in latter from the cake against American Blight. Has outlived many preparations intended to supersede it. Boxes, 1s., 3s., and 10s. 6d.

GISHURSTINE keeps Boots dry and soft on wet ground. Boxes, 6d. and 1s., from the Trade. Wholesale from PRICE'S PATENT CANDLE COMPANY (Limited), London.

NETTING.—Buy your Netting direct from the Makers. Write for sample piece, of our best quality, waterproof, tanned and oiled, 4 yards by 50 yards, 8s.; second quality, 5s. 6d. Any size made to order. Trade supplied. SPASHETT AND CO., Net Manufacturers, Lowestoft.

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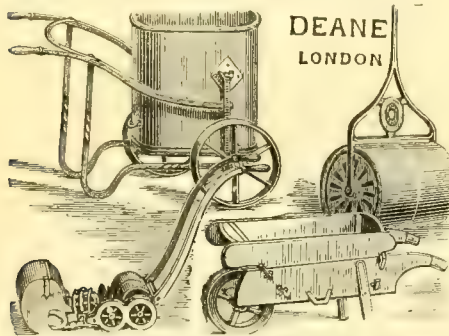
GARDEN NETTING, 2 yards wide, 1½d., or per 100 yards, 10s.; ditto, 4 yards wide, 3d., or per 100 yards, 20s. SCIRM CANVAS, 1 yard wide, 3d.; 1½ yard, 4½d.; and 2 yards, 6d. per yard.

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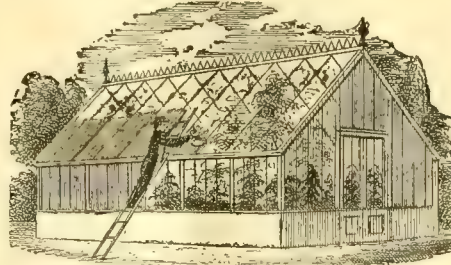
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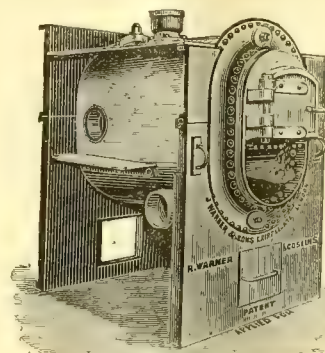
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			20x14	24x18
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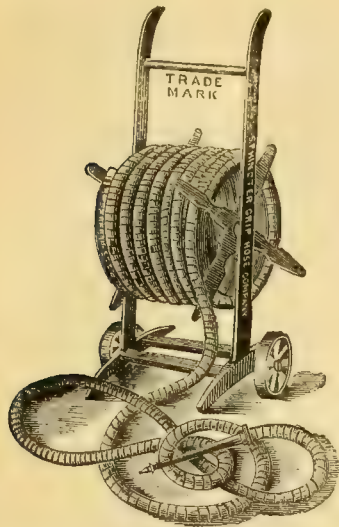
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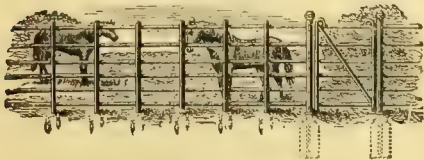
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Branch Pipe, with Tap, Jet, and Rose complete	5/6	7/8	9	10 1/2	12
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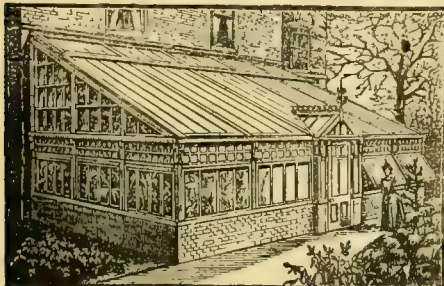
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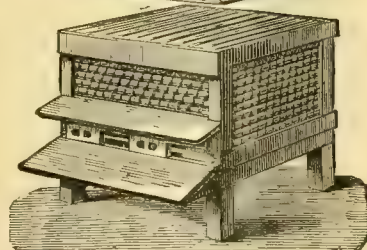
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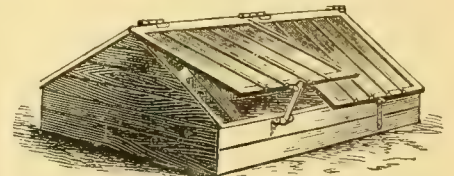
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SHOPMAN or MANAGER.—Nine years in the trade. Lately Travelled for a London House. First-class references.—H., 21, Sharncliffe Road, Lewisham High Road, New Cross, S.E.

SHOPMAN or ASSISTANT in the Seed or Seed and Florist Trade.—Age 20; four years' experience. Good reference.—J. B. C., 67, Cleaveland Road, Surbiton, Surrey.

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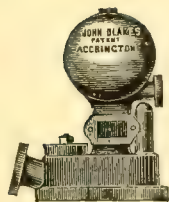
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No Cost for Motive Power, which is obtained from a Stream of Water passing through the Ram.

NO OILING OR PACKING REQUIRED.

MADE IN SIZES TO RAISE FROM 300 TO 500,000 GALLONS PER DAY. WILL FORCE TO A HEIGHT OF 1500 Feet.
SPECIAL RAMS FOR HIGH FALLS, to send up One-Third of the Water passing through them.

Fig. A.



This Ram raises a portion of the same water that works it.



View of Ram Worked by Water from a Spring, and supplying the House and Garden on the Hill.

This Ram, whilst worked by a stream of impure water, will pump clean water from a well or spring.

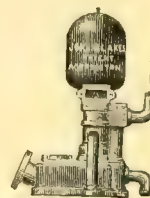


Fig. B.

EXTRACTS FROM TESTIMONIALS.

VILLAGE WATER SUPPLY.

From Mr. THOMAS VARLEY,

Agent to the Trustees of the late William Roundell, Esq., Gledstone Estate, West Marton, Skipton, August 11, 1887.

"DEAR SIR,—The Patent Hydraulic Ram you fixed five years ago on this estate is still working as well as it did on the day it started. It is driven by spring water carried along the hillside in 950 yards of iron pipe, and forces up an abundant supply to an underground tank on the hill at a distance of 2 miles from, and at an elevation of 280 feet above the ram. The water is then gravitated through several pipes and branches, having a total length of about 4 miles, for the supply of the mansion, gardens, stables, estate workshop, and steam boiler, the village of West Marton, and several farms. There are five fire-plugs inside the mansion and seven outside; and as the underground reservoir is 70 feet above the mansion, seven jets of water can be thrown over the house in case of fire. As there is still a considerable overflow from the underground reservoir running to waste, I intend to form a second reservoir at a lower level, and utilise the water for other farms. I have much pleasure in being able to report as above."

From J. B. McCALLUM, Esq., C.E.,

Borough and Water Engineer, Blackburn, November 1, 1886. Guide (Borough of Blackburn) Water Supply.

"DEAR SIR,—Following is the short report I promised to send as to the work performed by the Hydraulic Rams—supplied by you to the Blackburn Corporation—after they had been in operation sufficient time to take proper observations.

"The district of Guide—population about 500—in the Borough of Blackburn, is situated above the highest reservoir of the Blackburn Waterworks, and had no regular water supply until last July, when the Water Committee caused two of your Patent Hydraulic Rams to be put down and worked by water from a reservoir having a varying but maximum head of 34 feet 3 inches on the Rams—the waste (clean) water gravitating to a lower adjacent reservoir.

"You contracted to supply rams which would force 8000 gallons per day each through 1295 yards of delivery pipe to a service tank 170 feet above the rams, and I am bound to state that the result has considerably exceeded my expectations, as the rams are capable of pumping, and have pumped, much more water than you promised. The percentage of efficiency exceeds all I expected, and is, in my opinion, much more than is usually obtained from hydraulic rams.

"From a test I made on September 29, I found that two rams with $\frac{1}{2}$ -inch and $\frac{3}{4}$ -inch strokes respectively, supplied with 194,730 gallons per day, together pumped 26,090 gallons per day to a height of 170 feet, giving 71.43 per cent. of efficiency, and one ram working at $\frac{1}{2}$ -inch stroke, and with only 16—18 feet of working fall, supplied with 154,587 gallons per day, pumped 10,587 gallons per day to the same height, showing 72.75 per cent. of efficiency.

"At a subsequent test on October 11, one ram at $\frac{3}{4}$ -inch stroke, and having 31 feet 9 inches of working fall supplied with 121,083 gallons per day, pumped 17,583 gallons per day to an elevation of 171½ feet, the efficiency in this case being 79.57 per cent.

"In arriving at these results the greatest care was taken to positively measure the water, besides having a meter check on feed and delivery pipes.

"The work carried out by you at Blackburn is substantial and satisfactory in every way, and if any engineer wishes to make his own observations he is at liberty to come here and do so."

From Mr. HENRY ROBINSON,

Engineer to the Stockport District Waterworks Company, September 8, 1883.

"DEAR SIR,—I can now report well of the two Hydraulic Rams we have fixed to your instructions for the supply of Disley Village. 40,000 gallons per day was the quantity you promised they would force to a height of 68 feet, but on testing them I am convinced that 50,000 gallons is not the limit of their power, whilst the quantity of waste water used in driving them is not equal to half the capacity of the 6-inch pipe by which they are fed, and I am inclined to the belief that a more simple and efficient pump cannot be found."

From Mr. J. A. RUTHERFORD,

Agent to C. F. H. Bolckow, Esq., Estate Office, Marton Hall, Middlesborough, September 26, 1883.

"DEAR SIR,—I am glad to say that the Rams you put down on the Hambledon Estate, for Mr. C. F. H. Bolckow, are working very well. You undertook, with 16 gallons per minute, to send up 1500 gallons a day, and with enough water to work the Rams at full power, 2000 gallons a day. With a supply of 11½ gallons per minute they are lifting 2200 gallons, and when working full power, 3105 gallons per day are sent up to a height of nearly 400 feet. They made a clear start, and have gone well since."

The Delivery Pipe, in the above case, is 9000 feet in length.

From THOMAS ROBERTS, Esq.,

Estate Surveyor to His Grace the Duke of Sutherland, K.G., Surveyor's Office, Trentham Hall, Staffordshire, April 13, 1886.

"DEAR SIR,—I am pleased to say that the Hydraulic Ram you supplied and fixed at Titensor (the residence of the Marquess of Stafford, M.P.) does its work very satisfactorily, with a fall of 9 feet 6 inches, raising 9000 gallons daily to a height of 150 feet. The Duke of Sutherland, K.G., inspected the working of the Ram, and expressed his entire satisfaction with it.—I am yours faithfully,

"THOMAS ROBERTS."

From HENRY MORTON, Esq.,

Agent to the Most Honourable the Marquess of Ripon, K.G., Ripon, April 12, 1886.

"DEAR SIR,—The Patent Ram, with $\frac{1}{2}$ mile of service pipe, a large galvanised tank, and other fittings, which you fixed for the Marquess of Ripon, for the conveyance of water from Hutton Moor Springs to Blows Hall and Copt Hewick Hall, are highly satisfactory to all concerned, both as an engineering success and the intrinsic merits of the materials supplied. About 6000 gallons of water per day are forced into the tank at Blows Hall, nearly a mile distant, and 127 feet above the Ram, the overflow falling into a 20,000 gallon underground tank, from which it gravitates through the 4-inch main 800 yards long, with a fall of 70 feet to the service-cocks and fire-plugs at Copt Hewick Hall, where in case of fire, two or three powerful jets of water can be thrown on to the roof of the Hall.

"I consider your method of carrying out the work is everything that could be desired, and, whilst the waste-power water from the Ram is less than you specified, the quantity elevated is just what you guaranteed.—I am, dear sir, yours very truly,

"HENRY MORTON."

From WILLIAM DICKINSON, Esq.,

Agent to the Most Honourable the Marquess of Abergavenny, K.G., Eridge Estate Office, Hargate Lodge, Tunbridge Wells, July 3, 1885.

"SIR,—I am instructed by the Marquess of Abergavenny to say that the Patent Hydraulic Ram, with over two miles of pipes, forcing water to a height of 230 feet, which you erected at Eridge Castle about nine months ago, has given his lordship entire satisfaction, and he has every confidence in its continuing to do so.—I am, sir, yours faithfully,

"WILLIAM DICKINSON."

From Captain TOWNSHEND,

Wincham, February 10, 1877.

"In answer to your inquiry I am glad to say the Hydraulic Ram you sent me in November, 1875, is working exceedingly well, and gives no trouble. It will work when quite immersed, as it has been several times during the floods this winter, forcing up water through a delivery pipe 900 yards long, at the rate of 80,000 gallons per day, although you only promised 50,000."

JOHN BLAKE, ENGINEER, ACCRINGTON, LANCASHIRE, ENGLAND.

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Important SALE OF IMPORTED and ESTABLISHED ORCHIDS.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, August 2, at half-past 12 o'clock precisely, by order of Mr. F. Sarter, a fine lot of new and extremely rare ESTABLISHED and IMPORTED ORCHIDS, including the following varieties in flower or bud:—

Bollea Lalindia	Cattleya crispa, fine variety
" Wendlandii, a new species	" Gaskelliana
" of a very charming yellow colour	Masdevallia acrochodonia
Miltonia spectabilis	Odontoglossum Alexandræ, fine varieties
Oncidium Phalaenopsis	" Harryana, fine varieties, in flower and bud
" pubes	" Arnoldiana
Paphinia cristata scuticaria	
Cattleya aurea	

The above choice and valuable kinds, together with a fine lot of IMPORTED ORCHIDS, consisting of Aerides Fieldingii, Cattleya Bowringiana, in very fine condition; C. Mendelii, C. Mossii, the rare Cymbidium eburneum, Dendrobium densiflorum, Lælia purpurata, in good condition; L. acuminata maxima, L. autumnalis, in fine masses; Oncidium flexuosum, O. micropogon, O. maculatum, the rare O. splendidum, Odontoglossum Covantesii, in very fine condition; O. nebulosum, O. Rosii, Sophronitis grandiflora, &c.

On view morning of Sale, and Catalogues had.

Wednesday, August 15.

SPECIAL SALE OF ORCHIDS IN FLOWER and BUD.

MR. J. C. STEVENS begs to announce that his NEXT SALE OF ORCHIDS IN FLOWER and BUD will take place at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY, August 15, at half-past 12 o'clock precisely, and he will be glad if gentlemen desirous of entering plants for this Sale will send Lists as soon as possible.

Tuesday Next.

ORCHIDS IN FLOWER.—SPECIAL SALE.

MESSRS. PROTHEROE and MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on TUESDAY NEXT, July 31, at half-past 12 o'clock precisely, a large quantity of ORCHIDS IN FLOWER, from various Collections, including Cattleyas, Odontoglossums, Cypripediums, grand varieties of Cattleya Dowiana, Cypripedium bellatulum, Oncidiums, Lælias, and others. Also a large size THANATOPHORE, a new apparatus for steaming tobacco juice.

On view morning of Sale, and Catalogues had.

Friday Next.

Important to large Buyers.—For Sale, without reserve.

2000 ODONTOGLOSSUM ALEXANDRÆ, Pacho varieties, compact masses; and 300 CATLEYA SANDERIANA, all in splendid condition, collected and brought home by Mr. Schmidtzen.

MESSRS. PROTHEROE and MORRIS are instructed to SELL the above by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY NEXT, August 3, at half-past 12 o'clock precisely.

On view morning of Sale, and Catalogues had.

Friday Next.

RARE DISAS, SATYRIUMS, &c.

MESSRS. PROTHEROE and MORRIS are instructed to include in their SALE by AUCTION, on FRIDAY NEXT, August 3, an important consignment of TERRESTRIAL ORCHIDS, including Disa crassicornis, offered for the first time (for description see *Gardening World*, June 30 last), Disa Zeyheri, Dispersis Faminei, Huttonia pulchra, Lissoclilus, Eulophias, &c.

On view morning of Sale, and Catalogues had.

Friday Next.

3,000 Seeds of LATANIA BORBONICA, 3500 ARAUCARIA BRAZILIENSIS, and other Seeds and Plants, from Brazil. Imported Plants of VANDA TERES, DENDROBIUM NOBILE, D. DRACONIS, and D. SPECIES, sent as D. Amœnum. Immense imported masses of CATLEYA LABIATA WARNERII, two with ninety bulbs; IPSEYA SPECIOSA, and a very fine Assortment of well-grown ESTABLISHED ORCHIDS.

MESSRS. PROTHEROE and MORRIS will include the above in their SALE by AUCTION at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY NEXT, August 3, at half-past 12 o'clock precisely.

On view morning of Sale, and Catalogues had.

Friday Next.—Established Orchids.

MESSRS. PROTHEROE and MORRIS will include in their SALE on FRIDAY NEXT about 150 lots of well grown ESTABLISHED ORCHIDS.

On view morning of Sale, and Catalogues had.

Dutch Bulbs.

SPECIAL TRADE SALES.

MESSRS. PROTHEROE and MORRIS desire to announce that their SALES OF DUTCH BULBS for the ensuing season, will commence on MONDAY, August 13, and the first Six Auctions will consist as usual of lots specially arranged to suit the Trade and other Large Buyers.

Messrs. P. & M. will be glad to receive the names and addresses of intending purchasers who may wish to receive Catalogues of these Auctions.

Central Sale Rooms and Estate Office, 67 and 68, Cheapside, E.C.

Friday, August 17.

IMPORTANT UNRESERVED SALE of the Second and Remaining Portion of the well-known COLLECTION of ESTABLISHED ORCHIDS, formed by F. A. Philbrick, Esq., Q.C., of Oldfield, Bickley, who is relinquishing the cultivation of Orchids.

MESSRS. PROTHEROE and MORRIS are favoured with instructions to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY, August 17, at half-past 12 o'clock precisely, without reserve, the Second and Remaining Portion of this well-known COLLECTION of ESTABLISHED ORCHIDS.

The plants are in exceptionally healthy condition, and this Sale includes a remarkable collection of promising Odontoglossums (unflowered, several celebrated varieties having appeared among them), as well as some of the finest forms of Cattleyas, especially Trianæ and Gigas, and many choice Masdevallias.

Among the principal items may be mentioned:—

Aerides infelix roseum	Masdevallia Veitchii gigantea
" Godefroyæ	" superba
" Houlettianum	" Chelona {hybrids
Vanda suavis Veitchii	" splendida
Zygopetalum Dayii	Cattleya Mendelii grandis
Grammatophyllum Ellisii	" superba
Cirrhopetalum Cunninghamii	" gigas Sanderiana
Angraecum citratum, special form	" Mossii kermesina
Cattleya Trianæ alba	" Burton Constable var.
" " Aurora	" aurantiaca
" " Euterpe	" Warneri rubra
" " Harlyana	Phalaenopsis amabilis, including picta and many fine varieties
" " Russelliana	" Marie
" " superbissima, and	" Dayana
" other superb vars.	" Lowii
Lælia elegans	" grandiflora (Java and Borneo varieties)
" Stelzeriana	" sumatrana
" Schilleriana	" Sanderiana
" aneops Schröderiana	" Stuartiana
" Stella, and other white forms	" Schilleriana (many grand forms)
Masdevallia Harryana læta	" Casta
" splendens	" leucorrhoda
" sanguinea	
" magnifica	
" atro-sanguinea	

ODONTOGLOSSUMS.

Alexandræ, magnificent varieties, including roseum Guttatum Flavium Horsmanii Ruckerianum

Wilckeanum, and other hybrids Nævium majus Pulchellum monstrosum Cervantei Decorum Pescatorei, grand forms, &c.

The plants may be inspected on the Premises on presentation of Catalogue, and will be on view in the Sale Rooms on the morning of Sale. Catalogues may be obtained of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

Kingston, Surrey.

By order of the Executors of the late Mr. Thomas Jackson. IMPORTANT SALE OF VALUABLE FREEHOLD and LEASEHOLD PROPERTIES.

Preliminary Notice.

MESSRS. PROTHEROE and MORRIS are favoured with instructions to SELL by AUCTION, at the Mart, Tokenhouse Yard, London, E.C., on THURSDAY, August 30, (first in one lot, and if not thus sold, then in separate lots), the VALUABLE FREEHOLD ESTATE known as the Kingston Nursery, Kingston, containing a total area of 2 acres, with the modern detached Freehold Residence, 22 Greenhouses and numerous Outbuildings, and the Goodwill of the old-established Nursery and Seed Business, the desirable Freehold House and Shop in Thames Street, Kingston, now utilised as a Seed Shop, with 2 Cottages and Stabling adjoining, also the several Leasehold Nurseries known as the Kingston Hill Nursery, containing an area of 12 acres 3 roods 10 perches, the Nursery in Park Road, Norbiton, area 10 acres, and the Long Ditton Nursery, Long Ditton, area 15 acres 0 roods 13 perches.

The Purchaser or Purchasers will have the option of taking the Stock in the respective lots at a valuation to be made in the usual way.

May be viewed. Particulars and Plans obtainable at the Mart; of G. C. SHERRARD, Esq., Solicitor, 26, Lincoln's Inn Fields, W.C.; and of the Auctioneers and Surveyors, 67 and 68, Cheapside, London, E.C., and Leytonstone.

The Ascot Nurseries, Berks.—Preliminary Notice.

MESSRS. PROTHEROE and MORRIS desire to announce that they have been instructed by the present Proprietor, who is relinquishing the business solely in consequence of continued ill-health, to SELL by AUCTION, at the Mart, Tokenhouse Yard, London, E.C., in SEPTEMBER NEXT, in one lot, as a going concern, (unless an acceptable offer be made previously), the well-known property situate and being the ROYAL NURSERIES, Ascot, Berks, established for so many years, together with a detached Residence, about 40 Greenhouses, numerous Trade Buildings, and 21 Acres of Land. The whole of the extensive collection of Stove and Greenhouse Plants, and General Nursery Stock, will be included in the purchase.

Further particulars may be obtained on application to the Auctioneer, who will be pleased to hear from any gentleman desirous of negotiating for the property by private treaty.

Auction and Estate Offices, 67 and 68, Cheapside, London, E.C.

Edmonton (8 miles from Covent Garden).

To FLORISTS and OTHERS.

A compact LEASEHOLD NURSERY, of about one acre in extent, with comfortable Dwelling House, Stabling, Coach House, Potting Shed, and 14 well built Greenhouses, heated with hot water. Good supply of water from wells.

MESSRS. SEARLE, HALTON, AND BOWYER will SELL the above by AUCTION, at a low reserve, at the Mart, City, on THURSDAY, August 2, 1888, at 2 o'clock precisely.

Can be viewed. Particulars and Conditions of GEORGE THATCHER, Esq., Solicitor, 19, Bennet's Hill, E.C.; and of the Auctioneers, Tottenham, and Enfield Town.

WANTED, TO RENT, on LEASE, about an Acre of Land, with Glass suitable for Market purposes; also good Dwelling-house. Address G. BLUNDELL, Ridgway Oaks, Enfield.

WANTED, TO HIRE ON LEASE, a Small FLORIST BUSINESS, in a first-class locality, with Glass, where a good business could be done in Cut Flowers, &c. G. HOLLIS, Writton, North Walsham, Norfolk.

In the Suburbs.—(Fol. 6391.)

Specially recommended.

TO BE SOLD, in consequence of the retirement of the owner, an old-established, thoroughly genuine and very lucrative NURSERY and FLORIST BUSINESS, numerous Greenhouses, Dwelling House, Lease 20 years. Rent £75. Price about £2000, half of which could remain. Full particulars of

Messrs. PROTHEROE and MORRIS, 67 and 68, Cheapside, London, E.C.

To Grape, Fruit, Tomato Growers, MARKET GARDENERS, &c.

TO BE DISPOSED OF, an Old-established BUSINESS, in the Channel Islands, in full work. Apply in the first instance by letter, addressed to A. R. C. H., Bedford Villa, Teddington. Principals only treated with.

FLORISTS.—A good opportunity for two enterprising young men, with capital, to take over a going concern in one of the best positions in the metropolis. Good Dwelling House, Shop, Greenhouses, &c., with every convenience for doing an extensive business. F. G., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

South of England.

LARGE GARDEN, 20 Acres, with Twenty Greenhouses and Vineries. £7000 has been spent on the property. Seven years' lease. Two cottages inclusive. £150 a year. ELDRIDGE, Portsmouth.

TO BE LET, on LEASE, 7, 14, 21, or 99 years, 1 to 10 Acres of excellent GRASS LAND. Rents from £8 to £12 per Acre. Suitable for Nurserymen, Florists, &c., with the option of purchase at any time. Near the main road, Enfield Highway, about 9 miles from London. No tithes or land-tax.

Apply to the Owner, Mr. H. MOORE, 59, Bishopsgate Street Within, E.C.

TO LET, a Small JOBBING and FLORIST'S NURSERY, consisting of 4 Houses and several Pits, excellently situated, in most fashionable part of Leicester. An advantageous opportunity for an energetic and enterprising man.—Apply, HARRISON AND SONS, Royal Midland Seed Establishment, Leicester.

Durant's Arbour Estate, Ponder's End, Middlesex. To NURSERYMEN, FLORISTS, and OTHERS.

TO BE LET, on Lease, for 21, 60, or 80 years, 1 to 50 acres of excellent MEADOW LAND, from £8 to £11 per acre, with the option of the purchase of the freehold within the first 9 years. No tithe or land tax. Apply to A. AND G. GUIVER, Land Agents, &c., Ponder's End, N.B. Several Nurseries established on the estate.

GARDENS TO LET, from year to year, or a term of years. The Gardens, at Botcherby, within 1 mile of the city of Carlisle, late in the occupation of Messrs. Hamilton & Co., containing upwards of 10½ Acres of excellent Land, well stocked with Fruit Trees, together with modern built Dwelling-house, Stable, Large Vineries, Cucumber-house, &c., and the Fruit in the same. Immediate possession may be had. Written proposals will be received by W. WANNOP, Green Market, Carlisle, and the tenant declared as soon as a suitable offer is made.

WHITE ROMAN HYACINTHS, ETC.

B. S. WILLIAMS

Has received a magnificent importation of well-ripened and heavy Bulbs of

ROMAN HYACINTHS, Early White, from 5 to 8½ inches in circumference.

PAPER WHITE NARCISSUS, from 5 to 6 inches in circumference.

DOUBLE ROMAN NARCISSUS, from 5 to 6½ inches in circumference.

LILUM CANDIDUM, Pure White, extra strong.

EARLY ORDERS SOLICITED.

Illustrated Bulb CATALOGUE Post-free.

VICTORIA and PARADISE NURSERIES, UPPER HOLLOWAY, LONDON, N.

ORCHIDS.

THE LIVERPOOL HORTICULTURAL CO.

(JOHN COWAN), Limited,

Are constantly receiving Importations of

ORCHIDS

from various parts of the World, full particulars of which will be sent on application.

The Company have also a large stock of

ESTABLISHED ORCHIDS

in fine health and condition.

Prices and particulars on application.

THE VINEYARD AND NURSERIES,
GARSTON, near LIVERPOOL.

THE GARDENERS' ORPHAN FUND.

DONATIONS and SUBSCRIPTIONS

WILL BE THANKFULLY RECEIVED BY

A. F. BARRON, Hon. Sec.,

Royal Horticultural Society's Gardens,
Chiswick, London, W.

PLANTING.—TENDERS REQUIRED for
Planting about 80 acres, chiefly with AUSTRIACA,
INSIGNIS and PINASTER. For particulars and conditions,
Apply, W. SMITH, Solicitor, Dartmouth.

To Landscape Gardeners and Contractors.
THE RAMSEY TOWN COMMISSIONERS
invite TENDERS for carrying out the work in connection
with the MOORAGH PARK and LAKE. The work comprises
the Construction of Lake, the forming of Roads and Walks,
Laying-out and Planting of Park, and the Erection of Shelters,
Keeper's Lodge, &c., in accordance with Plan and Specification,
which may be seen at their office. Specification may be had on
application to the undersigned after July 5. Sealed Tenders,
endorsed "Tender for Mooragh Park," to be sent in to the
undersigned on or before the 13th day of August next.

The Commissioners do not bind themselves to accept the
lowest or any Tender.—By order, JAMES BELL,
Clerk to the Ramsey Town Commissioners.
Town Commissioners' Office, Ramsey,
Isle of Man.—June 28, 1888.



CLEARANCE SALE

OF STRONG HEALTHY PALMS.

Latania borbonica, *Seaforthia elegans*, *Phoenix reclinata*,
&c., 20 to 24 inches high, 16s. per dozen. Same kinds,
2 ft. 6 in. to 3 ft. high, 3s. to 5s. each. Handsome Palms
for decoration, 5 ft. 6 in. to 6 ft. high, 70s. per pair. Small
Palms, 10 to 12 in. high, 4s. per dozen.

Kentias, from 3s. to 21s. each.

Fine Dracaenas, from 2s. to 30s. each.

Over 50,000 Palms to select from.

B. OWEN, The Palm Gardens, Stamford Hill, N.

A Visit solicited.

LARGE PLANTS TO BE SOLD.—
10 Orange Trees of sorts, 7 to 10 feet, well covered
with ripe and small fruit; 6 Camellias, 6 to 8 feet; 6 *Azalea*
indica, 4 to 5 feet; 2 Palms, *Seaforthia elegans*, 9 feet each;
1 *Corypha australis*, 5 feet. All the above plants are clean
and in good condition. Can be seen at Bettisfield Park,
the residence of the late Sir Edward Hammer, and for further
particulars apply to
THOS. THOMPSON and SON, Ellesmere, Shropshire.

GARDENIAS, guaranteed perfectly free from
bug or scale, good plants in 32s., 45s. per 100; large
plants in 24s., 30s. per dozen, best Covent Garden variety. A
rare chance for any one in want of a clean stock.
W. L. MILNE, Market Grower, Newhampton.

UNDER ROYAL PATRONAGE.



BEGONIA EXHIBITION

The Grandest Floral Display
in London.

Open to the Public every day (Sundays excepted) from
June to September, 9 a.m. to 7 p.m. daily.

ADMISSION FREE.

OUR EXHIBITIONS OF BEGONIAS

Have been celebrated for their varied beauty
and extent for the past few years, but the
COLLECTION now on view is superior to any
of the kind ever yet seen, both in single and
double varieties, the shades of colour being quite
indescribable, and must be seen to be appreciated.

All lovers of flowers are cordially invited.

Nearest Railway Stations are Catford Bridge, Mid Kent
Line (S.E.R.), from Charing Cross, Waterloo, Cannon Street,
and London Bridge; and Forest Hill (L.B. & S.C.R.), from
Victoria, Kennington and West End, Croydon, &c.; also from
Liverpool Street.

JOHN LAING & SONS,

Begonia Specialists, Nurserymen,
and Seedsmen,

FOREST HILL, LONDON, S.E.

STRAWBERRIES.

CHARLES TURNER

Can now supply strong Runners of all the leading varieties.
Descriptive LIST sent on application.

THE ROYAL NURSERIES, SLOUGH.

ORCHIDS A SPECIALTY.

Quantity immense—Quality fine—Price Moderate.
Inspection invited. 297,300 feet of glass in the Nurseries.

HUGH LOW & CO.,
CLAPTON NURSERY, LONDON, N.

FERNS A SPECIALTY.

The largest, most complete, and profusely
ILLUSTRATED CATALOGUE OF FERNS
ever published, containing over 120 Illustrations, and much
valuable practical information on the cultivation of Ferns, &c.
1s. 6d. post-free. Smaller Catalogue of over 1300 species and
varieties free on application.

W. & J. BIRKENHEAD,
FERN NURSERY, SALE, MANCHESTER.

CYPRIPEDIUM BELLATULUM,

Reich. f.

This grand novelty has, on flowering, at once taken the
foremost place in the genus, and can be seen in flower at the
Clapton Nursery. Fine Plants are offered at

10s. 6d. each; Larger, 21s. to 105s. each.

Also a few extra-sized specimens are for sale.

HUGH LOW & CO.,
CLAPTON NURSERY, LONDON, E.

TEA ROSES.

GARAWAY CO. offer 12 of the above, best
named sorts, including MARECHAL NIEL
and NIPHETOS, in 5-inch pots, for 10s. cash.

GARAWAY CO.,
Durdham Down, Clifton, Bristol.

Protect your Fruit by using

MADDOCK'S KILL-WASP.

Mr. C. PENNY, *Head Gardener* to H.R.H. the Prince of
Wales, says:—"Your Kill-Wasp is simply marvellous for its
quick destruction of this our greatest enemy."

Mr. H. H. WARD, *Head Gardener* to the Right Hon. the
Earl of Radnor:—"I have given it a trial, and found it to be
everything you represent it to be. It does its work most
effectually."

To be had of all Chemists, price 1s. 6d., or post-free 1s. 9d.,
and from the

OLD ENGLISH LAVENDER WATER CO.,
PULBOROUGH, SUSSEX.

MOST EFFECTIVE, SAFE & ECONOMICAL.

IMPROVED & ONLY GENUINE

"Medicated Tobacco Paper"

(READY CUT UP FOR USE),

Reduced Price 1/6 per lb.;

28lbs. & upwards—Carriage Paid.

Parcels for trial, sent Free by Parcels Post, viz.:
2 lbs. 3/4, 4 lbs. 6/8, 6 lbs. 9/9, 8 lbs. 13/-, 10 lbs. 16/-.

IMPROVED FUMIGATING PAN

is vastly superior to any other.

Price 6/8 (in iron with heater) each,
or in Copper, 21/-.

DICKSON'S Improved MUSHROOM SPAWN

MOST SUPERIOR, 5/- PER BUS.

Circulars giving all particulars & copies of testi-
monials, post free on application.

DICKSONS

(LIMITED),
Royal Nursery and Seed Establishment,

CHESTER.

SILVER SAND, PEAT, and LOAM.—The
best in England, for Sale, in Railway Truckloads, loose,
or in sacks, at moderate quotations.

W. SHORT, Horticultural Co., Midhurst, Sussex.

GARDEN REQUISITES.

TWO PRIZE MEDALS.

Quality, THE BEST in the Market. (All sacks included.)
PEAT, best brown fibrous ... 5s. per sack, 5 sacks for 23s. 6d.
PEAT, best black fibrous ... 4s. 6d. " 5 sacks for 20s.
PEAT, extra selected Orchard ... 7s. 6d. " 5 sacks for 35s.
LOAM, PREPARED COMPOST { 1s. per bush, 3s. per sack
LEAF or PEAT MOULD " (sacks included).
SILVER SAND, coarse, 1s. 6d. per bush, 14s. half-ton, 24s. ton.
RAFFIA FIERE, best only ... 1s. per lb.
TOBACCO CLOTH, or PAPER ... 1s. lb.; 28 lb., 27s.
SPHAGNUM MOSS, all selected, 3s. per bush, 2s. per sack.
CHUBB'S "PERFECT" FER- IN BAGS.

TILIZER (the Best Food for
all kinds of Plants, Flowers, Tins. 7lb. 14lb. 28lb. 56lb. 1 cwt.
Fruits, Vegetables, &c. ... 1/6 3/- 5/- 8/- 14/- 22/-
CRUSHED BONES, or Bone Dust 1/2 2/- 3/6 6/- 12/-
VIRGIN CORK (Best Quality only) — 3/- 5/6 10/6 17/-
RUSSIAN MATS, BAMBOO CANES, PERUVIAN GUANO,
NITRATE OF SODA, HORTICULTURAL CHARCOAL, &c.
PEAT MOSS LITTER, cheapest and best Bedding for Horses and
Cattle, £2 per ton. Extra large Sample Bales, 6s. each.
COCOA-NUT FIBRE REFUSE (by Chubb's special process),
sacks, 1s. 3d. each; 15 sacks, 15s.; 20 sacks, 18s.;
30 sacks, 25s.; 40 sacks, 30s.; Truck-load, loose, free on rail,
28s. Limited quantities of G., special quality granulated,
in sacks only, 2s. each. Terms, strictly Cash with order.
(Bankers, Union Bank of London.)

CHUBB, ROUND & CO.,
WEST FERRY ROAD, MILWALL, LONDON, E.

GARDEN REQUISITES.

COCOA-NUT FIBRE REFUSE.

4d. per bushel; 100 for 25s.; truck (loose, about 2 tons),
40s.; 4-bushel bags, 4d. each.

LIGHT BROWN FIBROUS PEAT, 6s. 6d. per sack; 5 sacks,
25s.; 4s. each.

BLACK FIBROUS PEAT, 5s. per sack, 5 sacks, 22s.; sacks,
4d. each.

COARSE SILVER SAND, 1s. 9d. per bushel; 15s. per half-
ton; 26s. per ton, in 2-bushel bags, 4d. each.

YELLOW FIBROUS LOAM, PEAT-MOULDED, and LEAF-
MOULDED, 1s. per bushel.

SPHAGNUM MOSS, 8s. 6d. per sack.

MANURES, GARDEN STICKS, VIRGIN CORK, TOBACCO
CLOTH, RUSSIA MATS, &c. Write for Price LIST.—

H. G. SMYTH, F.R.H.S., 21, Goldsmith's Street, Drury
Lane (lately called 17A, Coal Yard), W.C.

CARTERS' "TESTED" SEEDS

(Registered Trade Mark)

FOR PRESENT SOWING.

CABBAGE.

CARTERS' EARLY HEARTWELL ...
*Acknowledged to be the finest Early Cabbage in cultivation.*CARTERS' MAMMOTH BEEF-HEART ...
The Best Main-crop Garden Cabbage in cultivation.

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CARTERS' GIANT WHITE COS ...

DUNNETT'S GIANT WINTER COS ...

CARTERS' LONGSTANDER ...

ALL THE YEAR ROUND ...

ONION.

GIANT ROCCA ...

GIANT WHITE TRIPOLI ...

GIANT MADEIRA ...

Price, Post-free.

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ROYAL SEEDSMEN BY SEALED WARRANTS,

237 & 238, HIGH HOLBORN, LONDON

SEASONABLE GOODS.

See the best Catalogue out.

STEPHANOTIS, the freest variety in cultivation, 1s., 1s. 6d., 2s. 6d., and fine specimens to 65s. each.

ALLAMANDAS, Clerodendrons, Bougainvilleas, Crotons, Gardenias, Ixoras, Passifloras—these and many others, 9d., 1s., and 1s. 6d. each; larger plants if wanted.

EUPHORBIA JACQUINLEFLORA and POINSETTIAS, 9d. each, 6s. per dozen.

CATALPUMS in great variety, very cheap, 6s., 9s., and 12s. per dozen. GLOXINIAS, 6s. per dozen.

GREENHOUSE PLANTS in great variety, 6s., 9s., and 12s. doz. TUBE ROSES BEGONIAS, coming in bloom, good plants, 1s. each, 10s. 6d. per dozen.

GERANIUMS, single, double, and Ivy-leaf, extra fine large plants, of lovely varieties, 12s. and 18s. per dozen; smaller plants, equally good sorts, for winter bloom, 4s. per dozen.

FUJISIAS, Coleus, Heliotropes, Salvia, Abutilons, and other soft-wooded plants, in small pots, 2s. 6d. per dozen; in large pots, 6s. per dozen.

FERNS, best kinds for planting in Ferneries or for decoration, in small pots, 1s. doz.; in larger pots, 6s. and 9s. per doz.

ADIANTUM CUNEATUM, best for cutting, in small plants, 3s. per doz., 21s. per 100; in good plants, 6s. and 9s. per doz.

TEA-SCENTED and other choice ROSES, in pots, grand plants and finest sorts, either for house decoration or planting in beds, 15s. per dozen.

PRIMULAS, CINERARIAS, CALCEOLARIAS, finest strains, young plants for growing on, from stores, 1s. 6d. per dozen, 9s. per 100.

CYCLAMEN, young plants, 2s. 6d. per dozen.

ORCHIDS in variety, for either cool or warm house, 30s. and 42s. per dozen.

TABLE PLANTS in variety, 18s., 24s., 30s. per dozen.

BOUVARDIAS, young plants to grow for winter, 4s. per dozen.

PRIMULA ALBA PLENA, the finest for cutting, 9s. per doz.

HERBACEOUS PLANTS, planted now in corner of garden, and moved in autumn, seldom die, 3s. per doz., 25s. per 100.

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THE

Gardeners' Chronicle.

SATURDAY, JULY 28, 1888.

THE CHEMISTRY OF VEGETATION, IN REFERENCE TO THE GROWTH OF THE POTATO.

AN old writer on the art of violin playing commences his treatise with the remark that all men may be divided into two classes:—those who play the violin and those who do not. His mind was for the time concentrated on one subject. I have for some while past been thinking so much about the process of the formation of tubers and their management by cultivators, that for the time I have come almost to regarding men as divisible into two classes—Potato cultivators and Potato consumers. A cultivator may or may not be also a consumer, but he mainly cultivates for others. For myself, I come in the division "consumer."

COMPOSITION OF THE TUBERS;—STARCH, &c.

Potatoes are eaten and cultivated for table because they contain starch. Such, at least, is the accepted view of their value in a dietary. Most people know that tubers are said to "consist of" starch granules, and nearly every one is familiar with the pictures of granules from Potatoes, from Wheat, &c., magnified so many diameters. We know that Potato granules are shown as 0.185 mm. in diameter, Wheat 0.050 mm., Sago 0.070 mm., and so on. Also that they are very pretty objects for the polariscope—that at 160° C. starch is converted into dextrine—that the granules are insoluble in cold water, alcohol, and ether, but that when heated in water to between 70° and 72° C. they split and form a paste, from which, after boiling and the addition of alcohol, there is precipitated a white amorphous powder of soluble starch.

All this is very interesting information, but it does not much help to answer the question, How is a tuber formed?—still less the practical question, To what extent has the cultivator any control over the formation of tubers in relation to the amount of starch they contain? Even the statement that Potato tubers consist of starch granules,

is a rough one. Many old analyses indicate they do not. Trade catalogues, which give the percentage of starch in different varieties, show what a difference there is in the amount of starch present. (Whether these percentages are given on the authority of actual analyses, or have been obtained by some such apparatus as the amyloimeter,* shown at South Kensington in 1876, or the feculometer, I have not been able to learn.) Of what is the remainder of a tuber composed? It is a question of interest to every consumer to know this, and whether the remainder is as digestible as starch. If all tubers consist entirely of starch granules, why should some behave so differently from others as they do, when boiled—some being "waxy," some "mealy as a ball of flour," and some "watery"?

When I told a Covent Garden dealer the kind of interest I take in Potato growth, he laughingly replied he thought I should find cultivators said like Topsy, "xpect they growed," and never bothered their heads about the chemistry of a tuber. I can hardly believe that this is so now, however true it may have been twenty years ago. If so, there is less attention paid to Potato culture than to cereals. But he is more likely to know than I, who can only guess how far cultivators study their crops.

Professor Phillips in his memoirs of William Smith has preserved an anecdote of an agricultural meeting at Longleat about the year 1800. Mr. Davis, steward to the Marquis of Bath, observed to a farmer that he had not seen him at the last meeting. "Why no, zur: I been thinking, zur, these agricultural meetings don't do much good." "I tell you what, my friend: they have done some good if they have set you thinking, for that is what you never did in your life before!" If I set some cultivators, who can work out the questions, thinking how a tuber is formed, though they may never have thought about the subject before, I shall accomplish just what I am aiming at.

We all know the old saying, that a fool can ask a question that it puzzles a wise man to answer. But questions have a use if they set anyone at work to answer them. Indeed, in every intentional experiment (as distinct from an accidental experience), we must first have the question quite clear which the experiment is designed to answer.

PROGRESSIVE ACCUMULATION OF THE STARCH.

About this time last year it occurred to me that an interesting preliminary step would be to examine Potatoes from the same plot of ground at different stages of their growth with regard to (1), The percentage of starch they contain, as ascertained by actual analysis; and (2), whether the starch was equally distributed through the tubers.

Messrs. Carter & Co., of Holborn, generously consented to send plants at successive periods of growth, and Mr. Robert N. Lennox, of the Royal Institution, kindly undertook the consecutive analyses in his own laboratory. The results will be more fully referred to presently, but I wish to mention here that they show these facts:—In the youngest specimens the percentage of ash was 10.8, and of starch, 16.4; and in the last sent the percentage of ash was .70, and of starch, 24.4. The increase of starch was steady all through the series, and the water steadily diminished from 80.5 per cent. in the earliest, to 70.6 in the latest specimens. Further than this, the starch was not equally distributed through the tubers, the outer portions containing much more than the inner. Photographs of thin sections treated with iodine show that the area of the greatest amount of starch has an irregular boundary line, as may be seen from the woodcut (fig. 8). Although the woodcut hardly reproduces the delicate gradations shown in the photograph it perhaps suffices to illustrate the unequal distribution of the starch granules. Iodine forms with starch, a com-

pound, which has a characteristic blue colour. It is the lighter portion of each section that indicates the area of deepest blue—that is, the area of most starch. Direct chemical analyses (as will be seen from the tables below) on the outer and inner portions of tubers confirm the fact, that there is more starch in the former than the latter, though they, of course, cannot, as the photograph does, show the gradations of distribution.

It would be absurd to attempt to generalise from a series of analyses made on one variety only; but these results are suggestive. A large number of varieties growing in different soils, early and late varieties that are subject to different climatic conditions, would have to be examined and account taken of temperature, rainfall, and sunlight, before we could safely generalise on the rate of formation of starch granules. The more delicate work of starch formation in leaves, involving the use of appliances for microscopical photo-chemistry could perhaps be undertaken only by younger cultivators who have had a training in scientific manipulation. But there are many investigations I think cultivators might undertake with a little trouble combined with systematic method. With regard to published analyses, there is one point that has often struck me. The percentage of ash is almost always returned simply as "ash," without any statement as to its composition. Queries: Is it the same in all cases? Does it depend on the soil? or is the selective power of the plant sufficient to overcome differences of soil? Do the compounds which the process of analysis returns as "ash," pass in the growth of the tuber through chemical changes that may affect the rate of the formation of starch in the tuber? We may surmise on these points, but definite investigation is what is needed.

It must be borne in mind that the formation of starch in leaves, which has been studied by Mohl, Sachs, Pringsheim, Godlewski, Nägeli, Schimper, and others, is a different question from its formation in tubers. Leaves form starch from which gases constitute the air. In them the existence of starch molecules appears to be but a passing stage to the formation of other carbon compounds. Tubers form their starch from the carbon-compounds already in the plant. In them the starch (or most of it) assumes the form of granules, and here it remains more or less permanent till sprouting commences.

Now, although I have been told that to talk "chemistry" (as it is called) in asking questions will only frighten most cultivators, I do not see how to help it. It is frequently remarked by those who regard only the changing nomenclature and changing symbols used by chemists from time to time, that it is no use trying to "learn chemistry," as every few years it are "all altered;" and such facts are referred to as that "carbonic acid," and "sulphuric acid," and other familiar names, are not even to be found in the index of the latest works. With the cultivators, who, I am told, are frightened at chemical names, I fully sympathise. It is at first confusing to grasp the meaning of such a name as "Triethylphenylammonium hydroxide." Some people can gain knowledge more by sight than sound, while others depend chiefly on remembering sound. It is to many easier to see the meaning of the formula, $\text{NC}_6\text{H}_5(\text{C}_2\text{H}_5)_3\text{O}$ or, better still, in a formula in "rings," as is now more commonly done.

ATOMS AND THEIR ARRANGEMENT.

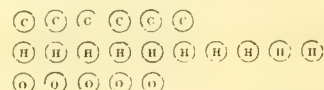
It is, of course, one thing for a chemist to ascertain facts by experiments, and group his facts in accordance with a theory applicable to all chemical changes, and quite another thing to adapt some representation of them for other people's information, in words or by symbols. For myself I always found it easier to follow the descriptive or "glyptic formulae," the different coloured balls of which represent atoms, and the little rods joining them represent the force, or forces, holding them together: the force we as yet know nothing about. Whether we use the term

"chemical affinity," "mutual attraction," "action at a distance," or any other term we like, we do not know what it really is we represent by our little connecting rods. We may soon perhaps be able to represent it in such terms as electricians use; but as we do not yet know what electricity is, we shall not even then have advanced much in explanation. Every one knows that, with a magnet under a sheet of paper, we can move a steel needle above it, and we say we move the needle because we move the source of magnetism. But when there comes the question, What is magnetism—what is this "action at a distance"? we have no answer. We know that with a magnet and an electric coil, battery, and wires we can send messages. We can practically use electricity, though we do not know what it is. So with chemical affinity. Our Arts depend on it, and we use it almost at will, though we do not know what it is. Our little rods to hold the balls together do very well to represent it—to help us in our ignorance to form a picture to our minds. We can manipulate the balls to represent such chemical changes as we think our experiments tell us.

Equally we know very little about the atoms the balls represent. For convenience they are made spherical (for class purposes about the size of billiard balls). But we do not know the shape of atoms or even whether they have any definite or constant shape at all. As regards their size—Sir William Thomson, from the result of many calculations in four different lines of research, has given, as a rough popular illustration of the average size—that if a ball of water, the size of an ordinary foot-ball, were magnified to the size of the earth, the average size of each component atom would then appear about that of a cricket ball—perhaps three or four times larger, perhaps as small as shot. We may for present practical purposes leave out of consideration the questions of the size and possible shape of atoms, and what the "chemical affinity" is that binds atoms together. It is worth noting that Dalton, in his early work (beginning about 1802), in studying atoms called them "particles," and did not adopt the word atom for some years. In print he made use of small circles with symbols to represent different "kinds of atoms," carbon, hydrogen, oxygen, &c. The plan that will here be followed is that of enclosing the first letter of the name given within a circle.

COMPOSITION OF STARCH.

Thus the composition of a molecule (the sense in which the word is used will be presently explained) of starch is expressed as containing:—



—that is, six atoms of carbon, ten of hydrogen, and five of oxygen,* often expressed thus:— $\text{C}_6\text{H}_{10}\text{O}_5$.

To represent a molecule of fruit-sugar an additional



would be needed. The grouping of the atoms in a molecule will have to be considered.

Though this method is hardly so striking as the balls and rods, yet it is found by many that it can be more readily understood than the formula $\text{C}_6\text{H}_{10}\text{O}_5$ for starch, and $\text{C}_6\text{H}_{12}\text{O}_6$ for fruit-sugar; while in the change from carbonic acid and water to starch, with oxygen set free, the change from starch to sugar, or sugar to starch, it helps the mind to picture the changes going on without troubling it with figures.

For illustrating what are the chemical changes in plant-growth where balls and rods cannot be used (as in manuscript or print) circles with connecting

* That the numbers 6, 10 and 5 show the relative proportions of C, H and O seems firmly established by all experiments. Whether the numbers should be 12, 20 and 10, or some much higher multiple, is not so sure.

* Exhibition of Scientific Apparatus at South Kensington, Catalogue No. 2737. Demby's Amyloimeter. F. H. Büchler, Breslau. Said to have been quite new in 1875. Its merit is stated to be the simplicity and accuracy with which Potato starch can be tested.

lines are perhaps the most convenient substitute, and since the question of the probable relative position of atoms in a molecule has been of late more studied many chemists have readopted the method.

Dalton's idea of different kinds of atoms, with different relative weights, and of an "attraction" of some kind that holds them together, but permits of their separating, combining, separating, and again reforming in other fixed relations, was delightfully pictured by Roscoe in his British Association address last year at Manchester. He likened the atoms held together by the unknown "chemical affinity" to people in a dance of many figures, where each individual for a while joins hands with others, separates, forms part of another group, and separates again to make up other groups.*

To a cultivator, or to anyone else who has paid no attention to chemistry, a sight of Frey's or Wurtz' *Encyclopedia*, Gmelin's *Handbuch*, or Watt's *Dictionary* with its supplements, is an appalling sight. But a cultivator does not need to know: it would not help him to know the technical processes of iron,

those of *Megaclinium falcatum*, 2½ cm. high, 4½ in circumference. There are two strong cuneate-lanceolate acute leaves, 5 cm. in length, 1 broad. The peduncle (3 cm.) is covered with imbricating sheaths. The rachis (3½ cm. to nearly 1) is light green, scarcely lobed. Bracts triangular deflexed. Flower of *Megaclinium falcatum*. Petals longer and more arcuate, side sepals also reflexed. Lip trilobed, wholly membranaceous, side lobes angulate, mid lobe oblong. Column with two sharp introrse teeth, one on each side of the fovea, hence quite distinct from that of *Megaclinium falcatum*.

I had this "curio" from Major Lendy, Sunbury House, Sunbury-on-Thames. It was purchased as coming from Madagascar. *H. G. Rehb. f.*

DIPODIUM PALUDOSUM, *Rehb. f.*; *GRAMMATOPHYLLUM PALUDOSUM*, *Griff.*; *WAILESIA PALUDOSA*, *Rehb. f.*

This plant has distichous ligulate-acute membranaceous leaves. From the axil or axils of the lower leaves spring the long peduncles with a raceme

being blunt or bilobed. Both the sepals and the petals are usually dark blackish brown showing very little yellow. I have just now specimens at hand of a variety with a broader lip. The plant has been found quite isolated in one particular spot, where there are no other *Odontoglossa*. Mr. W. Kalbreyer has just brought over living plants. The bulbs are said to be much more like those of *Odontoglossum crispum* than those of *O. luteo-purpureum*. They produce inflorescences even when very young and small. These inflorescences are also often branched. The flowers have, according to Mr. W. Kalbreyer, a most powerful and agreeable smell. *H. G. Rehb. f.*

LÆLIA EYERMANIANA, *n. hyb. (nat.?)*

This lovely, perhaps unique, Mexican novelty, (fig. 12, p. 109), has lately appeared with Mr. F. Sander at St. Albans. The lucky possessor believes it to be a hybrid between *Lælia majalis* and *L. autumnalis*. It came amidst *L. majalis*, of which the bulb is just the same. *L. autumnalis* was seen in the same place. The leaves are ligulate acute, very strong, 6 inches long by nearly 2 inches in width. My Hartwegian specimen of *L. majalis* has a leaf of nearly the same length, although usually the leaves are smaller, but they are represented quite as large by Lindley and Bateman. Humboldt's typical specimen of *Bletia speciosa* (= *Lælia majalis*), has quite a large leaf. The peduncle is stated to bear four flowers. They are equal to an average flower of *L. Gouldiana*, hence smaller than those of *L. autumnalis*. The sepals and petals are of a lovely rose-purple, with a green knob outside at the acute apex of the sepals. The petals are cuneate-oblong, blunt (!). Lip three-fid. Side lacinia oblong, shorter than the rounded, somewhat wavy mid-lacinia. Colour white, border rose. There are two keels with a third one in the middle from the base to the centre, whitish, washed with purple and with some purple spots; suddenly constricted into three approximate yellow keels on the disc. Column white with some purple spots at the base in front, and some transverse running yellow lines; the anther was too far advanced for good study. Mr. Sander informs me the smell is that of *Orchis coriophora*.

I have not the least doubt, the plant is an undescribed one. The bulb is most evidently that of *Lælia majalis*. There is, however, some difference in the blunt petals, as both *L. majalis* and *L. autumnalis* have them acute. The abrupt constriction of the keel resembles fully that *L. majalis*. We may get in future enlightened, provided the precious unique lives and develops itself. Mr. F. Sander has desired that it should be named in honour of Mr. J. Eyerman, of Easton, U.S.A., one of the most enthusiastic orchidists of our days. *H. G. Rehb. f.* [The plant has been shown twice lately at the Royal Horticultural Society when the leafy bracts shown in our figure, were much commented on. Ed.]

ÆRANTHUS OPHIOPLECTRON, *n. sp.**

This is stated to have the stem and leaves of *Æranthus Carnowianus*, the flower, however, is very distinct. The sepals are triangular acuminate, 1 inch long by one-sixth wide at the base. The petals are narrower, curved downwards behind the lateral spreading sepals. All those organs are yellowish-green. Lip triangular acuminate, white, with a long filiform ochre-reddish spur, twisted near the base, exceeding the lip four times. It was kindly sent me by Messrs. H. Low & Co., having been introduced by them from Madagascar. *H. G. Rehb. f.*

NOTES FROM OAKWOOD.

I SEND a few notes of observation lately made at my experimental garden at Oakwood, Wisley. The late weather, so objectionable to mortals, and so bad for the hay, has thoroughly suited some plants. We have never before had *Meconopsis Wallichii* nearly in such beauty as it is in this year, both the blue and purple varieties. Having learnt at Kew that

* *Æranthus ophioplectron*, *n. sp.*—Caulis, foliis, inflorescentia *Æranthi Carnowiani*, *Rehb. f.*; pedunculo (semper?) unifloro; bractea ovario multo breviori; sepalis tepalisque lanceo triangularibus; tepalis retrorsum deflexis; labello triangulo acuto callo in calcaris ostio humili, angulo utrinque de columine basi in calcaris ostium descendente, calcaris filiformis, basi sensu torto. Ex Madagascar imp. ex. Hugh Low & Co. Pro horti. *Æranthum ophioplectron*, *H. G. Rehb. f.*

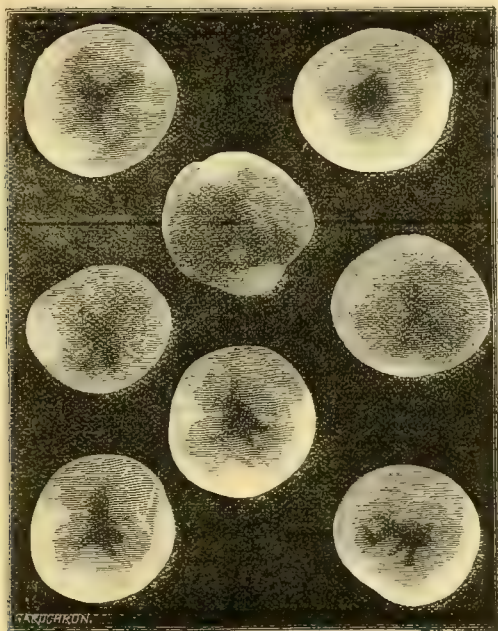


FIG. 8.—ILLUSTRATION SHOWING THE RELATIVE QUANTITY OF STARCH IN DIFFERENT PARTS OF THE POTATO TUBER.

zinc, tin, or alkali works, or of brewing or dyeing, nor all the history of what is called pure or philosophical or theoretic chemistry. *W. S. M.*

(To be continued.)

NEW OR NOTEWORTHY PLANTS.

MEGACLINIUM OXYODON, *n. sp.†*

This is a small plant, very much like *Megaclinium melanorrhachis*. Its bulbs are spherico-tetragonous, placed at intervals on the creeping rhizome, dark green with black, much wrinkled, and with punctiform impressions, entirely different from

of eight to twelve flowers. Sepals and petals lanceolate-acute, cream-white, spotted with purple, nearly an inch in length. Lip with two teeth at the base, where it is rather thickened, cuneate-oblong acute, soft and velvety on the mid-line, white; side partitions of the anterior largest lacinia marked with some longitudinal purple lines. Column thickened and yellow at the top, the remaining part white.

It was originally discovered by our English hero, Dr. Griffith, in the swamps of Ayer-Punnus in Malacca, with two species of *Nepenthes*. Later it was discovered in Borneo (Pontianuk, imported by Messrs. Veitch), and now Mr. Regnier, of Fontenay-sous-Bois, sends fine fresh specimens, which came originally from Cambodia. *H. G. Rehb. f.*

ODONTOGLOSSUM CUSPIDATUM (*Rehb. f.*) *PLATYGLOSSUM*, *n. var.*

I described this curious plant as long ago as 1876 in *Gardner, Linnaea*, xli., p. 26. It is also represented in my *Xenia Orchidacea*, ii., t. 18. It is allied to *Odontoglossum luteo-purpureum*, but the petals are very acuminate and not edged, and the narrow lip is terminated by an abrupt cuspidate apex in lieu of

* To be a perfect illustration some people must be supposed to have more than two hands, and some only one.

† *Megaclinium oxyodon*, *n. sp.*—Rhizomate repente; pseudobulbis distantibus sphaeroides-tetragonis diphyllis; foliis cuneato-ligulatis acutis valde coriaceis; pedunculo densissime imbricato vaginato; rachis foliacea ligulata apiculata margine vix lobulata; bracteis triangularibus deflexis; floribus *Megaclinii falcati*; tepalis longioribus magis arcuatis; labello trilobo brevi, lobis lateralibus angulatis; columna lata juxta androclinium utrinque dento magno introrso. Bulbophyllum *oxyodon*, *H. G. Rehb. f.*

this requires a damper situation than *M. nepalensis*, we gave it this in some instances, and the cloudy, damp weather seems to be just what it likes. The flowers of *Iris Kämpferi* also last longer than they do in the sunny weather which usually prevails when they are out. I have always believed of this *Iris* that it was important that the seed should be sown as soon as ripe, that the roots should not be in the water, and that the clumps should not be disturbed. Unsuitable weather, my being busy, and other matters, prevented the seed, which ought to have been in the ground last autumn, being sown till this May; to my surprise it came up thickly in about a month. I should mention that the seed was kept in the pods, but many of them had opened. A few plants which I tried with the roots in the water look healthy, and are blooming well, and a visitor to our garden tells me that he has seen a sketch taken in Japan where the plants were quite in the water.

Some of my oldest clumps being rather bare in the middle, I broke a few up in May into six or seven pieces, and planted them quite near the undivided ones; the pieces are blooming the best. I think these unexpected results may be worth recording. *George F. Wilson.*

SPATHOGLOTTIS AUREA.

DR. LINDLEY named this fine plant as early as 1850 in *Paton's Flower Garden*, vol. i., p. 16, n. 32, stating that it was introduced by Messrs. Veitch & Son, having been discovered by T. Lobb, in Mount Ophir, in the same locality as *Nepenthes sanguinea*. I have no memorandum as to whether it flowered with Messrs. Veitch or not, but it would appear that it did. My late friend, Mr. John Gould Veitch, presented me with a wild specimen gathered by Mr. T. Lobb, and labelled Borneo. A nearly flowerless peduncle, with four or two (!) bracts may be from Malacca. For a quarter of a century, as far as I know, nothing fresh was known about the plant till it was quite lately re-introduced by Mr. F. Sander, having been collected by his traveller, Mr. Foerstermann, who hoped that it might be new. I could not see any distinguishing character in the dried specimens, but I hoped for some good overlooked mark of distinction in the fresh plants. Sir Trevor Lawrence, Bart., M.P., P.R.H.S., has been so kind as to send me a fine peduncle more than 3 feet in length, far better than Griffiths' specimen in Dr. Lindley's herbarium. The study of these materials brought one surprising fact to light, viz., that the mid-partition at the apex of the lip is subject to the greatest variation. It occurs quite narrow and acute, or broad, or very broad at the top, simply retuse, or acute, or three-toothed.

The leaves are plaited membranous ligulate-lanceolate acuminate, more than 3 feet in length by 1½ inch in breadth. The peduncle kindly sent me by Sir Trevor is purple, green at the top. There are twenty-one bracts, which are divaricate, ligulate concave, nearly spoon-shaped, which gives a very remarkable appearance. The flowers are a little larger than those of *Phaius cupreus* and *flavus*, excepting for the narrow lip. The sepals and petals are oblong obtuse, spreading, of the brightest yellow. The sepals have some brown longitudinal lines and some brown marks at the base. The side partitions of the lip linear are retuse, central partition with a triangular acute auricle at each side at the base, and a central part of distinct shape, to which allusion has been made above. There is a saddle-like two-shanked yellow callus at the base. The colour is yellow, with small purple-brown lines on the lips, excepting at the top of the mid-partition. Arched column yellow. There is no doubt the plant is a fine one, well worth cultivating. *H. G. Rehb. f.*

[The plant was shown and certificated under the name of *S. Kimballiana* at the recent Temple show, where it formed one of the features in the remarkable group exhibited by Sir Trevor Lawrence. Our illustration (fig. 9) was taken from this plant by Mr.

W. G. Smith. We may add the following particulars of cultivation, &c. Ed.] :—

The cultural treatment it requires is much the same as that afforded to the genus *Bletia*, the material used in potting being turfy yellow loam, peat, and sphagnum moss with a little silver sand added—the *Spathoglottis* being terrestrial plants.

Spathoglottis aurea was first sold at Stevens' Rooms by its importers, Messrs. F. Sander & Co., in September, 1886, with a glowing, but it must be owned, an accurate description. It forms an admirable companion to the beautiful *Spathoglottis augustorum* which is the same in general appearance, but white and rose, and the rather smaller bright rose *S. plicatum*, both of which were introduced by Linden of Brussels.

NURSERY NOTES.

ORCHIDS AT MR. WILLIAM BULL'S.

WITH unabated splendour runs Mr. Bull's Orchid show, which has attracted so many distinguished visitors to his establishment in the King's Road, Chelsea. The arrangement of the long Orchid show-house, its stages edged with drooping *Panicum* and the setting of Maidenhair, and graceful Palms of the *Cocos Weddelliana* character, is the same as at the opening some months ago, but during the intervening time a continual and entire change has taken place in the occupants of the house, as one after the other the great and showy sections of Orchids come into bloom, the display from first to last being linked together by the successive flowering of fine forms of *Odontoglossum crispum*, for which the establishment is noted. A while ago the principal feature observed was the many large specimens of *Miltonia vexillaria*, its rosy flowers mingling with the snow-white flower-sprays of *Odontoglossum crispum*, the numerous flowers of *Masdevallia Harryana*, in all tints from pale lilac to brilliant scarlet. At present the numerous varieties of *Cattleya Gaskelliana* and *C. Mendelii* are grandly flowered and tastefully arranged with *Odontoglossum crispum* and *O. Pescatorei* specimens form the striking feature of the display, and to the florist perhaps the most noteworthy; but the pleasures of the orchidist begin with the inspection of the rare and new species and varieties or those which, although not rare are not often observed in such fine specimens.

The *Cypripediums* in bloom just now of first importance—are *C. Lawrenceanum coloratum*, a rich crimson tinged flower; *C. Stonei* roseum, finely formed flowers, whose colour is suffused rose; *C. cananthum superbum*, *C. concolor tonquinense*, *C. bellatulum*, *C. b. roseum*, *C. Godefroya*, *C. Sanderianum*, *C. ciliolare*, *C. Dauthieri*, many varieties of *C. barbatum*, *C. caudatum*, and a fine six-flowered spike of *C. Parishii*, which has very peculiar leafy bracts.

Besides varieties of *Cattleya labiata*, which make a fine show, are *C. velutina*, *C. superba*, many varieties of *C. gigas*, among which it is difficult to conceive a more richly coloured flower than *C. g. regalis*; *C. Lawrenceana*, *C. guttata Leopoldi*, *C. Eldorado*, and several varieties of *C. Harrisoniæ*. The *Lælias* contribute to the show, *L. cinnabarina*, *L. crispa superba*, *L. xanthina*, and *L. elegans*.

Besides the great show of the large white *Odontoglossums*, which is a continuous feature, the other *Odontoglossums* in bloom in more or less quantity are *Cervantesi*, in great variety; *O. hastilabium*, *O. nebulosum*, *O. Schleiperianum*, *O. citrosium*, *O. cristatum*, *O. cristatellum*, *O. cordatum Kiennastianum*, many examples of *O. Harryanum*, *O. Andersonianum*, and many hybrids whose parentage it would be difficult to guess. Of *Miltonias*—a feature of the nursery—there were *vexillarium rubrum* and *M. v. Chelseiense*, with fine purple radiating lines in the centre. In *Oncidiums* may be mentioned some grand specimens of *O. macranthum*, and one with over fifty flowers; *O. hastatum Ernestii*, a charming thing; *O. cornigerum*, *O. Schlimmii*, *O. leucochilum*, *O. sarcodes*, *O. janieriense*, and many others.

Masdevallas are well represented, the perfection of brilliancy being found in *M. Harryana Meteor*, whose flowers are of a glowing scarlet, with a yellow eye; and of the most interest botanically are the curious beetle-like flowers, numerous produced, of species of the pigmy *M. triaristella*.

Many *Aërides*, *Saccolabiums*, *Vandas*, and *Dendrobiums* are in flower; the handsome *Epidendrum atropurpureum*, *E. nemorale*, *E. prismatocarpum*, *Brassia antherotes*, *Sobralia macrantha*, *Catasetum sanguineum*, *Zygopetalum Gautieri*, *Calanthe veratrifolia*, *C. Dominiana*, *C. vestita gigantea*, *Lycaste Skinneri*, *L. Deppei*, *Miltonia Regnelli*, *Anguloeburnea*, *A. Clowesii*, and *A. Ruckerii punctata*, *Angraecum falcatum*, *Disa grandiflora*, and some fine *Stanhoopes*.

At the further end of the house a pleasing feature in the arrangement is presented by *Oncidium Papilio* and *O. Krameri*, whose numerous butterfly-like flowers mingle with those of *Phalenopsis amabilis*, *P. Sanderiana*, and *P. speciosa*, and beneath which appear the scarlet blossoms of *Epidendrum vitellinum majus*, the white and orange *Dendrobium Jamesianum* and *D. formosum giganteum*, and the graceful *Dendrochilum filiforme*—*Asparagus plumosus* and Maidenhair forming the setting.

MESSRS. J. LAING & SONS.

Owing to the lateness of the season the outdoor Tuberous *Begonias* at the Forest Hill Nurseries are rather backward just now, but there is full promise of a brilliant display of colour at a later date. In the houses, however, there is a fine lot of plants in flower. It is unnecessary to speak of the general points of the strain, which is well known. Of first merit are the strain called by the title "Royal;" the flowers are very large, flat, and of good substance. *Princess Louise*, a fine round flower, is one of the best whites; *Princess Victoria*, rosy-crimson; *Duke of Edinburgh*, deep red, and very rich; *Duchess of Edinburgh*, a rich golden-yellow, are some of the best singles in flower; and *Duchess of Teck*, a fine double, measuring 2 to 3 inches in diameter. Of other single varieties *pendula* deserves to be placed in the front rank as a basket plant. It is, as its name implies, of a pendulous habit, the rose flowers being freely produced, and attain about 6 inches in diameter. *A. G. Soames* is a fine deep crimson of the ordinary type, and *Guardsman*, a good scarlet; of the bicoloured sorts *Charmer*, white, with a rich crimson edge, still remains a good form. *Golden Queen* was the best yellow, being the colour of the Buttercup, and *Torey Laing* should be named as a strange coloured flower, it is a yellowish-red and very distinct. *Snowball* is a full pure double white and *Lady J. Goldsmid*, a delicate salmon-pink, also double, as is also *Viscountess*, white with rose-margin.

Of ornamental foliaged *Begonias*, *B. Lubbersii*, recently illustrated in these columns, is well grown; and we also saw plants of *B. M. Hardy*, deep claret, and *B. albo-violaceus*, similar to *M. Hardy* with a metallic whitish tinge over it.

In the Orchid-house there were several small pieces of the graceful airy-looking *Dendrochilum filiforme* in flower, used as an edging to the stage, in which situation it looked extremely well. *Cattleya Gaskelliana* in several forms were in full flower, and there was a large stock of *Dendrobium Wardianum*, in excellent condition. The *Caladiums* were to be seen to advantage in several grand specimen plants of such varieties as *candidum*, *albo-luteum*, *amœnum*, pale rose, with dark ribs and a green edge; *La Perle de Brèsel*, rosy-white, with dark green veins; *Madame M. Scheffer*, white, reddish-brown and green lines and a green border; *L'Automne*, grey spots on white—a distinct variety; *Le Titien*, red and green, with red ribs—a very pretty and bright thing. *Triomphe de l'Exposition* is a deep red self, with deeper ribs. A remarkable greyish-red is seen in *M. J. Picot*, and in *Sancho-nianthon* is a large leaf of crimson, with a bright green edge. *Hastatum* is not so vivid, being green

with a few large white spots—a very pleasing combination.

Phyllanthus Chantrieri should be in the possession of lovers of the strange, yet pretty and graceful; it bears branches in a tufted manner, coming from the stem in a gentle downward curve as in some Conifers. This plant is about 2 feet high, and is a slow grower, the leaves dark green, glossy, arranged in two rows along the branch, with the flowers laying on them.

Gloxinias were represented by a few good plants, but the majority had finished flowering. There is one of the finest whites we have seen, under

plants, a section of which Coombe Wood has many to show, and these mainly natives of Japan, China, and New Zealand, countries that have supplied Messrs. J. Veitch & Sons with many of their finest novelties in trees and shrubs.

The first visit is usually made to the greenhouses and propagating pits and houses, not so much for their contents, but from the circumstance that the outer walls are clothed in parts with plants not seen elsewhere, and of which the gardener knows but little. Of these plants we may name *Elaeagnus macrophyllus*, a large-leaved species, with stout, large, entire leaves of grey-green—a fine thing

side. *Clematis coccinea*, with scarlet tubular flowers, and *C. crispa*, with blue ones, but not yet out, were planted against the opposite walls. *C. coccinea*, although of annual growth from the ground level, makes a considerable amount yearly, and would reach the top of a wall 8 feet high. *Tracheliospermum jasminoides* the perfection of an evergreen covering for a dwarf wall. It has neat small leaves, and clings without being nailed or otherwise fastened to it. It was coming into flower. *Lonicera japonica*, with flowers white and yellow, is excellent for a wall—it will flower up to November.

In the open parts of the nursery we found *Phyl-*



FIG. 9.—*SPATHOGLOTTIS AUREA* (KIMBALLIANA): TOP OF THE FLOWER-STALK, FLOWERS YELLOW. (SEE P. 92.)

the name of *Virginalis*. Mrs. Brockhaus is violet, with a spotted edge, fading towards the margin. There were other equally good forms, but it must suffice to mention *Unique*, white, densely spotted with faint lilac; and *Favourite*, similar, but with pale red spots, both very distinct.

MESSRS. J. VEITCH & SONS, COOMBE WOOD.

THE month of July is one of the best in which to inspect the contents of a tree nursery; for, though you may miss the tints of the early foliage of most species of tree and shrub, and which are seldom of long continuance, the more permanent form and colour of leaf and shoot are better observed. This is more particularly the case amongst evergreen

for a wall, but perhaps too tender to stand quite in the open away from the southern shires. Here it is hardy, and seldom gets disfigured in any way by frost. *E. pungens* has a green leaf edged with creamy-white—a perfectly hardy species, fine for a wall of moderate height; *Grevillea sulphurea* has been full of its quaint blooms, now just over; also a good subject for a low wall; this one, and *G. rosmarinifolia*, with pink and white flowers, were just gone out of bloom (July 17).

A good plant for a shady wall is *Ligustrum lucidum tricolor*. The young shoots are pink in colour, and the leaves yellow and green. There was a plant, *Lagerstœmia indica violacea*, which had flowered last year under glass, but now standing out-

lyrea *Vilmorineana*, and the small *P. V. decora* were doing well. This is an excellent evergreen which everyone ought to get and which does well in smoky localities; *Ligustrum japonicum*, usually seen as a bush, is here grown as a standard, and specimens with neat heads covered with flowers were observed. *Berberis stenophylla* was likewise worked on high stems of *B. Darwini*; these and many other tall subjects form nice "starers" in level masses of other kinds of shrubs.

Genista tinctoria, a dwarf shrub, was finely in flower—capital for a small group or an edging to a bed of shrubs. *Hydrangea mandshurica* differs largely from the common *Hortensia*; it has a larger leaf, and the young growths are black-skinned, the

flowers pink; *Sambucus racemosus* runs into many various forms of leaf; *S. racemosus* var. *seratifolius* is one of the best of these. *Eucryphia pinnatifolia* has white flowers, which appear in September, is an evergreen of distinct appearance. *Philadelphus microphyllus* is a miniature Mock Orange, with shilling-large white flowers, smelling of Pine-apple. A very distinct-looking evergreen is seen in *Adenocarpus decorticans*; *Buddleia intermedia* has a long cluster of light purple flowers, not unlike those of common Sage at a short distance. Several fine species of Japan Oaks, of undoubted hardiness, have grown into good-sized bushes; they would grow equally well in the standard form. *Quercus cuspidata*, now in bloom, is one of the most distinct forms; it has entire leaves, 6–7 inches long and 2 inches wide, of a dark green colour, and leathery texture. Our *Q. ilex* is a pigmy form beside this species.

(To be continued.)

ORCHID NOTES AND GLEANINGS.

CATTLEYA SCHRODERÆ ALBA.

MR. MORSE sends us a flower in which the parts of the flower are in decussate or crossed pairs instead of in threes, having two sepals and two petals without a lip. The column is normal.

ZYGOPETALUM STAPELOIDES, Rehb. f.

This pretty little plant is now flowering in the Kew collection, and though not a showy plant it is one well worthy of cultivation. The flowers bear a certain resemblance to those of certain *Stapeliads*, especially in colour—a circumstance which suggested the specific name. The whole plant is but some 3–4 inches high, growing in a dense tuft, the lanceolate leaves being very pale green, and the flowers, which are borne singly on short peduncles from the base of the pseudo-bulbs, measure 1½–2 inches across, the colour being pale greenish with numerous transverse purple bars, except the lip, which is very dark blackish-purple, running off into spots on the margin. It is well figured at t. 3877 of the *Botanical Magazine*, under the name *Maxillaria stapelioides*, from a plant collected by Gardner, on the Organ Mountains, in Brazil, and which flowered in the Glasgow Botanic Garden, in 1830. It was originally figured and described by Link and Otto, as *Cymbidium stapelioides*, then transferred by Lindley to *Maxillaria*, in his *Genera and Species of Orchilaceous Plants*, afterwards made *Promenaea stapelioides* by the same author, and finally this genus has been merged in *Zygopetalum*, the name now standing as above.

ZYGOPETALUM CITRINUM, Nicholson.

Closely allied to the preceding and very similar in habit is *Zygopetalum citrinum*, a really handsome little gem, also flowering at Kew. The flowers are a little more open, the segments more acute, the colour canary-yellow, the face of the column being striped with reddish-brown, and the side-lobes of the lip spotted with the same colour. It is also a native of Brazil, and is the *Promenaea citrina* of Don. R. A. R.

ONCIDIUM SPENDIDUM, &c.

This very beautiful Orchid is now flowering at the residence of G. C. Raphael, Esq., Castle Hill, Englefield Green. The plant in question is one of very recent importation, and has proved to be quite true to name. The writer had an opportunity of inspecting one of the very few plants of this species when it flowered at Manley Hall, Manchester, now some sixteen years ago, and has no hesitation in saying that the one at present in bloom is in every respect quite up to the original form. The imported plant was placed in a basket with a little peat, crocks, &c., and hung up in a house where *Dendrobiums* were.

Cælogynes, *Miltonia vexillaria* are doing very satisfactorily here; two new growths of the latter species have pushed up which have made four pseudo-bulbs; the more forward one has made a

spike 3 feet long, with three laterals, producing altogether twenty-three flowers of fine size and substance; the second spike is only partially developed. In the same house is *Cælogyne Massangeana*, with a spike of twenty-four flowers. *Oncidium Croesus* has two spikes; *O. Gardnerianum* is in good form; *Miltonia vexillaria* *Cobbianum*, almost pure white; *M. v. rubellum*, very dark in colour and nice in form; *Burlingtonia candida*, *Cattleya Mendelii* *gigas*, *C. Gaskelliana* *superba*, *Disa grandiflora*, *Odontoglossum*, &c., in other houses, are also bright and gay. W. S.

THE ORCHARD HOUSE.

In a season such as the present one, the value of a heating apparatus in these houses is of great value to bring up the flavour in the fruit, and also to develop the wood in the first place, and assist in ripening it later on. Those who have not had great experience in growing orchard-house fruit (Peaches and Nectarines) do not sufficiently realise the importance of the special treatment the trees require in the various stages of the growth of the fruits. I have already detailed the management of the trees when in bloom, and after the blossoms were set, up to the stoning period. For about six weeks, when the stones are forming, the fruit apparently makes no progress, but this is only apparent, as growth is quite as active at that time as at any other; and when the stones are perfectly formed, the fruit rapidly swells and ripens, but in this stage a high temperature is necessary for the production of fruit of large size and good quality; and in cold, dull weather, such as we have had during the last six weeks, this has not been attainable without artificial heat. I noticed this year that in our earliest Peach-house, from which the fruit has just been gathered, the fruits at the warmest part of the house were much larger and of better quality than those close to the ventilators, where the constant circulation of air by day kept the atmosphere some degrees cooler than the part of the trees near the top of the rafters, where the air was at least 5° warmer by night as well as by day.

Pot Trees require a very great deal of attention both during the stoning period and at the time from the finishing of stoning until the fruit is nearly ripe. Neglect to supply the roots with water would be disastrous, and a high temperature can be kept up in warm weather by shutting up the house early, say 4 in the afternoon. The temperature might rise to 90°, and at the time of shutting up the trees ought to be well syringed with water that is nearly as warm as the temperature of the house. In dull cold weather artificial heat is of great service in improving the quality of the fruit. When the fruit is nearly ripe syringing should be discontinued, and more air admitted, and during this time artificial heat may be again very useful. It does not follow that the fruit will not ripen in an unheated house; but it is quite certain that it ripens much better, is of larger size, and superior in flavour with it. The young shoots may have been stopped up to the end of July, but it is better not to do so later. It is a great error to leave too much young wood on the trees—not a shoot should be left that is not necessary. This applies to Pears and Plums; they, of course, ripen much more freely in an unheated house; and some of them do well when placed out-of-doors. I have often urged the importance of repotting any trees that require it soon after the fruit is gathered. The object is to get them well established before the leaf falls. They do not mind a considerable reduction of the roots, even to the extent of chopping off the matted mass of fibres round the ball, reducing it an inch or more all round, and repotting them in the same sized pots.

Trees when planted out do not require a very rich soil, or gross, unfruitful growth will result; but when trees are in in pots, and under the control of the cultivator, a much richer compost becomes necessary. I use good fibrous loam four parts, one

part decayed stable manure, and some crushed bones; and this material requires to be rammed into the pots quite firmly. I have repotted them in sunny weather, and kept the shoots from flagging, and the leaves from dropping off by frequent syringings with tepid water. J. Douglas.

THE FLOWER GARDEN.

MEMORANDA.—In regard to summer bedding plants the present is a good time for taking notes of defects and shortcomings, that they may be avoided in future, and especially in respect of novelties, the arrangement of plants, contemplated changes, and other matters. I would also advise the stay-at-home gardener to leave his retirement and make a point of seeing what his neighbours are doing if he would not lag behind in his profession. Tuberos-rooted Begonias are rapidly rising in favour as summer bedding plants, and in such wet weather as we have recently experienced, their superiority over Pelargoniums has been well proved, so that those who have not hitherto grown them in beds would do well to give them a trial next year. Some of the most attractive beds in the gardens here consist of these plants with a groundwork of *Alternanthera aurea*; the latter, however, is not so effective as *Mesembryanthemum cordifolium* *variegatum*, used on a previous occasion, and another year we must seek for an improvement in other directions; some of the *Sedums*, *Saxifragas*, or *Herniarias*, will probably answer the purpose. Other effective bedders are to be met with in the double-flowered Ivy-leaf Pelargonium *Jeanne Gillet*, of a rich magenta colour, the bed being edged with Golden Pyrethrum. Of the newer zonals I have not yet seen anything to surpass Henry Jacoby or Jenny Dodds, rich crimson and pink respectively; whilst amongst scarlets John Gibbons will probably hold a foremost place for a considerable time to come. Coming to sub-tropical subjects, I find that *Cannabis gigantea* interspersed with *Lilium auratum*, on a groundwork of *Mesembryanthemum*, and an edging of *Alternantheras* make effective beds; the same may be said of *Solanum laciniatum* with a groundwork of *Petunia* Countess of Ellesmere, and an edging of scarlet Tom Thumb Tropæolums. Again, *S. robustum*, Purple King Verbena, with a broad band of *Stachys lanata*, may be noted. The plan of forming carpet-beds in a series of terraces has exceeded our most sanguine expectations, and will certainly be adopted next year; we regard them as being infinitely more pleasing and effective than those that are planted on the old and monotonous "one level" system; of course they require a larger number of plants and more labour to keep them in good order, but this is more than amply compensated for by results. *Cyperus natalensis*, which we are employing for the first time as a "dot plant" on carpet-beds, is found to be a grand acquisition, and will be largely used for the same purpose in the future.

Hardy Bulbs.—Certain species of spring-flowering bulbs growing in mixed borders, and which have been undisturbed for two or three years, may now be lifted and replanted, the principal object being to give them a change of soil, without which bulbous like other plants will deteriorate in the course of time. Amongst others that will be benefited by this treatment we may name *Scilla sibirica*, *S. bifolia*, *Chionodoxa Lucilæ*, Parrot Tulips, and Narcissus. Although many successful growers take up the bulbs—dry, store away and plant at a later period, the practice is not absolutely essential to secure success, and I myself prefer that the work of lifting, sorting, cleaning, and planting should proceed simultaneously. Of course there are cases where this line of practice must be deviated from at times, as in the case of *Ranunculus Asiaticus*, *Anemone coronaria* and their varieties, which may be lifted when ripened off, stored away in a cool place, and planted at a later period.

Hedges.—Where these have not been already trimmed and put in good order, that work ought not to be further delayed. Those of a deciduous character may be cut with a pair of shears, but with evergreens, such as Laurels, &c., it is best to use a knife or scuteur. Those that were planted last autumn or spring may be left uncut. Hoe and clean the soil at the bottom as often as becomes necessary; and see that the young growth does not get choked with weeds. J. Horsfield, Heytesbury.

REPORT ON THE CONDITION OF THE FRUIT CROPS.

[FROM OUR OWN CORRESPONDENTS, JULY, 1888.]

The words "average," "over," or "under," as the case may be, indicate the amount of the crop; and "good," "very good," or "bad," indicate the quality.

COUNTY.	APRICOTS.	PLUMS.	CHERRIES.	PEACHES AND NECTARINES.	APPLES.	PEARS.	SMALL FRUITS.	STRAW- BERRIES.	NUTS.	NAME AND ADDRESS.
SCOTLAND.										
ABERDEEN .....	.....	Over	Under	.....	Average; very late	Under	Average	Early sorts, over; late sorts, average;	.....	John Forest, The Gardens, Habbie House, Aberdeen
.....	Under	Under	Under	.....	Over	Under	Average	Average; early sorts damaged by frost	Under	Robert Farquhar, Fyvie Castle, Fyvie
.....	.....	Under	Under	.....	Under	.....	Average; very good	Average; good	.....	J. F. Smith, Duncricht Gardens, Duncricht
ARGYLL	Under	Under	Average	.....	Under	Under	Average, except Black Currants	Average	.....	G. Taylor, Castle Gardens, Inverary
AYR .....	.....	Average; good	Under; good	.....	Under; bad	Under; bad	Over; good	Over; good	.....	W. Priest, Eglinton Gardens, Irvine
BANFF	Under; fruit healthy	Walls much under; standards better, especially Victorias	Under	Over; healthy	Much under	Over	Abundant	Good	.....	John Webster, Gordon Castle Gardens, Fochabers
CATHNESS	Under; bad	Under; bad	Under; bad	.....	Under; bad	Under; bad	Under; good	Average	.....	Chas. Southland, Langwell Burnside, Dunfermline
CLACKMANNAN	Under	Under	Average; good	Under	Under	Under	Average	Average; good	Under	Thomas Ormiston, Alloa Park, Alloa
DUMBERTON .....	.....	Under	Under	Under	Under	Under	Average; very good	Over; very good	.....	James Mitchell, Comis Estem, Helensburgh
DUMFRIES .....	.....	Under	Under	.....	Under	Under	Average	Under	.....	James Smart, Rachel's Gardens, Lockerbie
EAST LOTHIAN	Under	Average	Average	Over	Under	Average	Over	Average	Under	L. Dow, Newbyth Gardens, Prestonkirk, East Lothian
FIFE	Average	Average	Over; very good	.....	Under	Average	Over; very good	Under; bad	.....	George Ramsay, Fordell Gardens, Inverkeithing
FORFAR .....	.....	Average	Average	.....	Average	Over	Over	Over	.....	James Mitchell, Fannure Gardens, Carnoustie
.....	Average; good	Average; good	Over; good	.....	Average; good	Under; good	Under; good	Under; good	.....	David Milam, Ealhamoon, Brechin
KINROSS .....	.....	Under	Under	.....	Under	Under	Average	Under	.....	John Fortune, Blair Adam Gardens, Kinross
MIDLOTHIAN	Average; very fine	Over; very good	Over; very good	Heavy crop; very fine	Average; very fine	Over; very fine	Abundant; very good	Average; fine	Average; good	M. Dunn, Dalkeith Gardens, Dalkeith
.....	Under; good	Average	Average	.....	Under; good	Under; good	Over; good	Average; good	.....	Charles Johnston, Dalhousie Castle Gardens, Lasswade
MORAY	Much under	Under	Under	Average	Much under	Under	Average	Under	.....	Donald Cunningham, Burnaway Castle Gardens, Forres
NAIRN	Bad	Under	Average	Under	Average	Average	Very good	Good	.....	James Manson, Killarock Castle, Fort George
ORKNEY .....	.....	.....	Average	Under	Under	Average; good	Over	Average	.....	Thos. Macdonald, Balfour Castle Gardens, Kirkwall
PEEBLES .....	.....	Under	Under	.....	Average	.....	Abundant	Promise well	.....	W. McIntyre, Glen Gardens, Inverleithen
PERTH	Average	Over	Over	.....	Under	Average	Over	Average	.....	J. King, Blair Drummond, Stirling
.....	.....	Average; good	Very fine	.....	Average	Under	Over	Over	.....	John Robb, Drummond Castle, Crieff
.....	Under; very good	Under; good	Over; very good	Over; very good	Under; very good	Under; good	Under; good	Average; very good	.....	P. W. Fairgrieve, Dunkeld Gardens, Dunkeld
.....	Average	Average	Under	Over	Under	Over	Over	Over	.....	J. R. McKiddie, Rosbie Thory Gardens, Inchture
RENFREW .....	.....	Under	Average	.....	Under; bad	Under; bad	Average	Average; good	.....	Thomas Lunt, Ardgowan Gardens, Greenock
ROSS	Average	Average	Average	Average	Under; bad	Average	Average; good	Under; good	.....	J. Mackay, New Tarbat Gardens, Parkhill
.....	Under	Under	Under	Over; but late. (Nectarines not grown.)	Under; bad	Under	Average	Average	.....	D. Harvey, Castle Gardens, Invergordon
STIRLING	Average; good	Under; good	Under; good	Average; good	Under	Under	Average	Average; good	.....	Maurice Fitzgerald, Dunmore Park, Airth Station
SUTHERLAND .....	.....	Over	Over	.....	Under	Under	Average	Average	Average	D. Melville, Dunrobin Castle Gardens, Golspie
WIGTOWN .....	.....	Average; good	Average; very good	.....	Under; very good	Under; good	Over; very good	Over; very good	.....	W. Crauden, Castle Kennedy, Stranraer
ENGLAND—NORTHERN COUNTIES.										
NORTHUMBERLAND	Over; very good	Under	Under	Over; very good	Under	Under	Average	Under	.....	George Harris, Alnwick Castle Gardens
.....	Average; good	Under	Average; good	Average	Under	Under; good	Very good	Average; good	Under	David Inglis, Howick Hall, Lesbury
WESTMORELAND .....	.....	Under	Average	.....	Under	Under	Average	Under	Average	W. A. Miller, Landerley, Kirkby Lonsdale
PURHAM .....	.....	Under	Average; Morillas over	.....	Under	Under	Over	Under	Under	J. Hunter, Lambton Gardens, Farncliffe House
.....	Plentiful on hot walls	Very few; Davison's none	Over; good	.....	Bad	Bad	Plentiful	Variable; some places plentiful	Bad	Ed. Westcott, Ruby Gardens, Darlington
YORK	Under	Under	Average	Good	Bad	Bad	Very good	Average	.....	Thomas Jones, Ribton, Wetherby
.....	Average	Average	Over	Average	Average	Average	Under	Average	Average	Robert C. Kingston, Brantinghamthorpe, Brough
.....	Very bad	Under	Average	Average	Under	Bad	Good	Under	Good	Joseph Shaw, Nunappleton, Bolton Percy
.....	Under; good	Under	Average; very good	Over; very good	Under; good	Under; good	Over; very good	Under; good	Average	Wm. Chuck, Brodsworth Hall, Doncaster
.....	Average	Moderate	Good	Good	Bad	Moderate	Good	Bad	Under	William Culverwell, Thorpe Perrow, Bedale
.....	Under	Over	Over	.....	Average	Average	Average	Average	.....	Jas. Bath, The Gardens, Wentworth Castle, Rotherham

CONDITION OF THE FRUIT CROPS—(Continued).

COUNTY.	APRICOTS.	PLUMS.	CHERRIES.	PEACHES AND NEC- TARINES.	APPLES.	PEARS.	SMALL FRUITS.	STRAW- BERRIES.	NUTS.	NAME AND ADDRESS.
NORTHERN COUNTIES.										
LANCASHIRE	Under	Under	Morellos excel- lent	Failure	Under; good	Under	Over; very good	Under	.....	W. B. Upjohn, Worsley Gar- dens, Manchester
	Over; good	Over; good	Average; good	Under; good	Under; good	Under; good	Average; good	Under; bad	.....	W. P. Roberts, Cuerdon Hall, Preston
	.....	Under	Morellos aver- age	.....	Under	Under	Average	Under	.....	Henry Lindsay, Huntroyde Gardens, Burnley
EASTERN COUNTIES										
LINCOLN	Average; good	Under; good	Average; very good	Under; good	Nearly aver- age; very good	Over; very good	Over; very good	Average; good	Over	A. S. Elder, Highfield, Gains- borough
	Under	Under	Over	Under	Under	Under	Average	Under	Under	W. Ingram, Belvoir Castle Gar- dens, Grantham
	Average; good	Under; bad	Average	Average; good	Under; bad	Under; fair	Average; very good	Average; good	Walnuts over; Filberts under	D. Lumsden, Bloxholm Hall, Sleaford
	Under	Under	Average; bad	.....	Average; good	Average; very good	Average	Under; bad	Average	J. Rowlands, Bardney Manor Gardens, Lincoln
	Over	Under	Average	Over	Under	Under	Average	Average	Under	J. Spilsbury, Blankney Hall, Lincoln
NORFOLK	Under	Under	Average	Over	Under	Under; bad	Average	Much under; very bad	.....	T. Vinden, Harlaxton Manor, Grantham
	Under	Under	Over	Under	Under	Under	Average	Average; good	Under	H. Batchelor, Catton Park, Norwich
	Under	Under	Average	Under	Average	Average	Average	Average	Under	W. Shingler, Melton Constable, East Dereham
	Under	Under	Average; good	Under	Under	Average	Average; good	Average	Under	J. Forder, Hillington Hall, King's Lynn
	Under	Under	Average	Under	Under	Under	Very good	Good	Under	O. Real, Shotesham Park Norwich
SUFFOLK	Under	Under	Average; good	Under	Under	Under	Over; very good	Over; good	Under	F. Lee, Lynford Hall, Mund- ford
	Under	Under	Average	Under	Average	Under	Average; good	Average; good	Under	R. Funton, Wroxham Hall Gardens, Norwich
	.....	.....	Fair	Fair	Very few	Half a crop	Good	Good	.....	C. Penny, Sandringham, King's Lynn
	Under	Under	Under (des- ert); Morello average	Average; good	Under; bad	Under; bad	Average; good	Under; bad	Under	J. Wallis, Orwell Park, near Ipswich
	Under; good	Under; good	Average; good	Average; good	Under; bad	Under; bad	Over; very good	Under	.....	R. Squibbs, Ickworth, Bury St. Edmunds
ESSEX	Under	Under	Over; very good	Hardly aver- age; good	Under	Under	Average; good	Under	Under	D. T. Fish, Hardwicke, Bury St. Edmunds
	Under	Under	Average	Under	Under	Average	Average; good	Under	Under	J. Sheppard, Woolverstone Park, Ipswich
	Under	Average; good	Over; good	Over; good	Under	Under	Over; good	Average; very fine	Filberts under; Wal- nuts good	H. Rogers, Rendlesham Gar- dens, Woodbridge
	Under; good	Under; very good	Over; good	Average; good	Under	Average; good	Over; good	Under; good	Average	G. Eden, Henham Gardens, Wagford
	Under; very good	Average; good	Average; good	Under; bad	Under; good	Average; good	Over average; very good	Average; good	.....	A. Ocock, Havering Park, Romford
MIDLAND COUNTIES.	Under	Under	Average	Average	Average	Over	Over; very good	Average	.....	D. Donald, Knots Green, Leyton
	Under; bad	Under; bad	Over; good	Under; bad	Under; good	Under; good	Average; good	Over; good	Average	W. Smith, Birch Hall, Col- chester
	Under	Under	Average; good	Under	Under; bad	Under; bad	Average; good	Under	.....	W. F. Bowman, Highlands, Chelmsford
	.....	Over	Over; good	.....	Under; good	Average	Average	.....	Average	J. Douglas, Great Gearies, Ilford
	Under	Average	Over	Under	Under	Average	Over	Over	Under	W. Earley, Double House, Ilford
DERBY	Under	Average; good	Over; good	Under	Under	Average; good	Over; good	Over; good	Average	C. Butler, Parndon Hall Gar- dens, Harlow
	.....	Under	Over	.....	Average	Under	Over	Under	.....	Owen Thomas, Chatsworth Gardens, Chesterfield
	Under	Under	Average	.....	Average	Average	Average; good	Under; good	Under	Thomas Keetley, Darling Abbey Gardens
	.....	Under	Average; good	.....	Under	Under	Average; good	Under; bad	Average	John Horton, Welbeck Gar- dens, Worksop
	Under	Under	Average	Average	Under	Under	Average	Under	Under	S. A. Woods, Osberton Gar- dens, Worksop
LEICESTER	Average	Under	Over	.....	Average	Average	Plentiful	Average	.....	A. Henderson, Thoresby, Ol- lerton
	Under	Under	Good	Good	Average	Very good	Good	Very good	.....	M. Gleeson, Clumber Park, Worksop
	Under; good	Under	Very good	Under	Under	Under	Very good	Good	Bad	Alfred Hamshire, The Gardens, Beaumanor Park, Lough- borough
	Under	Over; good	Average; very good	Under	Under	Average; good	Average; very good	Under	Average; very good	J. Whirlidge, Staunton Harold, Ashby-de-la-Zouch
	Over; very good	Average; good	Average; good	Over; very good	Average; bad	Under; good	Over; very good	Under; bad	Average	G. O. Maynard, Cole Orton Hall, Ashby-de-la-Zouch
RUTLAND	Average; good	Under	Average; good	Over	Under	Under	Over; good	Under	.....	H. Wood, Bosworth Park, Hinckley
	Under	.....	Morellos good	Under	Under	Under	Abundant; good	Average	Average	J. Grey, Normanton Park, Stamford
	Under	Average; very good	Average; very good	.....	Average; good	Average; good	Average; very good	Under; bad	.....	H. Mason, Bisbrook Hall Gar- dens, Uppingham
	Under	Under	Over; good	Under; bad	Under	Under	Average	Partial failure	Walnuts aver- age	Wm. Miller, Combe Abbey Gardens, Coventry
	Average; good	Under	Average	Average; good	Average	Average; good	Over; very good	Average; bad	Over	J. Rodger, The Gardens, Char- lotte Park, Warwick
WARWICK	Under	Average	Under	.....	Average	Under	Very good	Average	Under	J. Bowler, Caldecote Gardens, Nuneaton
	Average	Average	Average	Under	Average	Under	Very good	Average	Under	T. Beddard, Stoneleigh Abbey, Kenilworth
	Under; good	Under; good	Average; good	Average; good	Average; good	Over; very good	Over; very good	Average; bad	Average	A. D. Christie, Castle Gardens, Warwick
	Under	Over	Over	Average	Over	Over	Abundant; good	Under	Over	R. Greenfield, Priory Gardens, Warwick
	Under	Under	Under	Average	Under	Under	Under	Under	Average	J. Trigger, Milton Gardens, Peterborough
NORTHAMPTON	Under	Under	Under	Average	Average	Average	Average	Under	.....	J. House, Eastgate Nurseries, Peterborough
	Under	Bad	Average	Average	Average	Average	Very good	Bad	Bad	G. H. Goldsmith, Floors House, Weedon

CONDITION OF THE FRUIT CROPS—(Continued).

COUNTY.	APRICOTS.	PLUMS.	CHERRIES.	PEACHES AND NECTARINES.	APPLES.	PEARS.	SMALL FRUITS.	STRAW- BERRIES.	NUTS.	NAME AND ADDRESS.
MIDLAND COUNTIES.										
NORTHAMPTON	Average; good	Under; bad	Average	Average; good	Under; bad	Under; bad	Average; very good	Average; good	Average; very good	Henry Birch, Castle Ashby Gardens
	Average; good	Average; good	Under; good	Bad	Average; under	Bad	Very good	Bad	.....	Henry Watt, Rockingham Castle, Rockingham
	.....	Under; bad	Average	Average	Average	Average	Average	Under; bad	Under	W. S. Miller, Whittlebury, Towcester
	Under; good	Under; good	Average; good	Average; very good	Average; good	Average; good	Over; very good	Average very good	Under; bad	H. Turner, Fineshade Abbey, Stamford
BEDS.	Under Much under; good	Under Much under; good	Over; good Average; good	Under Under; good	Under Under; good	Average Under; good	Over; good Above; good	Under; good	Average; Average; Walnuts over, good	Northampton Edmund Cole, Althorp Park G. Ford, Wrest Park, Ampthill
	.....	Under	Average	.....	Under; good	Under	Average; good	Average; very good	Under	F. Hedley, Putteridge Park Gardens, Luton
	.....	.....	Average	Under	Under	Under	Under	Average	Under	William M. Baillie, Luton Ho Park, Luton
	Average	Under	Morellos aver- age	Under	Under	Under	Average	Average	Under	A. McKay, Woburn Abbey, Woburn
	Under	Under	Average	Average	Under	Under	Average	Under	Under	C. Turner, Cranfield Court, Newport Pagnell
OXFORD	Under; bad	Under	Over	Average; good	Under; bad	Under	Over; good	Average; good	Under	H. Perkins, Greenlands, Hen- ley-on-Thames
	Under; very good	Over; very good	Over; good	Average	Under; good	Average; very good	Average; good	Under; good	Under	C. Hewett, The Gardens, Dayles- ford, Chipping Norton
	Average	Under	Average	Over	Average	Under	Average	Under	Average	H. Downing, Heythrop Gar- dens, Chipping Norton
	Under; good	Under; good	Average; good	Under; good	Under; bad	Under; good on walls	Over; good	Average; good	Under; Wal- nuts average	G. Stanton, Park Place Gardens, Henley-on-Thames
BUCKS.	Average	Average	Average	Under	Under	Average	Average	Under	Under	G. T. Miles, Wycombe Abbey, High Wycombe
	Under	Average; good	Average	Average; good	Under	Under	Average; good	Average; good	Average; good	J. Smith, Mentmore, Leighton Buzard
	Under; bad	Under	Average	Under	Under; bad	Under	Over; very good	Average; good	Average	J. Thomas, Shardeloes Gardens, Amersham
	Average	Under; bad	Under; bad	Very bad	Under; bad	Under	Average; good	Average; good	Average	C. Herrin, Dropmore, Maiden- head
	Under	Under	Good	Under	Under	Under	Very good	Very good	Average	W. Waters, Bulstrode Gardens, Gerard's Cross
	Under	Under	Average	.....	Under	Under	Average; good	Average; very good	Under	J. Bone, Latimer Gardens, Chesham
HERTS.	Under	Average	Average; good	Average	Under	Average; bad	Average	Average	Average	G. Norman, The Gardens, Hat- field House, Hatfield
	Average; good	Under	Average; good	Average; good	Much under; bad	Walls aver- age; pyramids under	Over; good	Average; fine	Filberts under; Walnuts aver- age	Richd. Ruffet, Panshanger, Hertford
	Average, under protectors	Under on bushes, good on walls	Average on walls; or- chards and bushes under	Average; very good	.....	Under	Over; very good	Average; very good	Under	J. C. Mundell, Moor Park Gar- dens, Rickmansworth
	Under; good	Under; good	Under; good	.....	Under; good	Under; good	Average; good	Average; good	Under; bad	J. Thompson, Gorhambury Gar- dens, St. Albans
	.....	On walls, average; standards, under	Over; good	Average; late	Average	Under	Much over; good	Average; good	Under	J. Kipling, Knebworth Park, Knebworth
WESTERN COUNTIES.										
GLOUCESTER	Average; good	Under	Average	Under	Average	Under	Over; good	Average	.....	William Nash, Badminton Gar- dens, Badminton
	Average; good	Under; very bad	Average; good	Under; good	Average; good	Average; good	Average; very good	Under; good	Average	A. Scott, Sherborne House, Northleach
	Under	Much under	Average	Average	Under	Under	Over	Over	Average	John Sowray, Highnam Court Gardens, Gloucester
	Under	Average	Average; good	Average	Average	Over	Over; very good	Under; bad	Average; good	W. R. Greenway, Frotherne Court Gardens, Stonehouse
	Under	Under	Under	Under	Average	Under	Over	Average	Very good	W. Greenaway, Dodington Park Gardens, Chipping Sodbury
	Good	Average	Good, espe- cially Morellos	Average	Average	Good	Good	Good	Under	Arthur Chapman, Weston Birt Gardens, Tetbury
MONMOUTH	Average; good	Under; good	Average	.....	Under	Average; very good	Over; good	Average; good	Over	Thomas Coomber, The Hendra Gardens, Monmouth
HEREFORD	Under	Under	Over; very good	Average; good	Average	Average; very good	Over; very good	Under	Under	William Coleman, Eastnor Castle, Ledbury
	Average; good	Under; bad	Under; good	Average; good	Under; bad	Under; good	Over; good	Average; good	Average	Kenneth McKenzie, Allensmore Court, Fram Green
	Average; very good	Under; good	Over; very good	Under; bad	Average; very good	Average; very good	Over; very good	Over; very good	Average; good	A. Ward, Stoke Edith Gardens, Hereford
	Under	Under	Average	Under	Much under	Average	Over	Average	Average	Chas. Denting, Holme Lacy Gardens, Hereford
WORCESTER.	Over; very good	Average; good	Over; very good	Average; good	Average; good	Over; very good	Over; very good	Under; good on young plants	Average; good	William Crump, Madresfield Court, Malvern
	Average; good	Under; good	Under; bad	Average; good	Under; bad	Under; bad	Over; good	Over; bad	Under	John Austen, Witley Court, Stourport
	Under	Average; good	Under	Over; good	Under; fair	Under; fair	Over; good	Average; good	Average	Arthur Barker, Hindlip Gar- dens, Worcester
	Average	Average	Average	Average	Scarce	Good crop	Average	Half crop	Scarce	R. Robbins, Rhydd Court, Hanley Castle
	Average; good	Under; good	Over; good	Under; good	Under	Under; good	Over; very good	Average; good	Under	Edward Ward, Hewell, Brome- grove
	Under	Average	Under; bad	Average	Under	Average	Average	Under; bad	.....	J. Ashton, Cotheridge Court, Worcester
	Over; very good	Under	Over; good	Under; bad	Over; very good	Over; good	Over; very good	Over; very good	Average	Walter Child, Croome Court, Seven Stoke
SALOP	Under	Under	Average; good	Under	Under	Average; good	Average	Average	Under	A. S. Kemp, Broadway, Shif- nal
	Average	Under	Under	Average	Under	Under	Over	Under	Under	James Loudon, The Quinta, Chirk
	Average; very good	Over; very good	Over; very good	Under; good	Under; good	Under; good	Over; very good	Over; very good	Average; good	Richard Milner, Sundorne Castle, Shrewsbury
	Under	Under	Full	Full	Under	Under	Average	Average	Under	Edmund Bland, Oteley Park, Ellesmere
STAFFORD	Under	Under	Over	Under	Average; good	Average	Over; very good	Under	Under	Robert Palmer, Hagley Hall Gardens, Stourbridge
	Average	Under; scarce	Average	Average	Under	Under	Over	Over; very good	Under	Geo. H. Green, Envile Gar- dens, Stourbridge
	Average; good	Average	Under; bad	Under	Average; much blighted	Under	Average; good	Over; good	Average	Henry G. Wilks, Sandon Hall, Stone
	Under; bad	Under; bad	Average; good	.....	Under; bad	Average; good	Over; good	Under; bad	Under; bad	W. Ward, Little Aston Gar- dens, Sutton Coldfield

CONDITION OF THE FRUIT CROPS—(Continued).

COUNTY.	APRICOTS.	PLUMS.	CHERRIES.	PEACHES AND NEC- TARINES.	APPLES.	PEARS.	SMALL FRUITS.	STRAW- BERRIES.	NUTS.	NAME AND ADDRESS.
WESTERN COUNTRIES.										
STAFFORD.....	Under; bad	Under; bad	Under; bad	Under; bad	Under; good	Under; good	Average; good	Average; good	.....	John Wallis, Keele Hall Gardens, Newcastle
	Under	Average	Average	Under	Average	Average	Over; good	Under; bad	.....	Robert Mackellar, Abney Hall, Cheshire
	Under; good	Under; good	Average; very good; Morello-overs	Under; good	Under; good	Under; good	Under; very good	Average; very good	Under; good	Jas. Vert, Audley End Gardens, Saffron Walden
CHESHIRE.....	Average	Poor	Good	Average	Average	Average	Average	Under	.....	Joshua Atkins, Tatton Gardens, Knutsford
SOUTHERN COUNTRIES.										
MIDDLESEX.....	Under	Average	Average; good	Average	Over; good	Under; some good; others failure	Average; good	Over; good	Walnuts average	G. W. Wythes, Syon Gardens, Brentford
	.....	Average	Over	Average	Over; good	Over; good	Average	Average	.....	A. F. Barron, Royal Horticultural Society, Chiswick
	Average	Average; good	Average; good	Average	Average	Average	Average	Average	Average	William Bates, Poulett Lodge Gardens, Twickenham
	Under; good	Average; very good	Morello average; good	.....	Under; good	Average; good	Over; very good	Average; good	.....	George Heasman, The Grove, Stanmore
	Under	Average; good	Average; very good	.....	Under	Average; good	Average; good	Under	Walnuts good	Alex. Dean, Bedford
SURREY.....	Under	Under	Average; good	Under	Much under	Under	Over; very good	Over; good	Average	A. Evans, Lythe Hill, Haslemere
	Average; good	Average; good	Over; good	Under; good	Over; very good	Average; good	Average; very good; Black Currants extra	Average; very good	Over; good	John Burnett, The Deepdene, Gardens, Dorking
	Under; good	Under; good	Average; good	Average; good	Under; good	Average; good	Over; very good	Over; very good	Under; good	John Tanner, Tandridge Court Gardens, Godstone
	Under	Under	Average	Under	Under	Under; bad	Average; good	Over	Under	James Gold, High Ashurst, Dorking
	Under	Average; good	Average; good	Average	Under; small	Under	Average; good	Average	.....	W. Swan, Castle Hill Gardens, Englefield Green
KENT.....	Under	Under	Average; good	Average	Under	Average on walls	Average; good	Average; good	Under	Joseph Rost, Eridge Castle, Tunbridge Wells
	Under	Under	Over	.....	Very few	Under	Average	Average; damp spoiled half	Over	Henry Cannell, Nurseries, Swanley
	.....	Over; good	Average; good	Average; good	Under	Under	Over; good	Under; bad	.....	F. Moore, Blendon Hall, Bexley
	Under; bad	Average; good	Under; Morello average	Average; good	Under; bad	Average; very good	Over; very good	Over; very good	Under; bad	William Craik, Hothfield Place, Ashford
	Average; good	Average; good	Average; good; small	Average	Under; good	Under	Average; good	Average	Under	G. A. Don, Bedbury Park, Hawkhurst
	Under; good	Average; good	Average; good	Under	Average; good	Under; good	Average; good	Average	Under	R. Gray, Chevening, Sevenoaks
SUSSEX.....	Under	Under	Under	Average	Under	Under	Average	Over	Average	A. Reid, Possingworth, Cross-in-Hand
	Under	Under	Average	Good	Under	Average	Very good	Very good	Average	Sidney Ford, Leonardlee, Horsham
	Under	Under	Average	Average	Under	Average	Average	Average	Under	F. Rutland, Goodwood, Chichester
	Bad	Bad	Over	Average	Very bad	Under	Over	Good	Average	B. Coombe, Wiston Park Gardens, Steyning
	Under; bad	Average; good	Dessert good; Kentsh and Morello bad	Under; bad	Under; bad	Average; good	Over; very good	Excellent	Average	H. R. Holmes, The Gardens, Ashburnham Place, Battle
HANTS.....	.....	Complete failure	Average; very good	.....	Under; good	Average; very good	Red and Black average; good; Gooseberries under	Average; good	.....	Thos. Myles, Appley Towers, Ryde, Isle of Wight
	Under	Under; good	Average; good	Average; good	Scarce	Much under; bad	Over; good	Average; good	Under; bad	W. Wildsmith, Uckfield Place Gardens, Winchfield
	Under	Under	Over; very good	Average	Under	Under	Over; very good	Average; bad	Under	Edwin Molyneux, Swanmore Park Gardens, Bishop's Waltham
	Under	Under	Over	Under	Under	Average	Over	Over	Average	F. Thirby, Broadlands, Romsey
	Under; bad	Under	Average	Under; bad	Over; good	Over; good	Over; good	Over; good	.....	William Smythe, Basing Park Gardens, Alton
	.....	Under	Average	.....	Much under	Much under	Very good	Average	Good	Philip Edwards, Fowley Gardens, Liphook
BERKS.....	Average	Average	Over	Average	Under	Wall average; none on pyramids	Over	Over; good	Walnuts average; Filberts under	F. Jones, Frogmore, Windsor
	Under; very bad	Average; very good	Average	Average; very good	Under	Under	Average; very good	Average	Under	James Tegg, Bearwood, Wokingham
	Under; good	Average; very good	Average	Under	Under	Average; very bad	Over; very good	Under	Over	J. H. Rose, Lockinge Gardens, Wantage
	Under	Average; good	Average; good	Under	Under	Average	Much over	Average	.....	Neil Sinclair, Easthampstead Park, Wokingham
	Under; good	Under; good	Average; good	Under; bad	Under; bad	Average; good	Over; good	Over; good	Average	Wm. Pope, Highclere Castle, Newbury
	Under	Under	Good	Under	Under	Under	Very good	Good	Filberts under; Walnuts good	Robert Penn, Sulhamstead, Reading
WILTS.....	Under	Under	Under	.....	Under	Under	Average	Under	.....	Thomas King, Devizes Castle, Devizes
	Average	Under	Over; good	Average	Under	Average	Average; good	Under	Average	H. W. Ward, Longford Castle, Salisbury
	Average	Under	Over	Average	Under	Under	Average	Much under	.....	J. Horsefield, Heytesbury
SOUTH-WESTERN COUNTRIES.										
SOMERSET.....	.....	Under	Good	.....	Under	Under	Good	Good	Good	Charles Sully, Fairfield, Bridgewater
	Average	Over; good	Under; very bad; Morello average; good	.....	Under; much blighted	Under; except on walls	Over; very good	Over; good	Walnuts average	John Chalmers, Orchardleigh Gardens, Frome
	Average	Under	Average; good	Under	Under	Under	Average; very good	Average; good	Average	William Hallett, Cossington House Farm, Bridgewater
	Under	Average; very good	Over; good	Under	Average	Over	Over; good	Under; good	Under	W. Jggulden, Marston House Gardens, Frome
DORSET.....	Under	Under	Average	.....	Under	Average	Average; very good	Average; very good	Average	D. Williams, The Gardens, Canford Manor, Wimborne
	Under	Under; good	Average; good	Under	Average; good	Average	Average; very good	Average; good	Average	Edwin Lanning, Charborough Park Gardens, Wareham
	Under	Average	Under	Under	Under	Average	Average; very good	Average; good	Average	William P. Leach, Bryanston Gardens, Blandford

CONDITION OF THE FRUIT CROPS—(Continued).

COUNTY.	APRICOTS.	PLUMS.	CHERRIES.	PEACHES AND NEC- TARINES.	APPLES.	PEARS.	SMALL FRUITS.	STRAW- BERRIES.	NUTS.	NAME AND ADDRESS.
SOUTH-WESTERN COUNTIES.										
DEVON.....	Average	Average; good	Over	Average; good	Average	Over	Over; very good	Average	Average	James Eastone, Wear House near Exeter
	Under	Average on walls; none on pyramids	Average; good	Under half a crop	Good	Good	Average; very good	Very good	Very plentiful	D. C. Lowell, Towedsham, Exeter
	.....	Average; good	Under	Under	Average; good	Average; good	Over; good	Average; good	Average	J. J. Barnes, Stoolhugh Court, Tiverton
	.....	Under	Good	Under; not good	Under	Under	Over; good	Over; good	Scarcely	G. Ecker, Membland, Plympton
CORNWALL.....	.....	Under	Under	Under	Under	Average; bad	Average; bad	Under; bad	Average	J. Mutton, Penselwood, Turo
	.....	Under	.....	Good	Good	Under	Average	Good	.....	O. Mitchell, Tedy Park, Camborne
	.....	Under	Average	Under	Average	Under	Over; good	Average; good	Under	G. Knox, Port Eloe, St. German's
	.....	Under; small	Average; good on walls	Under; bad	Under; small	Under; small	Over; good	Average; large; bad flavour	Average	Chas. Lee, Penance, Toot withed
WALES										
CARMARTHEN.....	.....	Very good	Average	Average	Under	Average; small	Over; ex- cellent	Average; good	Under	Lewis, Box, Edwinstford, Llandilo
CARNARVON.....	Under	Under	Average	Under	Under	Under	Under	Average	.....	Alan Cadder, Vaynol Park, Bangor
DELBIGH.....	Over	Fair on walls, standards poor	Over	Under	Average	Under	Good; berries and Currants over; Rasp- berries under	Under	Under	P. Middleton, Wynnstay Gar- dens, Rhoson
GLAMORGAN.....	Average	Average	Average	Over	Under	Under	Over	Under	.....	J. Moe, Magram Park, Port Talbot
MERIONETH.....	Under	Average; good	Over	.....	Average; very good	Under	Over; good	Average; very good	Under	Mrs. Bennett, Bang Gardens, Corwen
MONTGOMERY.....	Over	Average, no damages	Over; good	Average	Under	Under	Over; good	Over; good	.....	Horace Huntley, Powis Castle Gardens, Welshpool
PEMBROKE.....	.....	Average	Average	Bad	Good	Average	Good	Good	Average	Geo. Griffin, Shewick Park, Haverfordwest
IRELAND										
ARMAGH.....	Under	Under	Under	Under	Average; good	Under	Average	Average; good	Over	Thomas Sheasby, Castle Dillon, Armagh
ANTRIM.....	.....	Under	Average; very good	.....	Under	Average	Average; very good	Over; very good	.....	Geo. Porteous, Garrison Tower, Belfast
CLARE.....	.....	Much under	Under	Under	Average	Under	Average	Average	Average	W. Wilson, Dromoland Gar- dens, Newmarket-on-Feogus
DOWN.....	Under	Average	Average	.....	Under	Under	Average; good	Average	.....	J. Taylor, Mount Stewart
WESTMEATH.....	Under	Bad	Bad	Under	Average	Average	Very good	Very good	Good	J. Igo, Garden Vale, Athlone
KILKENNY.....	.....	Average	Average; good	.....	Average	Average	Over; good	Under; good	Average	W. Gray, Woodstock, Innisfree
CHANNEL ISLANDS.										
JERSEY.....	Under; good	Under; good	Average	Under	Under; good	Under; good	Fair average; good	Abundant; very good	.....	C. B. Saunders, St. Saviour's
GUERNSEY.....	Under	Average	Average; good	Under	Average; good	Average; good	Average; good	Under; good	.....	C. Smith & Son, Caledonia Nursery, St. Heliers
SCILLY.....	.....	Under; bad	.....	.....	Under; good	Under; good	Under; good	Average; good	.....	Geo. D. Vallance, Tresco Abbey Gardens

FORESTRY.

HEDGING.—Privet, Box, and Laurastinus hedges may now receive their first trimming. Nothing excels the switch knife if kept well sharpened for this kind of work. Weed the ground along the line of the hedge, but defer digging the soil till a future time. Where hedges of Yew are being clipped or trimmed have a sharp outlook to see that the workmen burn up or dispose of in a safe way—safe from farm-stock—all prunings, for these, especially in a half dead state, are highly poisonous.

Nursery Work.—During dry weather keep the hoe at work; but there is little use in hoeing during wet weather, a better plan is hand-weeding and carrying all the weeds so collected to the dung-yard. The weeding of seed-beds can now be managed satisfactorily, and if such work be carefully done no evil results will follow from loosening the ground.

A few of the Elm seeds collected during the past fortnight should be sown during dry weather in beds 4 feet wide. Previous to sowing the seeds, it is well to ascertain whether they are fertile or not, a great number this season being destitute of an embryo. Thoroughly work the ground where the seed-beds are to be formed, and should it be found necessary, an addition of leaf-mould, peat, or good vegetable loam, will considerably enhance the strength and growth of the young plants. Do not sow the seeds too deeply; simply roll them over, and sift on from a fine-meshed riddle a half-inch of light sandy loam. Do not roll after covering the

seeds, this being a pernicious practice that cannot be too forcibly condemned. Look over young stock of all kinds, and with a sharp pruning-knife lop off all contending or rival leading shoots, as well as ungainly side-branches. This work, performed while the young stock is in the nursery, is productive of lasting good, and should never be left until the plants are being sent out for final transplanting. Grafts may require attention in the way of removing too tight ligatures, replacing the clay or cement, and breaking off (not pruning) any shoots that may be pushing from the stock beneath the scion.

Insect Pests.—The depredations caused by the various insects have assumed alarming proportions this season, whole plantations of Oak being almost stripped of their verdure. On this estate the Oaks suffered; Elms and Limes have suffered greatly. The exudation of the various caterpillars was falling so thickly on the woodland paths, that many persons were puzzled to account for the constant rain-like, dripping noise, that during the dry and warm weather was carried on uninterruptedly.

Thunder-showers, however, did much good by washing the caterpillars from off the leaves, and so considerably checking their depredations. Miss Ormerod suggests painting a band of tar around the trees that are not affected, and so preventing the insects from ascending to the branches—good old advice, no doubt, for the owners of cockney places with half-a-dozen isolated trees on their lawn, but quite out of the question with the owners of woods and forests.

The Pine-beetles (*Hylurgus piniperda*) have also been at work of late amongst the Austrian and Corsican Pines, and by boring into the leading shoots have quite destroyed the symmetry of the trees, the leaders falling off during the first high wind after the attack. Burning up all brushwood in early spring is the best means of preventing the spread of the Pine-beetle.

Another insect pest that has done much damage in the Kentish woods of late is the goat-moth (*Cossus ligniperda*), the depredations of which have here been almost wholly confined to the Birch and Poplar—the former in particular. It bores into the stems of the trees, and in some instances the holes are so thickly set that one would almost imagine a gun loaded with swan shot had been fired against the trunk.

The best remedy we have found is to bore after the grub with a gimlet, and insert into the holes a mixture of paraffin and lime. This effectually gets rid of the pest, far better than the tar usually recommended, which, where the bark is injured, is highly injurious, and has been the cause of death in numerous instances. Usually the grub bores in from the base of the stem and works its way upwards, the tunnels formed having a most offensive smell, and from which the common name of the moth is derived. Trees on low-lying and damp ground are most liable to the attacks of the goat-moth, but here several Beeches and Poplars growing on high and dry land are likewise affected. *A. D. Webster, Holwood Park, Kent.*

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W. RICHARDS, 41, Wellington Street, Strand, W.C.

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W. RICHARDS, 41, Wellington Street, Strand, W.C.

APPOINTMENTS FOR THE ENSUING WEEK.

SHOWS.

SATURDAY, AUG. 4 { Liverpool Horticultural Association; Royal Southampton Horticultural (both continued on Monday, Aug. 6.

SALES.

TUESDAY, JULY 31 { Orchids in Flower, at Protheroe & Morris' Rooms.
WEDNESDAY, AUG. 1 { Imported and Established Orchids, at Stevens' Rooms (two days).
FRIDAY, AUG. 3 { Imported and Established Orchids, at Protheroe & Morris' Rooms.

The Fruit Crops.

THE reports, which we owe to the kindness of our correspondents, on the condition and prospects of the fruit crops throughout the country, will, we suspect, prove a puzzle to those who seek to ascertain the causes of success or failure. In the South, at any rate, the fine warm summer and autumn of last year "ripened the wood," and the spring gave, in consequence, promise of an abundant harvest. This profusion of flower was marked in the case of most flowering shrubs, which have this year bloomed with a freedom and beauty rarely equalled. But the numerous contingencies and risks to which fruit blossoms are exposed in this country are apt to create a great disproportion between the promise and the fruition. In some parts of Scotland the crop is a grand one. Many of the varieties are beyond average quality, and what is singular is that some varieties which are generally esteemed "regular bearers" are this year fruitless—a matter, however, of relatively little consequence, as the quality is apt to be disproportionate to the quantity. In the Southern and Eastern Counties loud complaints are heard of the ravages made by caterpillars, as already mentioned in our columns; and these it is evident must have occasioned serious losses. In a very general way the results of our enquiries, as summarised in other columns, are as follows:—

Apples are generally under average, except in the Home Counties.

Pears are also under average throughout the country, unless in the South-Western Counties.

Plums show a deficiency everywhere except in Wales and the Channel Islands. Apricots,

Peaches, and Nectarines, are in the same case as Plums.

Cherries, it is singular to note, have furnished a good average throughout the kingdom, except perhaps, in the South and South-West.

Small fruits are generally over average, even in the counties that are most deficient in Apples and Plums.

Strawberries are abundant, but have suffered from rain.

Nuts are under average, and especially so in Kent and Surrey.

The outlook as to the supply of home-grown winter fruit is hence far from good, and America and our colonies will be largely drawn upon to make up the deficiency.

Meanwhile, it is satisfactory to notice the increased attention paid to fruit culture and to matters connected with it. Already two Fruit Conferences are announced, one under the auspices of the Royal Horticultural Society, while another is being promoted by an independent committee of private growers.

The Fruit-conferences at Chiswick, undertaken at the darkest period of the Society's history, were so signally successful, and the reports founded on them of such permanent value, that it is fitting the old Society should once more take up the work it has done so well. Whether our Scottish friends intend again organising something of the same kind we do not know; their success in the past may induce them also to renew their efforts. One satisfactory feature about these exhibitions is, that they are not exhibitions only, but that endeavours are made to utilise and turn to account materials which at most shows are only displayed without comment.

At Chiswick the leading work to be accomplished seems to be the determination of varieties, the rectification of nomenclature, and specially the suitability of particular varieties to particular stocks, and to particular soils. At the Crystal Palace, on September 6 and 7, other matters are to be discussed—matters bearing rather on the commercial aspects of the question. The arrangements are in neither case complete; but we believe that at the Crystal Palace a beginning has been made by electing that able pomologist, Mr. T. F. RIVERS, as Chairman of the committee. One of the first proposals, as laid down by him, and cordially endorsed by the committee, was, that the Conference should have a permanent character, that its march was not to begin and end with a few trumpet blasts on Sydenham Hill, but that the committee should, as far as possible, promote continual inquiry and discussion as to the national development of fruit-culture, but especially in relation to those more useful and valuable of hardy fruits, Apples, Pears, and Plums. The committee agree that it is no part of its aim to discuss, or in any way to affect the mere garden-culture of fruits as at present so widely existing. Neither, we are glad to learn, does it propose in any way to trench upon what ground the Royal Horticultural Society may regard as its special preserve, or to conflict with that body in its operations.

What the committee has in view in promoting the various conferences which it is hoped will result is to popularise hardy fruit culture amongst agriculturists, with the ultimate expectation that we may grow at home fruit as plentifully and as good as is that which now finds its way here in such great profusion from other countries. Practically, the hope is that in time hardy fruit culture may become a national industry. Mr. RIVERS pithily said that were any one considerable county planted with fruit trees in proportion to the area allotted to other

crops, that all the nurseries in the kingdom could not at one time furnish more than the needful supply of trees for that one county.

It is not our purpose here to discuss the importance or otherwise of making hardy fruit culture a part of ordinary farm operations. That is practically the work for the Conference, and, no doubt, in due course it will be done well. Our readers may draw their own conclusions from the nature of the proposals made at the recent meeting of the committee with respect to the subjects to be discussed at the first Conference, as to how far that body seems disposed to take a practical turn; for it was agreed that on the first day papers on "Land Tenure in its Relation to the Culture of Hardy Fruits," "Most Suitable Kinds of Apples, Pears, and Plums for Farm Culture," and the "Marketing, Packing, Transit, &c., of Fruit" should be invited; and also that such able men as Mr. ALBERT BATH, Mr. A. COLEMAN, and Mr. J. WEBBER, be invited to deal with them. On the second day the economical use of fruits is to be discussed, Mr. RIVERS himself undertaking to deal with the interesting subject of the "Drying and Bottling of Fruits, especially Plums." Mr. BEECH, the eminent jam-maker, is to be asked to deal with "Fruit as an Element for Jams, Preserves, &c.," and Mr. W. S. MANNING will be invited to take up, on behalf of the Vegetarian Society, the "Adaptability of Fruit as Human Food." These topics show that, without being ambitious, the objects of the Executive Committee are severely practical. Further, that body has appreciably strengthened itself by adding to its numbers several well-known pomologists, and it will endeavour to secure the co-operation of the Royal Agricultural Society, as that body, it is well known, is desirous of promoting hardy fruit culture amongst farmers, if the best ways and methods be clearly indicated. It is hoped that a second Conference may take place when the usual October hardy fruit show at the Palace is held, as then a different body of fruit growers may be expected to be present; and we may go so far as to suggest, that the customary gathering of farmers at the Smithfield Cattle Show may also be utilised for some practical purposes in connection with this interesting subject.

It may occur to many that it is unfortunate that there should be such a dissipation of energy as is implied in two Fruit Conferences held simultaneously, or nearly so, in different quarters of London; and that it is but a poor return for the splendid work accomplished by the Royal Horticultural Society in its Fruit Conferences to organise similar meetings elsewhere; but sentimental considerations of this kind must needs give way in face of practical convenience and public utility, and the functions of the two bodies may be so sharply defined that each shall do its own share of the work without touching on the preserves of its neighbour. General principles and scientific pomology would, according to this arrangement, be assigned to the Royal Horticultural Society, while their application to public and commercial, as distinguished from private garden purposes, might be the work of the committee at the Crystal Palace. In any case, without indulging in any over-sanguine expectations—expectations which our climate, to say nothing of legal and fiscal restrictions, would soon dissipate—we may nevertheless express a decided opinion that much more fruit might profitably be grown here, and that fruit-culture may in some degree come to the aid of the distressed agriculturist, who hitherto has afforded so marked an example of the folly of placing all his eggs in one basket.

All success, then, to those who in any degree,



FIG. 10.—GROUP OF CARNATIONS AND PICOTÉES: REDUCED ONE-EIGHTH OF NATURAL SIZE. (SEE P. 103.)

and in any manner, contribute to the well-being of their fellows and the prosperity of the country.

THE ROYAL HORTICULTURAL SOCIETY.—The meeting on Tuesday last, of which we give a full report elsewhere, was, as has become customary of late, a remarkable one. Apart from the specialty of the day—the exhibition of the Carnation Society—particular mention should be made of the magnificent collection of Ferns shown by Messrs. W. & J. BIRKINHEAD, who had the enterprise to send from Sale, near Manchester, a collection which for variety and extent, we venture to think, has never been surpassed or even equalled in any London show. The herbaceous plants of Messrs. PAUL & SON, WARE, and VEITCH, were of excellent quality, while Mr. TALLERMAN'S exhibit of a method of preserving Strawberries in a fresh state and of packing them for transport, attracted universal attention.

COUNCIL MEETING.—At a meeting held on July 24, a report was read, from the Chiswick Committee, concerning the National Apple and Pear Conference to be held at Chiswick Gardens, from October 11 to 18, and a schedule (which may be obtained of Mr. BARRON, Royal Horticultural Society's Gardens, Chiswick), was drawn up and agreed to. It was resolved that the Secretary have a proof of the new bye-laws printed and circulated amongst the Members of Council and of the Fellows' Committee, and that a meeting of the committee be called by its Hon. Sec. (Mr. DEAL), for Tuesday, August 14, to consider the corrections and alterations.

COLONIAL FELLOWS OF THE ROYAL HORTICULTURAL SOCIETY.—We have so frequently advocated the appointment of local secretaries and the formation of branches of the Royal Horticultural Society, not only in each county of Great Britain, but in each colony of Greater Britain, on the plan of the British Medical Association, that we insert the following letter with great satisfaction. The tie would be of the lightest, so far as any restriction is concerned, but the benefits would be mutual. Baron Sir FERDINAND VON MÜLLER, who is an Honorary Member of the Royal Horticultural Society, has been most assiduous and successful in obtaining Colonial Fellows for the Society. In a recent letter received from him he offers such practical and sensible suggestions that they are well worth while being placed on record for the consideration of Colonial Botanists and Horticulturists who may be desirous of joining the Society and thus give an impetus to the best interests of Horticultural Science. Sir FERDINAND writes:

"I beg to express my great pleasure that my suggestion to obtain Colonial members for the Royal Horticultural Society has met with the approbation of the Council. If only a few of the leading horticulturists in each of HER MAJESTY'S Colonies had the honour of joining the great home Society it would add several hundred members to your roll, and would, irrespective of the financial support, give the Society greater strength from abroad. It seems to me if, in each of the Colonies, some prominent horticulturist were asked by you to propose such of his amateur or professional friends as he deemed worthy of the honour, a good representation of the colonial horticulturists at your Society would be speedily gained, and that with all the desirable decorum and dignity. In Victoria I will gladly take charge of this duty."

Steps are being taken to organise a representation of the Royal Horticultural Society in each of our Colonies. In the meantime, colonial botanists and horticulturists desirous of joining the Society may obtain forms of nomination and a list of privileges of Fellows on application to the Secretary, Royal Horticultural Society, 111, Victoria Street, S.W.

THE "KEW BULLETIN."—The July number contains an account of Bhabur grass (*Ischaemum angustifolium*), largely used for making ropes, and

which might be used for paper-making if it were cultivated. Mr. FAWCETT'S short but interesting account of the Cayman Islands, makes us hope we shall eventually get a fuller report from his pen. The disease in the Cocoa-nuts which he was specially commissioned to inquire into, Mr. FAWCETT attributes to a bacterium. With reference to Valonia (*Quercus agrifolia*), Mr. THISELTON DYER recommends its culture in Cyprus. Professor MACOWAN'S remarks on the means of extirpating the Opuntias, Prickly Pear (which renders the land where it grows practically useless), or of turning them to advantage, are given at length. Other valuable information is given regarding the Opuntias, of much value to colonists.

GARDENERS' ORPHAN FUND.—We are requested to give insertion to the following letter:—"At the conclusion of the first year of our work it is a source of gratification to me to review the success which has attended our efforts, and which is due to the hearty co-operation of all concerned. I take this opportunity of returning my personal thanks to all associated with me in this matter, and also to the many gentlemen who have undertaken the office of local secretary, and worked so zealously in the cause. The dinner, as is now well known, was also a great success. Thanks to the numerous kind contributions of fruit, plants, and flowers, the room and tables presented an appearance which called forth unqualified expressions of admiration from the most competent and impartial critics. It now affords me no small degree of pleasure to be able to state that we are commencing the second year equally well. I am empowered to announce that Mr. SHERWOOD (Messrs. HURST & SON), in token of the interest he takes in this movement, has generously offered to place an orphan upon the fund at his own cost, in accordance with Rule 12, thus increasing the number of recipients from ten to eleven. The name and particulars of this annuitant will be announced in due course. It would afford me, and I may add, the committee, much pleasure if many more gentlemen were to emulate this noble example. I can only say that there are plenty of deserving applicants to whom such generosity would be of the utmost benefit. GEORGE DEAL (Chairman)."

STATUE TO PLANCHON.—We learn from the pages of the *Revue Horticole* that it is proposed to erect a statue in bronze at Ganges (Herault), as a tribute to the great services of this eminent botanist. The first to recognise the nature of the Phylloxera, and one of the first, if not the first, to counsel the use of the American resisting stocks whereon to graft the finer French varieties, PLANCHON indeed deserved well of his country.

"REICHENBACHIA."—The second volume of Mr. SANDER'S sumptuous publication contains coloured figures of various Orchids, artistically yet faithfully drawn, without straining after effect, while the analyses in wood engraving supply the necessary data for the botanist. These woodcuts, however, are rather roughly executed, and not on a par with the general "get-up" of the work. The text contains botanical descriptions by Professor REICHENBACH, and cultural details by Mr. SANDER, and is written in English, German, and French, while the strictly technical details are in Latin, so that the requirements of all parties are provided for. The following are the plants illustrated in the present number:—

Odontoglossum Harryanum, t. 49.—A magnificent species, discovered in New Granada by RODRIGUEZ PANTOCHA. The broad sepals are rich brown, pencilled with yellow lines. The petals are also brown with a narrow yellow margin, the lip, large, heart-shaped, oblong, with a central yellow keel from which radiate purplish stripes. Mr. SANDER recommends a cool, moist treatment in summer, keeping the plants somewhat drier after flowering, and repotting them when the new growths appear. In October the plants should be removed to a slightly warmer house, and there remain till April,

giving the same winter temperature as for *O. vexillarium*, viz., from 57° to 60° Fahrenheit.

Dendrobium Leechianum ×, t. 50.—A hybrid raised by Mr. W. SWAN out of *D. nobile* by *D. aureum*. Five years elapsed before the seedling produced flowers. The flowers of this fine variety are remarkable for their undulated sepals and petals and for their large size (5½ inches across), "while the rich claret-purple of the labellum is intensified by the purity of the white margin." It is best grown in baskets, at a temperature in summer of 70°–80°, removing the plants into a cooler house when their growth is completed.

Phalenopsis speciosa imperatrix, t. 51.—A native of the Andaman Islands, where it was discovered by General BERKELEY. The flowers are of a deep rose-purple, with no white markings whatever, and the lip is adorned with bright yellow blotches on the side lobes. It is best grown in baskets suspended from the roof, and, while in growth, requires considerable heat and moisture, and free exposure to light, taking care, however, to shade the foliage from the direct rays of the sun. During the winter season the temperature should not exceed 70°–75°. The plant flowers in August.

Laelia Schilleriana, t. 52.—The sepals and petals are of a white or light rose colour, while the labellum is exquisitely pencilled with purple lines and adorned with a heavy blotch of the richest purple-crimson. Mr. SANDER recommends it be grown in a shaded position in the Cattleya-house, with abundance of water at the roots during growth, but with much less during the dormant period. It should be repotted after flowering in early summer.

RINGING THE VINE.—M. GUSTAVE RIVIÈRE in the *Revue Horticole* recommends the practice of removing a thin band of the rind from a shoot some days before or during or immediately after flowering. The consequences are said to be the increase of the size of the berries, the hastening of the ripening process by twelve days, and the promotion of fertilisation. The ring should be taken off about 1 inch below the bunch—never above it. The decortication ensures a marked increase in the amount of sugar in the juice, as shown by the analytical tables given.

AMERICAN BLIGHT ON APPLES.—The last number of the *Revue Horticole* contains an excellent article, accompanied by a coloured plate illustrative of the woolly aphid (*Schizoneura lanuginosa*). A successful insecticide is the following:—Pyroligneous acid, 1000 parts; salicylic acid, 2 do.; red oxide of mercury, 1 do.; fuchsine, 0.25. One portion of this solution to thirty of water is requisite when the tree is in leaf; in winter it may be applied undiluted to the bark by means of a syringe.

SUTHERLANDIA FRUTESCENS.—With reference to the supposed use of *Sutherlandia frutescens* Professor MACOWAN sends us an extract from the *Cape Times*:—"I have had brought to me recognisable specimens of the plant now preconised as a remedy for cancer. It is *Sutherlandia frutescens*, a leguminous shrub, with showy scarlet flowers and large swollen membranous pods. Many will know the plant from remembering how children make playthings of these pods, plucking them with a piece of the footstalk adhering, and setting them upside down to float on water for toy 'ducks.' The outline of the pod thus treated is not unlike that of a water bird afloat. The plant is figured tolerably well in the *Botanical Magazine*, pl. 181, under the older name of *Colutea frutescens*. It is certainly a surprise to find any medical virtue ascribed to the *Sutherlandia*, and as many remedies for cancer have been pushed into notice, tried, and found wanting, that it would be well if our Medical Board would, by experiment settle once for all the reputed value of the application. From microscopic investigation of degenerated cancer tissue I entertain little hope of a successful result, but it is something to ascertain the unknown even when the equation works out $x = 0$. The plant used by the natives and by them pointed out to the old Dutch colonists as a remedy or pal-

lative, is quite different, and certainly has some powerful properties. It is *Melanthus major*, L., known as "Kruitje-voer-mij-niet," that is, herb-tough-me-not, from its heavy foetid smell. I believe it is only used externally. P. MACOWAN, F.L.S."

CULTURE OF MORELS. We learn from *La Lanterne*, a Falaisian journal, that M. Ozou, of Falaise, has succeeded in ascertaining by experiment the precise conditions of temperature and moisture which are required for the germination of the spores of these delicious fungi (*Morchella*). The species particularly experimented on is *M. conica*, and which M. Ozou succeeded in growing in April of the present year in his house at a period when it would be impossible to find the fungus out-of-doors. It has generally been supposed that Morels were parasitic on the roots of trees, &c., but this is not borne out by M. Ozou's experiments. The precise conditions under which this gentleman has succeeded in causing the spores to germinate, as it were, at will, are not indicated in the article in question.

POPPIES.—Mr. CADDWELL, the Ivies, Wantage, Berkshire, sends us some forms of *Papaver pavoninum* of charming colours, and both double and single flowers. The thread-like petals, suggestive of Japanese *Chrysanthemums*, and the brilliant colour of the selfs and particoloured flowers, make these annual plants pretty additions to the summer borders. It is a pity they are so evanescent.

HAMMERSMITH AND DISTRICT HORTICULTURAL SOCIETY.—This annual exhibition took place on the 19th inst., and a very pretty display indeed was made. Groups arranged for effect were a pleasing feature. The amateurs' exhibits were highly creditable, especially when it is remembered they are grown in some of the crowded streets of Hammersmith.

A MONSTER MUSHROOM.—It is stated in the *Surrey Comet* that a Mushroom was found on Mr. BIRD's farm at Chessington, Surrey, which measured 16 inches across, was 4 feet round, and weighed 2 lb. 14 oz..

OPENING OF THE GREAT NORTHERN HOSPITAL.—We understand that on the occasion of the visit of the Prince and Princess of WALES to Holloway to open the Great Northern Hospital, the whole of the floral decorations and three bouquets were furnished by the liberality of Mr. B. S. WILLIAMS, Victoria and Paradise Nurseries, Upper Holloway, N.

ACACIAS.—Baron VON MUELLER's valuable *Decades* proceeds steadily. It comprises a series of useful illustrations of a genus as remarkable botanically as economically, and of which many species are inmates of our conservatories, where their beauty in spring is always attractive. In *Acacia Sutherlandi*, *A. umbrosa*, and *A. Bidwilli*, the connective of the anthers often or occasionally ends in a gland, as in *Prosopis*. Very notable among these plants are also those of the section *Archidendron*, of *Albizzia*, one species having as many as fifteen fruitlets in each flower. This apocarpism—a rare occurrence among *Leguminosæ*—occurs also in a Papuan genus allied to *Alfonsea*, and lately described by Dr. SCHUMANN.

RHODODENDRON FALCONERI.—When lately at Wolverston, we were surprised at seeing, in the woodland walk there—a walk full of interesting things—a plant of this species, which Mr. SHEPPARD told us had stood out many years, and has suffered little or no injury during the winter or spring, but which has not yet flowered, although it had a blossom-bud on it this season. This bud, owing to its soft, succulent nature, was no doubt killed by the frost, although the wood-buds, which are nearly as large, but more pointed, always escape. Even without the flowers this *Rhododendron* is well worth growing, as its foliage is very massive, and highly ornamental, the leaves being nearly a foot long, and 1 to 5

inches wide, with the under-sides of a dark ferruginous hue, and the upper of a pleasing green colour. It would seem that *Rhododendron Falconeri* comes from a higher altitude than the other Sikkim kinds, as R. Edgeworthii and Nuttall were killed the first winter after being planted out, and yet the first-named has small, very hard wood. It has been exceedingly useful to the hybridist in raising new varieties, as many have emanated from it, both by making it the seed-parent, and by using its pollen, and it is a valuable plant for the greenhouse.

CHISWICK LITERARY AND SCIENTIFIC SOCIETY.—On Thursday, the 19th inst., this prosperous local Society again held its annual garden party in the Royal Horticultural Society's Gardens, Chiswick, when there was a good attendance of visitors (about 700), who evidently enjoyed the promenade in the grounds. Microscopes, &c., and dried specimens of the British flora were exhibited by members.

WEEVIL-EATEN BROAD BEANS.—It is well-known that the Bean-weevil attacks Broad Beans during the time the seeds are ripening, and pierces them through and through. It is a common opinion that weevil-pierced Beans do not germinate, and owing to the drought of 1887 the weevil appeared to be more active than ever. Some of the London wholesale seedsmen had samples of Beans returned to them by their customers on the ground that they would not grow. In order to put this to the test, Messrs. HURST & SONS, of Houndsditch, E.C., planted one hundred of the very worst weevil-pierced Broad Beans, and a similar number of Beans without any such blemish—these were sown side by side at the new seed trial grounds at Springfield, Chelmsford, with the result that the plants are now in bloom and setting their pods, and there is not a particle of difference in the appearance of the plants. Not one appears to have failed; the growth of one is quite as good as the other in every respect. The experiment should set at rest, for this generation at least, the notion that weevil-pierced Beans do not germinate, always provided that the cotyledons only are pierced, and that the embryo plant be not injured.

RAMIE FIBRE.—M. NAUDIN has succeeded in cultivating this plant (*Boehmeria nivea*) at Antibes, where it is quite hardy. *B. utilis* is also hardy along the Mediterranean coast, and might furnish two or three cuttings every year; hence the introduction of these fibre-producing plants into Algeria or Corsica might be of great value. The leaves, moreover, make excellent fodder for cattle.

KEW.—The refreshment pavilion in Kew Gardens is being built by the refreshment contractors to the Royal Albert Hall, and will be opened to the public on August 2. The site chosen is on the east side of the Pagoda Vista, and not far from the Temperate-house and Miss North's Gallery. It is also stated in a Richmond paper that "a new gate at the bottom of Lichfield Road, which faces the Kew Gardens Station, will shortly be opened, and put the gardens within five minutes' walk of the station." We believe the pavilion is being erected at the cost of the refreshment contractors, who are to pay a gradually increasing rent for the sole right to sell refreshments in the gardens during a term of years.

CARNATIONS AND PICOTEEES.

Our illustration on p. 101, fig. 10, shows on a somewhat reduced scale three varieties of Picotees and five of Carnations. The Picotees at the bottom of the woodcut are—the one on the right, *Princess Alice*, a red-edged variety; and that in the centre, Rev. H. Mathews, a pink-edged flower—both of Kinkland's raising. The Carnations shown are show flowers, and include the three-coloured flaked *Rose of Castile*, still to be found amongst show flowers. It will be observed that the flowers do not present the primness of the exhibition card, but are in the condition in which they were cut from the plants, a condition more agreeable to many of the profane than the artificial regularity of "dressed" flowers.

NOTICES OF BOOKS.

CHOICE BRITISH FERNS, THEIR VARIETIES AND CULTURE. By Charles T. Druery, F.L.S. (Upcott Gill, 170, Strand.)

Mr. Druery deserves all credit for his endeavours to revive and quicken the interest in British Ferns. It is one part of a horticulturist's duty to popularise his subject, using the word in its best sense, and to demonstrate, amongst other things, that horticulture is not the sole appanage of the rich, and that it may be practised with but few of the means and appliances which a professed gardener, with more or less reason, deems necessary.

The cultivation of hardy Ferns may be recommended, in the first place, for their extreme beauty—this appeals to every one; next, for their deep interest—this appeals to the more intelligent; and, lastly, for the ease with which, with few exceptions, they may be grown—this commends them to the amateur with but little time and, perhaps, less means to devote to the pursuit of plant growing. The circumstance that a very complete collection is now grown at Kew which establishment has also come into possession of the rich herbarium of our late colleague, Thomas Moore—will doubtless serve to recall attention to this exquisite class of plants. People will want to know how to collect and how to grow them; they will develop an eclectic taste, picking out the best (for where all are good some are better than others), and for this purpose they will find no better guide than this book of Mr. Druery's. What are called viviparous Ferns are common enough, e.g., in *Cystopteris bulbifera*, but no special significance had been attached to this adventitious production of buds, till a similar phenomenon taking place either from the prothallus developed in the ordinary way from a spore, or from a corresponding production developed direct from the frond without the intervention of a spore, awakened the attention of botanists interested in tracing the descent of Ferns from pre-existing forms, and in illustrating their relationships with other groups. By bringing these facts to light, fernists, such as Mr. Wollaston, Colonel Jones, and Mr. Druery himself, have contributed very materially to the solution of a problem of very great interest and importance, and have shown of what value may be the well-directed observation of amateurs. Some portion of Mr. Druery's work appeared originally in these columns—a fact which, while it precludes the necessity of our making extracts from the book, may serve as a good reason why we venture to commend the completed book to the notice of our readers!

THE PANSY.

Mr. Alexander Lister, nurseryman, of Rothesay, has published through Mr. A. Gardner, of Paisley, a treatise on the cultivation of the Pansy, in which he deals clearly and simply with their propagation by seed, and by cuttings, the means to be adopted by exhibitors, and the course to be followed when greenfly, or spider, or mildew, attack the treasured herb. Pansies are so exquisite in their colours, and so easy to grow, that we gladly hail any means of extending their cultivation, and look forward, not without hope, to a time when good taste shall sweep away the present arbitrary convention as to form, and the fashion set in towards accentuating and developing that which Nature has prescribed for an excellent purpose in this particular flower, rather than force her to give to a Pansy a form she never intended it to have, and which in this case is meaningless.

FLOWER-GARDENING FOR AMATEURS. By Lewis Castle. Swan, Sonnenschein & Co.

This is a very serviceable little book, written in the fulness of knowledge by one who can pot a Heath or write a report with equal facility. The author tells his readers how to form town and suburban gardens, window gardens, wild gardens, and house-

top gardens; he discourses of soils, walks, lawns, beds, and borders. He tells us what to grow and how to do it, and all in a style very different from that of the mere inexperienced scribe who writes with a view to his own pocket rather than the benefit of his readers. With a view of testing the work we turned with interest to the chapters on town gardening and on the management of a small greenhouse, and found those subjects sufficiently and practically treated. The remarks on watering are excellent. The number of serviceable evergreens for town gardens might have been largely increased. *Skimmia*, *Osmanthus*, and the comparatively new *Phillyrea Vilmoriana* do admirably in the open air in the smokiest situations.

THE ROTHAMSTED EXPERIMENTS, &c. By William Fream, B.Sc., and Horace Cox.

Mr. Fream has done excellent service by summarising and condensing some of the principal results obtained from the unparalleled series of observations, experiments, and analyses, carried on at Rothamsted by Sir John Lawes and his *aide-de-camp* Professor Gilbert. The original records are hardly adapted for use by cultivators; moreover, they are voluminous, bulky, and scattered through various publications during a period of forty years. Mr. Fream has selected for summary those reports relating to the culture of Wheat, Barley, and meadow herbage, and he has done his task so well, that we hope he may be induced to continue his labours and give us similar summaries with respect to Potato and root crops, to the feeding of animals, to the relations between vegetation and climate, and other of the many subjects to which attention has been paid at Rothamsted.

FREESIAS FROM SEEDS.

PERHAPS it is not generally known amongst admirers of these charming bulbous plants that they can easily be grown from seeds, and be had in bloom about four months from the time of sowing. At the present time we have, standing in a cold frame, thirteen 6-inch pots, each containing eight to ten plants, raised from a packet of seeds sown about the middle of February last. All the plants have flower-stems, and a good many of the stems have one or two flowering branches springing from their sides. The first flowers began to open early last month (June), and from that time to the present there has been quite a profusion of bloom, filling the air with fragrance, particularly at night, to a considerable distance round the spot where the plants stand, and there is apparently much gaiety and sweetness still forthcoming.

Our packet, from the seedsman, was labelled *Freesia refracta alba*; but, besides white flowers, we have some with one to three petals marked with bright orange; other flowers are of a pale citron hue; these are larger than the rest.

The culture of *Freesias* from seeds is most simple, and appears to be devoid of the disappointment which sometimes attends their growth from bulbs. By sowing seed at intervals—say in February, April, and again in June—it would be easy to have a good supply of these flowers throughout the summer and autumn months. Besides, if properly treated after flowering, the bulbs of seedling plants would come in useful for forcing and growing the following season.

In sowing the seeds, the cultural directions printed on the packet were not followed. In our case an 8-inch pot was crocked, and filled with a mixture of loam, peat, and sand; after watering the surface, the seeds were sown and covered lightly over. The pot was then placed in a pit prepared for growing Cucumbers. In about ten days the seeds germinated, and as soon as the seedlings were fit to handle they were carefully taken from the seed-pot and pricked over the surfaces of some prepared 3-inch pots, eight to ten of the seedlings being dibbled into a pot. When filled, the pots were put back into the Cucumber pit, standing them on a

shelf at the back, near the glass. Here they soon became established, and grew very sturdy, eventually looking much stronger and healthier than plants we had grown from old bulbs. About the beginning of May, the small pots being full of healthy roots, a shift into a 6-inch pot was given them, using a compost of loam, peat, some fresh horse-droppings passed through a half-inch sieve, and some sand. In potting the plants the roots were disturbed as little as possible. They were now put into a cold frame, a mat being thrown over the glass at night. Water was given carefully at first, and the frame was kept rather close for a time. Soon after this shift some of the plants began to throw up flower-stems; when these had advanced in growth a little weak manure-water, prepared from stable-dung, was given, and the forwardest of the stems in a little time began to expand flowers, others followed in their wake, until we have had quite a mass of bloom for some weeks past. *J. W.* [The flowers sent with this note had stalks of 1 foot in height, were fully developed, and perfumed like Violets. Ed.]

DISEASE OF ORNITHOGALUM.

Puccinia Liliacearum, *Duby*.

A FEW weeks ago Mr. William Cross, of Lytham, Lancashire, was good enough to send to the office of the *Gardeners' Chronicle* numerous specimens of leaves of *Ornithogalum umbellatum*, L., infested with a fungus new to Britain, named *Puccinia Liliacearum*. He wrote:—"The disease is of a most virulent nature, and has completely killed thousands of plants in a few days." Mr. Cross was led to send this communication by seeing the account of *Ornithogalum nutans*, L., destroyed by *Heterosporium Ornithogali*, as published in the number of the *Gardeners' Chronicle* for May 26, 1888, p. 658. The accompanying illustration (fig. 11) will explain the appearances presented by the new fungus. On the right are the tips of two leaves of *Ornithogalum umbellatum*, L., thickly infested with the *Puccinia*, which grows on both sides of the leaves. It will be observed that the leaf-tips have been narrowed or contracted and dried up by the growth of the fungus within the leaves. Each leaf is covered with innumerable at first orange and then black pustules, which, on being magnified twenty diameters, are seen as in the centre of the illustration. The entire substance of each infected leaf-tip is filled with the mycelium of the fungus. The growth of the spores within the pustules at length bursts the epidermis of the leaf, as illustrated, and when ripe the spores are scattered out. The spores, which are larger in size than is usual with *Puccinia*, are shown enlarged 400 diameters at the bottom of the illustration; they are variable in both size and form, smooth, and bright yellowish or orange-brown in colour. An interesting account is given of this fungus, drawn up from examples forwarded by Mr. Cross, in the *Wesley Naturalist* for June, and written by the Rev. Hilderic Friend, of Carlisle. Mr. Cross' examples have been sent to the Natural History Museum, South Kensington. *Worthington G. Smith, Dunstable.*

CULTURAL MEMORANDUM.

SILENE PENDULA RUBERRIMA.

WHERE this annual is wanted for masses in the flower garden next spring, no time should be lost in sowing seed. Having placed a crock over each of the holes in the bottom of shallow boxes, strew a few handfuls of half-rotten leaves over them, filling to within an inch of the top with ordinary garden soil, or, better still, sifted waste soil from under the potting-bench. Make this firm and level with a piece of board, then sow the seeds thinly, and cover lightly; water through a fine rose, put into a frame and keep close until the young plants appear, when sufficient air should be admitted to prevent the

plants from making a weakly growth, and as soon as large enough, prick out in boxes or on a warm border, at from 4 to 6 inches apart, giving water through a rose, as before, to settle the soil about the roots. Thus treated, nice sturdy little plants will be secured for transplanting in the beds as soon as autumn frosts render the removal of their summer occupants necessary. Plants of the rose and white varieties of this showy and very useful spring-flowering subject may be raised in the same way as indicated above.

ROSA RUGOSA.

This Japanese Rose has a fine, distinct ornamental foliage, and the pure white flowers are very useful for cutting before they become fully open. Seeds may be sown in a box filled with sandy soil and covered lightly. When large enough, prick them out in a nursery bed, 6 inches apart, preparatory to being finally transplanted where they are intended to flower.

MIGNONETTE FOR WINTER AND SPRING FLOWERING.

This is a good time to sow Mignonette seed—Golden Queen and Garaway's White are two excellent varieties—to raise plants for cutting from during the winter and spring months. If for pot work, sow thinly in $\frac{1}{2}$ -inch pots filled with sandy loam, covering lightly with some of the same, water through a fine rose, and stand the pots in a cool frame, shading from sunshine until the plants appear, when they should have plenty of light and air, and be thinned out to three in each pot; the object being to secure sturdy plants. If large supplies are required, a hot-water pit, having a south aspect, should be devoted to them, sowing the seed thinly over the bed, and afterwards admitting sufficient air to prevent the plants from making a spindly growth.

CELOSIA PYRAMIDALIS PLUMOSA.

In order to raise a stock of plants of this showy decorative annual for the spring embellishment of stove and warm greenhouse, a pinch of seed should be sown forthwith in a shallow pan, covering it lightly with fine soil; water, and place in heat near the glass. When the young plants are large enough, prick them out 2 inches apart in a box filled with light rich soil; water, put back in heat, and shade for a few days from sun until the roots have taken to the soil; afterwards pot singly into 3-inch pots, and again into 48's before the roots become matted. *H. W. W.*

ANCHUSA ITALICA AND SEMPERVIRENS.

These beautiful Alkanets belong to the order of Borageworts, and the first named is a most desirable plant to have in the herbaceous border, where it grows from 3 to 4 feet high, and is strikingly effective on account of its exceedingly free floriferous habit, and the very rich deep blue of its blooms. These are about the size of a shilling, and for depth of colour rival those of the well-known *Gentiana acaulis*; and as there are so few plants that have flowers of that hue that attain much size, the *Anchusa italica* ought to be better known than it is. To have it do well the soil where it is to be planted should be broken up deeply, and have some rotten manure worked in below, to which the roots will go down and be independent of water when dry weather sets in. The way to propagate *Anchusa italica* is by seeds or off-sets; the last named may be removed early in spring as soon as the leaves show, and the latter sown, when ripe, either in the open or under a hand-light, to be planted therefrom when strong enough, where they are to remain. *A. sempervirens* is a British species, and well adapted for growing in the wild garden or by the sides of woodland walks or drives, where it is very attractive and strong enough to take care of itself. *J. S.*

FOXGLOVES.

For the wild garden, or for forming clumps in the back of shrubby borders, these plants are unrivalled. Although there are several foreign kinds, there are none to equal our native species, or at least the improved forms of these, known as *Digitalis gloxinia*.

flora, which have long towering spikes thickly studded with large drooping bell-shaped flowers, beautifully mottled or spotted in the throat. If seed be obtained from a good type of the one last referred to, much variety will be afforded, as many will come of different shades of purple, and others white, with rich markings, and the mixture of all these together is very pleasing, the plants showing well if planted on knolls. The time to sow the seed is as soon as it is ripe, when it should be gathered and dried, and at once scattered on ground that has been made smooth on the surface; this should then be covered with fine soil, and a handlight placed over; and the young plants when they appear should be fully exposed to the air. As soon as large enough to handle it will be necessary to prick them out in rows or beds, where they may remain to grow on till they are strong enough to plant out. Although Foxgloves do fairly well under shade, they are much finer in the open. In cases where it is desired to increase any that are considered extra good, cut away the spikes immediately the best bloom is over, when the plants will throw out side shoots, which when taken off carefully with roots, and, planted and watered, will quickly become re-established, J. S.

PLANTS AND THEIR CULTURE.

SUCCULENT PLANTS are those which have stems or leaves, usually thick and fleshy, and which are eminently suited to withstand long periods of drought. This property renders them useful for standing in places where more tender things would rapidly succumb. These plants are so dissimilar to most others in habit, that a fair proportion of well selected sorts gives an additional character to the collection, besides breaking the monotony, common to many other plants. Moreover, they are of themselves meriting of cultivation in every place where the necessary accommodation can be afforded them. They are mostly of easy cultivation, succeeding, where it would in cases be difficult to establish other plants—such as in covered corridors, balconies, where water cannot be freely used. A good soaking about once or twice a week being usually quite sufficient for their requirements; but in any case, however often they may be watered, it is important that it should only be applied when the plants are tolerably dry, and then giving a thorough soaking. At all times they should have as much direct sunshine as possible, with a good circulation of air, giving it more or less according to the temperature in which the different species are growing, but it is well nigh impossible to injure these plants with sun and air, provided the temperature for the warmer kinds is kept up. They may be potted at any convenient season, but in the case of such genera as Haworthias, Gasterias, and others, which are nearly annual-rooted, the sooner in the season that it is done the better. The soil best suited for them is a friable loam, with a good sprinkling of sharp sand and nearly one-fourth of the whole should be of pounded brick and old mortar. Well mix the compost, and in potting, firstly, remove any damaged or decayed leaves (if any) round the base of the plant, so that when the plant is stood in the pot the bottom leaves all but lie on the rim; the lowering of the plants induces the production of fresh roots. Ram the soil quite firmly, and especially round the sides and the collar of the plants. After potting be careful not to over-water. It may seem unnecessary to add that the drainage should be extra good. Of the score or so of genera—which go to make up the bulk of succulent plants—perhaps no genus is better known than the Agaves. *A. americana*—the so-called American Aloe—with its variegated variety, are two well-known plants, and nearly hardy. *A. americana picta* is a smaller form, with the variegation along the middle of the leaf, instead of at the edges, as in variegata; it is a distinct and handsome variety. Of more massive species, *solatorum*, *Sal-miana*, and *Hookeri* may be mentioned; they are all

green, but vary considerably in the depth of colour. These are noble plants for large conservatories, winter gardens, and the like. Of a more accommodating habit is *A. striata*, and its varieties *A. striata* and *A. recurva*; they are handsome narrow-leaved sorts, somewhat similar to *Bonaparteajunceae*.

A. filifera, with its white filamentous edged leaves and dense dwarf habit, is one of the best. There are several varieties of *A. filifera* differing in the quantity and length of their filaments. *A. Victoria Regina* is a small gem, taking many years to grow to about a foot high. The general aspect of the plant is similar to *A. filifera*, but it has no threads or filaments, and the leaves are more rigid, and nicely striped with greyish-white lines. *A. dasyliroides*, *A. Kerchovi*, *A. xylacantha*, and *A. lophantha*, are medium growers, and distinct sorts.

Gasterias.—Of this genus only a few are usually found in gardens, of which, *verrucosa*, *maculata*, *acinaceifolia*, and *nigricans*, are the best. A sunny shelf in the greenhouse suits them best. The same position also suits the *Haworthias*, of which there are many beautiful species. They are all dwarf plants, rarely more than a few inches high, forming small dense rosettes of leaves, frequently beautifully marked with pearly incrustations. Amongst the

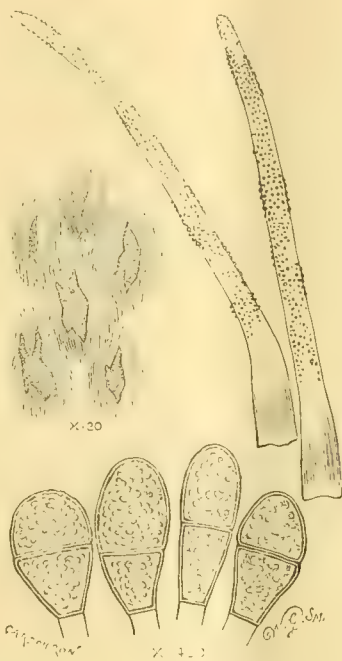


FIG. 11.—PUCCINIA LILIACEARUM. (SEE P. 104).

best sorts may be mentioned, *margaritifera*, *radula*, *clariperla*, *attenuata*, *cuspidata*, *cymbiformis*, *Reinwardtii*, *retusa*, *tortuosa*, *tessellata*, *arachnoides*, and *coarctata*; these are best grown in small pots.

Aloes are nearly allied to Haworthias, but, with one or two exceptions, they are not so ornamental; and requiring as they do a few degrees more heat, are not so accommodating. Moreover, they have a larger habit, and do not nearly do so well. Nevertheless, where succulents are appreciated a few should be included—especially the dwarf, prettily-marked-leaved kinds, such as *Saponaria albocincta*, *Greenii*, *serra* and *tricolor*. *Ciliata* is a good flowering species, and makes a good pillar plant; *frutescens* also flowers well, and may be trained into large bush form for placing in the conservatory in winter. There are many other greenhouse succulent plants worthy of being included, such as *Cotyledon arborea*, *Senecio pyramidalis*, *Sempervivum*, and *Mesembryanthemum*, some of which are singular looking plants, with merely a pair of connate leaves so closely applied that there is only a slight elliptical opening left between them, as seen in *nuciforme* and *truncatellum*. Another section of them, of which *M. tigrinum* and *felinum* may be instanced, with their large toothed leaves, in little rosettes and solitary yellow flowers. The flowering *Mesembryanthemum* are showy, but their only opening in sunshine is against them,

M. Cladius, however, being an exception, flowering, when in season, at all times.

Cactuses are all more or less succulent, but they vary very much in character, from the tiny *Mammillarias* to the stately *Cereuses*, such as *Jamacaru*, *peruvianus*, *Tweedier*, and many others with their curiously spined, angled, or fluted, cylindrical stems rising, if allowed, to a great height, while others are of a trailing habit, such as *grandiflorus*, *nycticalus* and *MacDonaldiae*—which produce their immense blossoms at night—there are also intermediate forms more suited to smaller structures, such as *Pilocereus senilis*, the Old Man Cactus, *Melocactus communis*, the Turk's-cap Cactus, the various *Echinocereus* and *Echinocactus*, with their curiously ribbed stems, clad with numerous tufts of formidable spines, which usually begets them the respect they require. These Cactuses are benefited by having a few degrees more heat when making their growth than is usual in winter gardens and conservatories; but if they are not required to grow much they will do very well in sunny corners of such structures, of course taking care that they are not over-watered, as this will cause decay sooner than a low temperature. For flowering none surpass the old flat leaf-like stemmed (*Phyllocactus*) sorts, such as *Jenkinsonii* and *anguliger*. Their flowers are not so large as some of the *Cereuses*, but they make up for this in quantity and in the time they last in flower. They are all propagated readily from offsets or cuttings, which are best put in a warm sand-bed; they soon root, and may then be potted up in the compost already recommended. Never shade them, and, unless when making growth, always water sparingly. They are easiest managed when a part of a house can be devoted to them. Many *Euphorbias* are very similar to the *Cereuses* both in appearance and treatment. F. Ross, *Bletchingley*.

THE HARDY FRUIT GARDEN.

STRAWBERRIES.—As soon as the fruit is gathered, the plants which are to remain for another season should have the runners trimmed off, and the mulching cleared away. The plants should then have some of the older and the useless leaves cut away, which will encourage the production of fresh growth, the plants becoming furnished with good healthy foliage again before winter, ensuring stronger crowns than would be the case if the plants were left untrimmed. I am no advocate for the removal of the whole of the foliage after the plants have done bearing, as I think it tends to weaken the crowns. The late varieties should have all the runners not required for layering taken off.

Gathering Fruit.—The weather of late has been the worst possible for this purpose, and where large quantities of fruit are required for preserving purposes, it is a difficult matter to catch them in a dry condition. The only way to meet the difficulty is, when a favourable day does occur, to put on all hands, and get the fruit gathered quickly. Here we are gathering Currants of sorts and spreading them out in the vineries to dry, as another week's wet weather would have spoiled half the crop. Red Currants for jelly making should be gathered as soon as the berries are just nicely coloured, and before they become deep red. Kentish Cherries will now need close watching, for to have them in a fit condition for bottling they require to be gathered just at a certain stage. The best way to ascertain when they are ready is to take a fruit or two, and while holding the fruit in the left hand, pull the stalk with the right, and if it comes away easily, with the stone attached, the sooner they are gathered the better.

Strawberries for bottling whole must be gathered while firm, which is before they are fully ripe, otherwise they will not keep. The Oxonian is one of the best varieties for this purpose.

Grafted Trees.—These had better be looked to, and if the scions are growing well the bindings may be removed entirely, taking care that on trees in the open the young shoots from the grafts are properly secured against damage by wind, and if the scions have made about 3 feet of growth the points should be pinched out.

Wall trees should have young shoots properly trained to fill their respective positions, and all the laterals pinched in to one or two buds, taking out the points of the shoots when they have made about 3 feet of growth.

Cordon trees may be allowed to grow as much as they will, merely keeping the laterals pinched. A. Ward, *Stoke Edith Park, Hereford*.

THE KITCHEN GARDEN.

TURNIPS.—A good breadth of these useful vegetables should now be sown for giving a supply throughout the winter. This sowing will produce roots of a moderate size that may be relied on to keep sound during that period of the year. Red Globe (Veitch's) is undoubtedly one of the best varieties for this purpose, but it is also advisable to sow a small quantity of Chirk Castle for latest use. The fact of this variety keeping firm longer than any other white-fleshed turnip overrules any objection on account of its black skin. It is not necessary to make any great preparations for this crop, and as a rule manure will not be necessary unless the ground is very poor, and if any be given it should consist of bone-dust or something equally rich in phosphates in preference to anything that contains much nitrogen. A piece of ground from which an early Potato crop has been cleared will be suitable, forking over lightly, breaking it down well and levelling it, and the seed should be sown in rows 2 feet apart, and the plants thinned as soon as they are ready, leaving them 9 inches apart in the rows. It is well to sow plenty of seed in case the flea should attack the plants, and if that should occur give a good dressing of wood-ashes and soot in a dry state when the leaves are damp, and repeat as often as may be necessary. An occasional hoeing to keep down weeds will be all the attention the crop will require until full grown. All Cabbage beds should be cleared of stumps, &c., as soon as possible after cutting the heads, or considerable impoverishment of the ground to no purpose will ensue; but if it be deemed advisable, a few rows only may be left to form sprouts, these often proving very useful early in the winter after the Savoys are used. *W. H. Divers, Ketton Hall, Stamford.*

HOME CORRESPONDENCE.

Correspondents will greatly oblige by sending early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.
Photographs or drawings of gardens, or of remarkable plants, trees, &c., are also solicited.

PASSIFLORA EDULIS (GRENADILLA FIG).—A fine example of this stove or warm greenhouse climber growing a 10-inch pot stood on the border in the corner of a small house at Common Hill, Mrs. Clay's pretty place, near Ilfracombe, trained up the back wall and down one of the rafters, and carrying a very heavy crop of fruit, is well worthy of notice in the pages of the *Gardeners' Chronicle*. The roots have pushed through the pot into the border, otherwise a plant having its roots confined to a 10-inch pot could not possibly support such a spread of foliage and heavy crop of fruit as the one observed is carrying. Mr. Dadds, the gardener, states that the fruit is much appreciated for dessert when eaten with cream and sugar. When fully grown it is about the size of an ordinary Elruge Nectarine, having a horny skin, which turns from a glossy green to brown when the fruit is ripe. The fruit contains a large number of seeds, and possesses a peculiar flavour. The species can be easily raised by seed or cuttings put in the ordinary way in a hotbed or any other structure affording heat and moisture, shifting the young plants into larger pots, as they require more room at the roots, using a compost of four parts sandy loam and one of leaf-mould. It is a rapid grower, but the shoots should not be stopped—only thinned out to prevent crowding. If fruited in pots liberal surface-dressing of Beeson's manure should be given once or twice a week before giving water at the roots while the plants are swelling their fruits. *H. W. Ward.*

TURNING PLANTS OUT-OF-DOORS.—The beneficial results of this practice are much more marked if the subjects have been prepared for the change: if this has not been done, the plants are apt to lose about as much as they gain. Although the temperature outside may be as high as that maintained indoors, yet generally the difference in humidity is so different, that should bright sunny weather follow, the plants are very likely to flag, when if remedial measures are not immediately applied, much injury may be done. A capital plan is to have a sort of skeleton greenhouse or frame over which a shading is spread,

and which can be rolled up in the usual way when not wanted. This shading is also extremely handy to let down in the autumn nights when there is likely to be danger from frost. Thick Hessians or "Forfar Scrim" is good cheap material to use for this purpose—or, better, if some of the mineralised shadings be used. These shadings will also throw off a considerable amount of water, if they are given a good slope, and fixed so that they are fully stretched when let down. It is also important that these plants are placed in such a position as to prevent their getting water-logged, and also the ingress of worms. It is a good plan to arrange the plants in lines, and standing the pots on a couple of parallel strips of wood, or similar contrivance, a few inches high; this method affords good drainage, and it is rather difficult for worms to gain entrance. After the plants are arranged in position, fill in the spaces between the pots with coal-ashes, or other plunging material. This protects the roots, and greatly reduces the amount of labour in watering. In selecting a site, choose a sheltered, yet open position, which with the aid of the appliances mentioned, many of the more tender Cape and New Holland subjects may be turned out with advantage. *F. Ross.*

COLOURED POTATOS.—If Mr. Grant will apply to Mr. R. Dean, Ealing, W., in the winter, he will certainly be able to obtain Rufus Potato through him; other growers may have it also. Some growers have a peculiar liking for coloured Potatos, and there can be no doubt but that some truly first-rate sorts beyond those named hide their goodness under coloured skins. Radstock Beauty, carmine blotched; Reading Russet, bright red; The Dean, violet; and the popular Beauty of Hebron, pink; are first-rate sorts, which it will be hard to excel. As the Vicar of Laleham Potato has received such excellent notice at Mr. Grant's hands, and is without doubt very widely grown, some sketch of its origin may not be out of place. The actual Vicar of Laleham, the little riverside Middlesex parish, where all that remained of Matthew Arnold was so recently laid to rest, was a few years ago the Rev. Mr. Peake. That gentleman, who has since betaken himself to another sphere of labour, was a real lover of Potatos, a raiser in a somewhat haphazard way of some seedlings, and withal a very genial gentleman. One autumn, a few years ago, he called upon me to show me three or four Potatos, small, but pretty, and of a purplish colour. They were the product of two very diverse parents—Paterson's Victoria, once such a popular and first-rate flattish white round, and of Red Emperor, a bad Potato, esteemed very handsome then, but a moderate cropper, and peculiarly subject to the disease. Everybody knows the origin of Victoria, but Red Emperor was, no doubt, of Brazilian origin, as I grew stocks of it once which had been brought home from Brazil. The few Potatos Mr. Peake brought me were left for growth the following year, and the produce, though not even then large, was excellent, and indicated a first-class variety. Mr. Peake called to see my produce, and finding I gave the new comer a good character, suggested that it merited a name. I agreed, and then he intimated that as we had a Rector of Woodstock he saw no reason why there should not be a Vicar of Laleham. That name was adopted for the Potato, and as such it has won honour for itself and some kudos, I hope, for its namesake and raiser. I always regretted that the Vicar was not a white-skinned variety. Had it been so it would long ere now have been one of the most popular of market sorts. As it is, it ought to find a big sale as a late spring stock in the market. I did not feel satisfied with the quality of the Vicar, as its flesh is hardly—in my soil at least—of that flaky, mealy quality which marked its parent Victoria. A cross between the Vicar and that excellent but sparse-cropping white, Woodstock Kidney, however, gave in the Dean just what I desire, as I regard that as almost a perfect Potato. It is rounder than the Vicar, has a rougher coat, and of deeper hue, whilst its flesh is tinged with yellow like that of the Victoria and Woodstock Kidney. I have always found a little yellow in the flesh of a Potato indicated flavour, whilst too much not unfrequently meant closeness. I have therefore preferred the Dean to the Vicar, as the former is a distinct improvement. My experience of seedling Potatos has been, that really fine kinds often take three or four years to show their true characters—some take even longer. A promising kind may fail to give size in its tubers for three or four years, but presently the real character is fully developed, and it remains permanently fixed. The particular

Potato inquired about by Mr. Grant—Rufus—is a seedling from Early Rose crossed with Mr. Feun's small but good red kidney, Bountiful; that also has a yellow tinge in the flesh, and although, like Bountiful, the tops are not very robust, the tubers are large and of even size; they materially resemble those of Vermont Beauty when it was first grown in this country. It is not unnatural that crosses between white and coloured Potatos should produce sorts of each colour, and of intermediate shades, but it is unusual to find two coloured kinds producing pure white forms; that has often happened in the course of my crossing and raising experience. I have usually found the pollen parent to be the most marked in its effects upon the produce, but there is no absolute rule. We have such a wealth of good Potatos, however, that it is very difficult to raise any better ones. *A. D.*

NECTARINES IN SUCCESSION.—I herewith enclose three fruits of Violette Hâtive Nectarine, taken from different parts of one tree, the branches of which are taken through holes in the partition into houses earlier and later than the one in which the tree is planted. The three successions have for several years finished satisfactorily. The earliest fruits commenced to stone when the latest were in bloom—a condition of things which I had previously some doubt of when applied to the Peach or Nectarine. It has, however, proved a valuable method of producing a succession of fruit from one and the same tree, and I send you the specimens in case any of your readers should doubt the possibility of the same having been accomplished. *Geo. Fennell, The Gardens Fairlawn, Tunbridge, July 12.* [A very interesting case, as the roots were subjected to a uniform, the shoots to a variable temperature. The earliest fruit was dead ripe, one would require another fortnight, and the latest a month to be ripe. *Ed.*]

THE NON-WARRANTY OF SEEDS.—Will you allow me to say a few words on this important subject to the retail seed dealer, and how the non-warranty clause first came about? As I was in some way connected with the first trial that took place in the Queen's Bench on the seed adulteration after the passing of the then called new Act to prevent the adulteration of seeds, the affair is still vivid in my memory, I may recapitulate a few of the facts, as appeared in the *Gardeners' Chronicle* special report at the time of the trial, and of which the retail trade appear not to have taken the least notice, and not until within the last year or two has the subject received any attention whatever. But the wholesale trade was alive to the matter, and hence the non-warranty clause. The case turned on the adulteration or colouring of Trifolium with sulphurous acid gas—yearling or old seed had been coloured to represent new growing seed, but of course was perfectly useless. I myself tested the growth of the seed; but on the trial that went for nothing; it was bought by sample, and, according to the judge's decision, though a fraud had been perpetrated, the bulk compared with the sample; though good or bad, that was immaterial so long as bulk and sample agreed. The bulk of the doctored seed came to hand at the end of the season; there was a great hurry about it—in fact, so urgent were the farmers that it was delivered to several at the railway station, never coming into the seedsman's premises, proving that the seed could have been tampered with only before transit, exonerating the seedsman from any blame, beyond error of judgment, which scores fell into besides the same season. He was the only man in the United Kingdom who protested against it and took the matter up on public grounds for the benefit principally of the farming community, and contested it in the Queen's Bench, in London, thereby doing more service to the farmer than any man then living. Several samples and bulks of seed coming from the same source that same season were excellent in growth, throwing the seedsman off his guard. In the latter part of the season through the urgent demand, there was not time to test the growth, hence the error. After this trial the non-warranty affair appeared. As a witness I will narrate a few facts to show what the retail man may expect. I had with me a trial book of seeds showing the testing of 700 samples that season under the seedsman in question, to show it was the custom of good houses to test the growth of seeds before sending them out, the seedsman in question being very particular in this respect. But the judge wanted further proof than this, so I, myself, went to three of the principal London houses, asking them to come forward and testify as to the custom of the London trade testing

the growth of seeds before sending them out, but not one of these would do so. One gentleman who was for the opposition, was touched upon this point by the seedsman's counsel—he was connected with a London firm now defunct, and, I think the man likewise, but if he still lives he may remember stating that it was not the general custom of the trade to test the growth of seeds before sending them out; and this, in my impression, greatly injured the seedsman's cause. This very gentleman was a witness before the select committee of the House of Commons on the seed adulteration before the passing of the Seed Adulteration Act, and to inquiries there stated it was the custom of the London trade to test the growth of everything before it was sent out. Here was a man as a Government witness giving opposite accounts. Had the retail trade been half awake, as the wholesale trade were, this subject ought to have been followed up all through the country, and a society formed for their protection; I have for years seen the necessity of such a society, and the retail trade ought to have seen at once the necessity of protecting themselves. A single individual coming forward having experienced a gross fraud, showing his desire to serve the public with genuine articles, and fighting single-handed a powerful society—if there is a champion amongst seedsmen he ought to be the one. I do not think it speaks much in favour of the retail trade to allow a single individual to be ruined in a good cause and a powerful society opposing. A society would not in any way benefit me, as I have entirely left the trade, as my card will show; but after being many years connected with the trade I still feel interested in it. Apologising for trespassing on your space. *Fair Play.*

HAUTOIS STRAWBERRY.—That this fruit does not find a place in our fruiterers' shops in our large towns is somewhat singular and disappointing, the flavour being much liked for its piquancy, even if the fruit at its best is only a small one. Many growers having been supplied with plants which were either male or female only, have necessarily not succeeded in fruiting it, and have condemned it as unfruitful, and this belief has spread—it not having become generally known that the male flower is produced on one plant, and the female on another. Given runners selected from a plantation in good bearing, and therefore of mixed sexes, the fruitfulness of a new plantation is assured, and when the plants are once possessed, the formation of new beds, whenever found necessary, presents no difficulties. I have found the plant do best on a border facing north, that is, behind a tall hedge or wall, so as to secure some amount of shade from the sun, and a cool soil; in warm positions the plants do not usually set their fruits so well, possibly because it sets its fruits rather late, when in the generality of summers the soil is getting in such positions exhausted of its moisture. A good distance to plant the runners is 1 foot apart in the rows, and the latter at 2 feet or rather more apart if the soil be good. It increases fruitfulness in the plants if the runners are allowed to root in the rows the first year, as then there will be no want of a due mixture of male and female plants. The plantation in the second year may have the alleys between the lines reduced to 1 foot in width, by permitting the rooted runners to extend 6 inches on each side of the original row. In the third year—and it is not advisable to destroy the plantation until it is six or seven years old, or at any rate before a new one is in full bearing—the alleys may be allowed to become overrun with the runners, and every third original row cleared out with the spade to form an alley between what will then be beds of two rows each. By following up this method of renewal, but in various ways, the plants may be kept in bearing for the time stated. As a manure for the Hautois there is nothing better in easily accessible materials, than leaf-mould and Mushroom bed dung spread over the plants during the winter. As the fruits are borne on tall stalks there is seldom any occasion to mulch the soil with short straw to preserve them from the dirt, yet in all dry soils a mulch is an improvement so long as the alleys remain open. Now is a good time to lay down plantations. *M. W.*

WHAT IS AN "HERBACEOUS" PLANT?—At p. 73 Mr. E. Jenkins asks the above question, but it is quite clear, from his remarks, that he has little or nothing further to learn on that particular point. To many persons, however, the term "herbaceous" is bewildering, and is the cause of endless disputes

at horticultural shows; such being the case would it not be better to substitute the word "perennial," so that the wording of a class in prize schedules may read thus—"Hardy perennial plants." There are now so many caulecarpic plants exhibited as herbaceous—under misapprehension of the word—that it seems to me the time has arrived for widening the field to admit them. Of course in a class worded as suggested it is quite possible for mistakes to occur sometimes, but I think they would be less frequent than they have been in the past. *J. Houghton, Hedgesburg.*

CABBAGES.—I have seen during the past few days some few excellent new Cabbages, which bear special merits, and are well worthy of mention. At Messrs. Sutton & Sons' trial grounds, Reading, out of myriads of Cabbages in trial, and all having exactly the same treatment, there stood out specially early and excellent Sutton's Little Gem, a very dwarf emerald-green variety, very distinct, and with solid hearts, which seems to be a "gem" indeed in a large family. The second Cabbage is Sutton's Selected Dwarf, larger than the first, with hearts of the usual conical form, but every one so firm, white, and handsome that the variety commanded attention. I should regard this kind for garden use as a very prince amongst Cabbages. The plants will stand very close together, and for small gardens would prove a great boon. The selected stock of Sutton's Dwarf Blood-Red, or pickling Cabbage, is also a very noticeable strain, and one which should for ever supersede the old huge leafy stocks of pickling Cabbages. If the heads are less big, they are firmer, deeper in colour, less hard in texture, and less strong in flavour. It is a very pretty as well as a very superior pickling Cabbage. At Heckfield Place Gardens, Mr. Wildsmith drew special attention to a Cabbage named Veitch's Earliest of All—of course a somewhat pretentious designation, because some other Cabbages which are smaller-hearted are earlier; but for a large or rather good-sized garden Cabbage, it is, without doubt, a superb variety, not only because so good at all points, but so early for its size. This variety, whilst carrying fairly large, clean, solid-pointed heads, has very few outer leaves, and in that respect alone merits distinction. There can be no doubt that in the matter of Cabbages—thanks chiefly to the keen watchfulness of our seedsmen in these sharp competition days—we are going a-head, and it is hoped in a fair way soon to obliterate all the large, big-headed leafy stocks. Mr. Wildsmith also had a few heads left of the French Early Etampes, a wonderfully good Cabbage, which, without doubt, will soon find its way—if it has not done so already—into our English trade lists. *A. D.*

SOCIETIES.

ROYAL HORTICULTURAL.

TUESDAY, JULY 24.—The exhibition held in the Drill Hall, James Street, Westminster, in conjunction with that of the Southern Section of the National Carnation and Picotee Society, made a pretty display altogether, and fairly filled the table space. The best feature of the whole, apart from the special exhibits of the latter Society, was the fine collection of Ferns sent up by Messrs. Birkenhead, of Sale, Manchester. This was a surprise to many South country growers, and was greatly admired. The visitors during the afternoon were more numerous than on any previous occasion, since the Society removed from Kensington.

Floral Committee.

Present: G. F. Wilson, Esq., in the Chair, and Messrs. Shirley Hibberd, H. Herbst, J. Fraser, W. Bates, Rev. W. Wilks, T. Baines, R. Dean, C. Noble, H. Ballantine, C. Pilcher, J. Dominy, H. M. Pollett, J. O'Brien, E. Hill, G. Paul, B. Wynne, and Dr. Masters.

The Chairman contributed from his garden at Wisley flowers of hardy Lilies of strong growth. These were giganteum, Brownii, Martagon in three vars., elegans, avenaceum, concolor, and Coridion, the latter from a bulb growing in a pot. Sprays of the showy crimson *Spiraea palmata* came from Mr. Charles Noble's nurseries, Bagshot.

A large group of stove and greenhouse plants and Orchids was contributed by Mr. B. S. Williams, Victoria and Paradise Nurseries, Holloway, and consisted of several fine species and hybrid forms of

Cypripedium, *Cattleya gigas*, *Masdevallias*, *Vandas*, two well-bloomed pieces of *Oncidium incurvum*, the spikes of bloom measuring from 3 to 4 feet in height; *Epidendrum cochleatum* was a good plant with ten flower spikes. Ferns, Palms, and *Dracaenas* were interspersed as usual amongst the flowering plants.

*Dahlia*s of the pompon, Cactus and single classes, and H.P. and T. Roses, were sent by Messrs. Cheal & Sons, Crawley.

Roses, both H.P.'s and Teas, in considerable numbers, and of capital quality, were shown by Mr. B. R. Cant, Colchester.

Gaillardias, *Pentstemons*, *Delphiniums*, *Amaryllis*, and mixed herbaceous flowers, were shown in quantity by Messrs. Kelway & Sons, Langport, Somerset.

Some cut blooms of *Pentstemon* in variety came from Messrs. H. Cannell & Sons, Swanley, some of which were of extraordinary good quality; we mention a few:—*Bertha Kosch*, light rose-pink; *Lord Chelmsford*, scarlet and white; *Alp. Daudet*, crimson; *J. Robertson*, scarlet, with a white tube; *Dr. Tukey*, one of the best, scarlet with white tube, striped inside with crimson. *Fuchsia triphylla*, a small plant, hung with orange-scarlet flowers in some profusion, was worthy of special notice amongst the Swanley plants.

A pretty *Lobelia erinus*, compact, and of the shade of blue of *Myosotis palustris*, came from Mr. H. Scott, Cambridge.

Mr. T. Smith, nurseryman, Newry, showed a good form of *Lychnis hybrida*, the parents, *L. flos-jovis*, and *L. coronaria* being shown alongside.

Seedlings of *Lilium elegans* in orange, orange-scarlet, and crimson colours, and each exhibiting some point of difference in the form of petal, were shown by Mr. W. Gordon, Twickenham. Other exhibits from him were *Iris Kempferi* seedlings, the best being *Kaiser Wilhelm*, a white ground flower, striped and flecked with purple; and *Enterprise*, a purple flower, marked sparingly with white.

Messrs. W. Paul & Son, Waltham Cross, showed new Roses, the best were *Duchess of Albany*, a deep pink flower, a sport from *La France*, identical in other respects with that variety; *Cheshunt Scarlet*, a bright-looking flower, nice in the bud state; *Brilliant*, a H.P., was another of this kind—a deep crimson flower, of the admired *Hazel-nut* form of bud; *Tea Rose White Lady*, a French-white, excellent as a half-opened flower.

H.P. Rose *Margaret Haywood* was shown by T. B. Haywood, Esq., Woodhatch Lodge, Reigate; it is a full flower, of deep pink, with the delicious perfume of *Rose Centifolia*.

Messrs. J. Veitch & Sons, Chelsea, contributed a group of uncommon and interesting plants. *Clethra alnifolia*, an old hardy shrub not frequently seen now-a-days, was shown in 6-inch pots, and as it produces its spikes of scented white flowers in great abundance and for a considerable period, is likely to grow in favour. *Yucca obliqua* was represented by a cut flowering head; the buds of this species are bright red, which, with the creamy-yellow of the interior of the flower, makes a bright appearance. A New Zealand shrub, *Notospartium Carmichaelii*, with terete stems, bearing tufts of small bright rosy-lilac, pea-like flowers. There was a *Stuartia*, to which a certificate was given. It has flowers of a satiny-white, slightly frimbriated margin, and prominent yellow stamens, the flower being cup-like in shape; leaves oval dark green above, lighter beneath, tinged with brown in a young state. *Spiraea bullata*, of dwarf habit with red flowers, small deep green bullate leaves. *Acer distylum*, with red young growths; and *Sambucus nigra heterophylla* with needle-like prolongation of the leaves. *Cytisus capitatus*, the flowers borne at the tops of the shoots, and a few specimens of hybrid *Rhododendrons* completed the exhibits. A certificate was granted to one of the *Rhododendrons*, named *Purity*, pure white.

Mr. T. S. Ware, Hale Farm Nurseries, Tottenham, staged a collection of cut hardy flowers—*Liliums*, such as *L. Brownii*, *L. chalcedonicum*, *L. Humboldtii*, *L. Martagon*, and *L. candidum* being one of the chief features. There were also Iceland and Shirley Poppies, various *Gaillardias*, *Scabiosa caucasica*, *Helianthus japonicus*, *Centaurea macrocephala*, and a *Perpetual Carnation*, Mrs. Crombie, creamy-yellow, with broad red edge shaded off into the yellow.

A group of a similar character came from Messrs. Paul & Son, Cheshunt, to which was added a collection of Roses in ten boxes, including several fine blooms of good varieties. The Shirley Poppies were

again shown here, and double and single Delphiniums in variety, also *Achillea aurea*, *A. millefolium rubra*, *Thalictrum flavum*, *Spiraea astilboides*, *S. palmata*, and *S. p. rosea*, both very fine; *Tropeolum speciosum*, *Campanula pelyviformis*, full of flower; *C. Waldensteyna*, *Cistus algarvensis*, *C. crispus*, were also to be seen.

Bignonia Carriera, the flowers of which have a tube of yellow with bright rosy-lake lobes, was sent by Mr. F. Ross, Pendell Court Gardens, Bletchingley, who showed also *Veronica salicifolia* and Sweet Williams.

Oreocome Candolei was awarded a Certificate, it is an elegant umbelliferous plant of tall habit, suitable for a wild garden. Shown by Mr. C. Noble, Bagshot.

Orchids.—A specimen of *Lælia Amesiana* ×, with nine flowers on three spikes, came from Baron Schroder's garden, The Dell, Egham. It was well flowered, and obtained recognition from the committee. The rarely seen but beautiful *Saccolabium coeleste*, a plant with two spikes of its blue and white flowers, was shown by Mr. B. S. Williams. Plants of *Anguloa Ruckeri retusa*, a flower smaller than the type, and greatly compressed at the sides; and *Odontoglossum cristatellum*, were shown by Mr. H. Adams, gr. to R. B. Lemon, Esq., Moatbridge, Beckenham; Mr. Cowley, gr. to F. G. Tautz, Esq., Studley House, Shepherd's Bush, showed *Miltonia vexillaria superba*, a rather small flower, of deep rose colour, and rich brown starry patch towards the base of the lip; Mr. W. White, gr. to C. Dorman, Esq., Lawrie Park, Sydenham, exhibited *Anguloa Ruckeri alba*, a finely-scented species; and *Epidendrum vitellinum majus*, with robust spike and large blooms. From Messrs. F. Sander & Co., St. Albans, were *Bollea Wendlandiana*, a flower pale yellow, base of lip a deeper shade of colour, and hood white. Another rare plant was *Lælia Eyermaniana*, (see fig. 12, p. 109), a probable natural hybrid between *majalis* and *autumnalis*. *Cypripedium Stonei* acrosepalum, a flower pressed into the form of a flattened canoe, was shown by Messrs. Seeger & Tropp, of Lordship Lane, East Dulwich. The two lateral sepals are here disjoined.

Messrs. W. & J. Birkenhead, of Sale, near Manchester, staged a very fine collection of Ferns, which, while being one and all fine examples of good culture, contained several quite new and many exceedingly rare species; indeed, it may safely be said of them that seldom if ever has such a varied and interesting group of these elegant and graceful plants been staged at a London show. The group was made up of over 1000 plants, many of them extra-sized specimens, and contained over 100 British and 250 exotic species and varieties. In the fine selection of British Ferns staged alongside the more tender kinds the fact was demonstrated that our isles give varieties which are in every particular worthy of association with the exotics. Few Ferns can exceed the beauty of the finer forms of our *Athyrium Filix-femina*, such as *A. F.-f. acrocladon*, *A. F.-f. plumosum*, *A. F.-f. elegans*, and *A. F.-f. todeasoides*, of which fine examples were exhibited. The crested varieties of *Polypodium vulgare* were well represented; that most beautiful Filmy Fern like *P. v. trichomanoides*, and the crested and fringed *P. v. grandiceps*, *P. v. elegantulum*, *P. v. bifido-multifidum*, and *P. v. Prestonii*, which is like a massive form of *P. v. cambricum*, a large specimen of which stood behind it. *Lomaria spicata* had several interesting crested and imbricated forms; the pretty *Lastrea amula* also appeared in a crested form. *Scolopendrium*, many handsome and varied, the certificated *S. vulgare crispulatum* being the most densely crested, as also was the *Lastrea montana ramo-coronans*, which also received the honours of a First-class Certificate among its section. The exotic species were truly a representative group, in which many of the genera were well arranged for comparison; for example, over a score of *Davallias* were staged, among them being fine specimens, from the pigmy *D. parvula* and *D. alpina* to the noble *D. solida*, *D. retusa*, and *D. plumosa*. A fine specimen of *Davallia tenuifolia Veitchiana* was certainly one of the most graceful, while *D. Mariessii*, *D. M. cristata*, *D. Tyermanni*, *D. bullata*, and *D. dissecta* represented fine basket plants or for suspending. *Gleichenias* were well represented, and the climbing *Lygodium dichotomum* was a noble specimen, *L. palmatum*, *L. microphyllum*, *L. japonicum*, and others appeared. *Nothochlæna*s and *Cheilanthes* also had representative groups of most praiseworthy culture. The new *Nothochlæna Muelleri*, with densely scaly under, and scattered scales on the upper sides of the fronds, received a First-class Certificate. Other

noteworthy things in this fine group, over which many an admirer lingered, were *Gymnogramma schizophylla gloriosa*. The collection of *Adiantums*, *Adiantopsis radiata*, *Onychium auratum*, *Doodia media crispa*, *D. aspera multifida*, *Cheilanthes gracillima*, *Lomaria fluviatilis*, *L. falcata bipinnatifida*, and the pretty little violet-scented *Aspidium fragrans*. Now that Messrs. Birkenhead have broken the ice let us hope the metropolis may see their beautiful Ferns again.

FIRST-CLASS CERTIFICATES.

To Mr. J. Douglas, for border Carnation Elaine.
To C. Dorman, Esq., for *Anguloa Ruckeri alba*.
To Messrs. W. Paul & Son, for *Rose Duchess of Albany*.

To Mr. B. S. Williams, for *Saccolabium coeleste*.
To Messrs. J. Veitch & Son, for *Rhododendron Purity*.

To Messrs. J. Veitch & Son, for *Stuartia species*.
To Mr. C. Noble, for *Oreocome Candollei*.

To Messrs. Paul & Son, for *Rose Paul's Cheshunt Scarlet*.

To Baron Schroder, for *Lælia Amesiana* ×.
To Mr. W. Gordon, for *Iris Enterprise* and *I. Kaiser Wilhelm*.

To Mr. R. Dean, for Carnation Scarlet Bedder.
To Messrs. W. & J. Birkenhead, for *Nothochlæna Muelleri*.

To Messrs. W. & J. Birkenhead, for *Scolopendrium vulgare cristatum*.

To Messrs. W. & J. Birkenhead, for *Lastrea montana ramo-coronans*.

MEDALS.

Silver-gilt Banksian.—To Messrs. Paul & Sons, for group of plants.

Silver Banksian.—To Mr. B. R. Cant, for cut Roses; to Messrs. B. S. Williams, for group of Orchids; to Mr. T. S. Ware, for collection of cut flowers; to Messrs. W. & J. Birkenhead, for collection of Ferns.

Bronze Banksian.—To Messrs. Kelway & Sons, for Delphiniums and Gaillardias.

Fruit Committee.

Present: H. Veitch, Esq., in the chair; and Messrs. J. Lee, J. Cheal, R. D. Blackmore, J. Burnett, G. T. Miles, W. Marshall, W. Denning, T. B. Haywood, T. J. Saltmarsh, J. Willard, J. Smith, and J. Roberts.

Messrs. J. Veitch & Sons, Chelsea, showed a collection of dishes, and also plants of Fig Negro Largo in fruit, one of Knight's large red Currant, heavily laden, but for size this variety is behind *La Versailles*, of which a dish was shown; also Raspberry Superlative, large, and of good flavour; Strawberry Waterloo, a very large and handsome fruit; with Cherries, Kenton, Hogg's Red, Gean, Elton, Black Hawk, &c.

Messrs. Paul & Son, Cheshunt, sent a specimen of *Eleagnus longipes* in fruit; and also a dish of the fruit stewed; it is extremely acid, and is not likely ever to become a favourite garden fruit in England. *La Versailles* red and white Currants were well shown by Messrs. Paul. A collection of eight varieties of Strawberries were sent by Mr. W. Allen, gr. to Lord Suffield, Gunton Park, Norwich, the fruits being large and of fine appearance. The following varieties were well represented:—J. Veitch, Crimson Queen, Unser Fritz, British Queen, and Sir C. Napier.

From the gardens of the Society at Chiswick came several dishes of Currants—Defiance, large red; Red Cherry, do.; White Dutch, and Champagne, pink, being specially fine. The Waterloo Strawberry was also shown well.

The Commercial and Agricultural Co-operative Society, Limited (D. Tallerman), showed Strawberries gathered twelve days before which had been preserved by cold storage, and also a method of packing fruit for travelling, consisting of small cardboard boxes packed in a wooden crate. Other minor exhibits do not merit particular mention.

National Carnation and Picotee Society (Southern Section).

JULY 24.—The late season, the wet dull weather, and the sunless time, all operated to bring about an exhibition of Carnations and Picotees that sufficed to fill only a few yards of tabling. It was found extremely difficult to make up a stand of twelve distinct varieties, and it was only growers of large

collections who could attempt to do so. The flowers were uneven, rough, wanting in purity of the ground, and in general refinement. But the growers did their very best, in order to maintain the prestige of the Society.

Carnations.—There were but two collections of twenty-four blooms in not less than twelve varieties, and throughout the exhibition it could be observed that the display was made up by a very few exhibitors. Mr. Charles Turner was 1st, and in giving the names the two twelves making up the stand were taken separately, reading in lines from left to right; the flowers were—Sarah Payne P.P.B., Mars S.B., H. K. Mayor C.B., Juno P.F., John Keet R.F., James Douglas P.F., James McIntosh S.B., Mr. Brown R.F., Mayor of Nottingham P.F., William Skirving P.P.B., Sir Garnet Wolseley P.P.B., E. S. Dodwell C.B., Sybil R.F., Henry Cannell S.F., Jessica R.F., Mrs. Perver R.F., Prince George of Wales P.F., and Clipper S.F., a few of the foregoing being shown in duplicate; 2nd, Mr. James Douglas, gr. to F. Whitbourn, Esq., Great Gearies, Ilford, with James Douglas P.F., Sybil R.F., Matador S.F., Seedling P.P.B., James Merryweather R.F., Sportsman S.F., Thalia P.F., Seedling C.B., Admiral Curzon S.B., Henry Cannell S.F., Squire Potts S.B., a very fine and promising flower; President of Corpus P.F., and Florence Nightingale P.F., with some of the foregoing in duplicate and several seedlings.

In the class for twelve blooms, dissimilar varieties, there were but two competitors, Mr. J. Douglas being again 1st, with James Douglas P.F., Sybil R.F., Mrs. Gorton C.B., Thalia R.F., Seedling P.P.B., Matador S.F., Florence Nightingale P.F., John Ball S.F., Sportsman S.F., Seedling C.B., Admiral Curzon S.F., and Duc d'Aumale C.B.; 2nd, H. W. Headland, Esq., The Firs, High Street, Leyton, with William Skirving P.P.B., Diana R.F., Harrison Weir C.B., Miss Gorton C.B., Thalia R.F., Sarah Payne P.P.B., Sybil R.F., Fred S.B., Sportsman S.F., James Douglas P.F., Florence Nightingale P.F., and Matador S.F. In the class for six blooms, dissimilar, there were four entries, Mr. C. Phillips, Hamilton Road, Reading, being 1st, with Tom Pouce S.B., a very fine variety raised by Mr. E. S. Dodwell; William Skirving P.P.B., Thalia R.F., James Douglas P.F., J. D. Hextall C.B., and Mrs. W. H. May R.F.; 2nd, Mr. C. Henwood, Hamilton Road, Reading, with W. Skirving P.P.B., James Douglas P.F., Thalia R.F., J. D. Hextall C.B., Mayor of Nottingham P.F., and Clipper S.F.; 3rd, Mr. Martin Rewan, Manor Street, Clapham; 4th, Mr. Startup, Bromley.

Single Blooms.—In the class for single blooms there were comparatively few flowers; the best were scarlet bizarres:—1st, Admiral Curzon, from Mr. J. Douglas; 2nd, James McIntosh, from Mr. C. Turner; 3rd, Arthur Medhurst, from Mr. H. W. Headland; 4th, Admiral Curzon, from Mr. J. Douglas; 5th, Fred, from Mr. H. W. Headland.

Crimson Bizarres: 1st, W. M. Hewitt, from Mr. J. Douglas, and 2nd, do.; 3rd, Mrs. Whitbourn, from Mr. H. W. Headland; 4th, W. Wardill, from Mr. C. Phillips; 5th, J. D. Hextall, from Mr. H. Startup.

Pink and purple bizarres.—1st, H. K. Mayor, from Mr. C. Turner; 2nd, Isaac Scott, a new Newcastle flower from Mr. J. Douglas; 3rd, H. K. Mayor, from Mr. C. Turner; 4th, Mrs. Gorton, from Mr. J. Douglas; 5th, Harrison Weir, from Mr. H. W. Headland.

Purple flakes.—1st and 2nd, James Douglas, from Mr. J. Douglas; 3rd and 4th, Juno, from Mr. C. Turner; 5th, James Douglas, from Mr. M. Rowan.

Scarlet flakes.—1st, Matador, from Mr. J. Douglas; 2nd, Sportsman, from do.; 3rd, Sportsman, from Mr. H. W. Headland; 4th and 5th, Clipper, from Mr. M. Rowan.

Rose flakes.—1st and 2nd, Sybil, from Mr. James Douglas; 3rd, John Keet, from Mr. C. Turner; 4th, Thalia, from Mr. C. Phillips; 5th, John Keet, from Mr. C. Turner.

Premier Carnation.—The Premier Carnation selected from the whole show was Tom Pouce S.B., in Mr. C. Phillips' stand of six varieties.

Picotees.—There were two stands only of twenty-four varieties, not less than twelve dissimilar. The Picotees were greatly wanting in purity of the ground-colour, and while some blooms were stale enough, others required few days' longer development. Mr. J. Douglas was 1st with Her Majesty L.P.E., Favourite L. Rose E., Mrs. Sharpe H.S.E., Brunette, H. Red E., Miss Russell L. Rose E., Princess of Wales H. Red E., Constance Heron, H.S.E., John Smith H. Red E., Muriel H.P.E., and several seedlings. 2nd, Mr. C. Turner, with Juliette P.E., Favourite L. Rose E., Rival Purple H.P.E., Mrs. Nicholas L.P.E., Robert Scott L. Red E., Her

Majesty L.P.E., Mrs. Hanbury Rose E., Louisa L. Rose E., Miss Horner H. Rose E., Picco H.P.E., Emily Red E., Lucy L. Rose E., Princess Dagmar, H.P.E., Dr. Abercrombie H. Red E., and Mrs. Gibbons H. Red E., several of the foregoing being in duplicate.

In the class for twelve varieties there were but two competitors also, Mr. Douglas being 1st with Her Majesty L.P.E., Favourite L.R.E., Mr. Sharpe H. Rose E., Brunette H. Red E., Constance Heron H. Rose E., Princess of Wales H. Red E., Miss Rudd L. Rose E., Muriel H.P.E., and seedlings. 2nd, Mr. H. W. Headland, with Clara Penson L.P.E., Nymph L.P.E., Zerlina H.P.E., Favourite L. Rose E., Lady Holmesdale H. Rose E., Princess of Wales H. Red E., Ethel L. Rose E., Her Majesty L.P.E., and Muriel H.P.E., with seedlings.

In the class for six dissimilar blooms there were three stands, Mr. C. Phillips being 1st, with Juliette P.E., Favourite L. Rose E., Mr. Payne L. Rose E., Picco H.P.E., Her Majesty L.P.E., and Mrs. Dodwell H. Red E. 2nd, Mr. M. Rowan, with Clara Penson L.P.E., Master Norman H.R.E., Emily Red E., Her Majesty L.P.E., Countess of Wilton H. Red E., and Favourite L. Rose E. 3rd, Mr. H. Startup.

Single Blooms.—As in the Carnation classes, so here, the number of flowers staged was small. Heavy Red Edges.—1st and 2nd, Princess of Wales, from Mr. J. Douglas; 3rd, Mr. Robertson, from Mr. H. W. Headland; 4th, Brunette, from the same; 5th, Mrs. Dodwell, from Mr. C. Turner.

Light Red Edges.—1st, Violet Douglas, from Mr. J. Douglas; 2nd, Emily, from Mr. C. Turner; 3rd, Emily, from Mr. H. W. Headland; 4th, Seedling, from the same; 5th, Violet Douglas, from Mr. H. Startup.

Heavy Purple Edges.—1st and 2nd, Muriel, from Mr. J. Douglas; and 3rd, from Mr. Headland; 4th, Zerlina, from the same; 5th, Rival Purple, from Mr. C. Turner.

Light Purple Edges.—1st and 2nd, a charming unnamed seedling, from Mr. J. Douglas; 3rd and 4th, Clara Penson, from Mr. H. W. Headland; 5th, Her Majesty, from Mr. C. Phillips.

Heavy Rose Edges.—1st, Constance Heron; and 2nd, Lady Holmesdale, from Mr. J. Douglas; 3rd and 4th, the same varieties, from Mr. H. W. Headland; 5th, Mrs. Payne, from Mr. C. Phillips.

Light Rose Edges.—1st, Favourite, from Mr. J. Douglas; 2nd, Lucy, from Mr. C. Turner; 3rd, Favourite, from Mr. C. Phillips; 4th, Miss Flowdy, from Mr. J. Douglas; 5th, Favourite, from Mr. C. Phillips.

Premier Picotee.—This was Muriel, heavy purple edge, shown by Mr. J. Douglas. A Certificate of Merit was awarded to the unnamed light purple edge shown by Mr. Douglas.

Sels, Fancies, and Yellow Grounds.—The yellow grounds, and especially the fine varieties, raised by Mr. J. Douglas, were shown in fine form; they are early to bloom, and thus proved an advantage in such a late season. Mr. C. Turner was 1st with twenty-four blooms, not less than twelve dissimilar, having of yellow grounds and sels, Annie Douglas, Mrs. Reynolds Hole, Almira, Colonial Beauty, Agnes Chambers, Dorothy, Terra Cotta, and Amber; of sels and fancies—Purple Emperor, Ellen Burrows pink; Mr. Maclaren, in a run fancy form; and Sybil rose—several of the foregoing being shown in duplicate. 2nd, Mr. J. Douglas, with yellow grounds and sels, Dorothy, Annie Douglas, Agnes Chambers, Almira, Janiera, Ada (heavily edged with a kind of salmon-brown), and Terra Cotta; Elaine, a lovely white self of great quality (awarded a First-class Certificate by the Floral Committee); Bride, white; Matador, a run scarlet self; and seedlings. 3rd, Mr. W. Toby, 3, St. Mark's Grove, Chelsea. There were but three competitors. There were two stands of twelve blooms, dissimilar, Mr. A. J. Saunders, gr. to Viscountess Chewton, Brockham Lodge, Cobham, being 1st, with a poor lot—rough and uneven; 2nd, Mr. H. Startup. There were two stands of twelve blooms of yellow grounds, not less than six dissimilar, and here Mr. J. Douglas was 1st, with a very fine lot of blooms unnamed; Mr. C. Turner came a close 2nd, with fine examples of Annie Douglas, Almira, Agnes Chambers, Colonial Beauty, Prince of Orange, and Dorothy in duplicate.

Plants in Pots.—There were three collections of twelve plants, dissimilar, Mr. Turner and Mr. Douglas showing in fine form; as in early flowering varieties in pots, Mr. Douglas' yellow-ground Picotees made a great hit. Mr. Turner was 1st, with plants carrying fine heads of bloom, having Pride of Penshurst, Amber, Agnes Chambers, Mrs. Maclaren,

Terra Cotta, Annie Douglas, Colonial Beauty, Prince of Orange, Howard's Yellow Self, Dorothy, Almira, and Purple Emperor. 2nd, Mr. J. Douglas, with unnamed varieties; 3rd, Mr. H. W. Headland.

Miscellaneous.—In the way of miscellaneous subjects, Messrs. James Veitch & Sons, Royal Exotic Nurseries, King's Road, Chelsea, had five boxes of cut blooms of Carnations, Picotees, sels and fancies, including some capital flowers. Mr. C. Turner had a group of plants in pots, principally composed of yellow-ground varieties; and Mr. J. Walker, nurseryman, Thame, seedling Carnations, including a large white self of a promising character, named Duchess of Albany.

NATIONAL ROSE: PROVINCIAL SHOW.

DARLINGTON, July 21.—With this exhibition ends, or very nearly ends, the show season of the Rose, for, with the exception of Tibshelf—a place of which, I daresay, few of the readers of this paper could tell the whereabouts—they have all passed away, and a more exasperating season it is impossible to imagine. All the elements of success seemed secured at Darlington; the arrangements for the show were perfect; the entries were very numerous; and yet here were some of those irritating adjuncts



FIG. 12.—LELIA EBERMANNIANA: FLOWERS ROSEY-PURPLE.
(SEE P. 91.)

which made it so different to expectations—there was in the neighbourhood of Darlington hardly a Rose to be seen. I went the day before through the garden of Mr. E. R. Whitwell, of Barton Hall, the chief promoter of the show, and who might have reasonably expected to make a good fight for the Trophy, and I do not exaggerate when I say there were not three Roses in his garden. Mr. James Backhouse, who generally shows in the class for twenty-four, could only muster half-a-dozen; in fact, never was so late a season known in the neighbourhood of Darlington. Then, again, Mr. W. J. Grant, who exhibited so successfully at Manchester and Wirral, and whose hopes pointed to the Jubilee Trophy, saw all those hopes literally dashed to the ground by a violent hailstorm, which smashed and cut to pieces all his cherished blooms; and then, to crown all, the morning opened most charmingly, and every one, notwithstanding some ominous clouds in the distance, looked hopefully forward to a fine day; but as I left Darlington rain fell, and continued for some time, completely marring the prospects of the show financially, and yet on the whole journey up to London there was not afterwards a drop of rain, nor had there been during the day.

And yet, despite all these drawbacks, the show was the largest ever held in Darlington, and but for the numerous fallings out occasioned by the uncertain weather, would have exceeded in size any exhibition held by the National Rose Society in the provinces, while the quality of the flowers was a matter of surprise to all who have had occasion to watch the un-

certainities of our most uncertain summer. The Roses were not, it is true, in such good character as at Wirral, but still they were very fine, and the dark-coloured Roses especially good. It was a great disappointment to Rose growers not to see Mr. Mark's seedlings of last year, especially Sir Rowland Hill, but, like Mr. Whitwell, his Roses were not in bloom.

Some of the best Roses.—I think it will be sufficient to note the Roses in the principal classes of the exhibition, and therefore give the following in the Jubilee class for nurserymen, thirty-six distinct blooms. The Trophy was again awarded to Messrs. Harkness & Son, Bedale, for Ulrich Brunner, Merveille de Lyon, Crown Prince, Lady Mary Fitzwilliam, Countess of Rosebery, Duke of Edinburgh, Baroness Rothschild, Marquise de Castellane, Auguste Rigotard, Madame Cusin, Comtesse Tretia-koff, David Pradel, a very fine bloom, Madame Gabriel Luizet, Souvenir d'Elise, Charles Lefebvre, Horace Vernet, Star of Waltham, Niphotos, Magna Charta, Souvenir de Paul Neyron, Madame Willermoz, a magnificent flower, and I think the finest bloom I have ever seen of this variety; Madame Victor Verdier, The Bride, Prince Arthur, Devienne Lamy, Princess of Wales, Etienne Levet, Innocente Pirola, Duc de Wellington, Madame Caroline Kust, Duchess of Bedford, very fine; Marie Van Houtte, A. K. Williams, Catherine Mermet, Madame Marie Verdier, and Comtesse de Nadaillac. This was a very fine stand, and the Teas, which had been grown under glass, were exceptionally good.

Open Classes.—In the class for seventy-two there was a very severe fight between Messrs. Paul & Son, Messrs. Cranston, of Hereford, and Mr. B. R. Cant, of Colchester; it took the judges a long time to decide, and ultimately it fell to the Cheshunt firm, with a very fine stand of flowers, consisting of Comte Rambaud, François Michelin, Marshall P. Wilder, very like Alfred Colomb; Baronne de Meden, Captain Christy, Senateur Vaisse, Baroness Rothschild, Madame Eugène Verdier, Louis van Houtte, Souvenir d'Elise Vardon, Beauty of Waltham, Jean Ducher, Général Jacqueminot, Madame de Watteville, Barthelemy Joubert, Innocente Pirola, Exposition de Brie, Abel Carrière, Souvenir d'un Ami, Horace Vernet, Auguste Rigotard, A. K. Williams, Merveille de Lyon, Marie Baumann, La France, Madame Charles Wood, Paul Néron, Madame Alphonse Lavallée, Her Majesty, Marie Finger, Niphotos, E. Y. Teas, Comtesse de Nadaillac, Prince Arthur, a very fine bloom; Madame Jean Perière, Dr. André, Ella Gordon, a good Rose; Susanne Radennaki, Marie van Houtte, Duke of Edinburgh, Charles Lefebvre, Etienne Levet, Comtesse d'Oxford, Countess of Rosebery, Edouard Hervé, Duchesse de Morny, Madame Legrange, Camille Bernardin, Madame Gabriel Luitet, Reynolds Hole, Caroline Kuster, Lord Bacon, a good Rose; Heinrich Schultheis, Ollivier Delhomme, Madame Victor Verdier, Alba rosea, Marie Rady, Emilie Hausberg, Rosiériste Jacobs, George Baker, Xavier Olibo, and Charles Lamb.

Amateurs' Classes.—Turning now to the amateurs classes, we find that the same result takes place with regard to the Trophy—it remains with the winner of last year, T. B. Hall, Esq., of Larchwood, Rock Ferry. His stand of twenty-four was a very fine one, containing the following flowers:—Comte de Rambaud, a flower which has come exceptionally fine this year; La France, Louis van Houtte, Etienne Levet, Captain Christy, Jean Soupert, Paul Néron, Merveille de Lyon, Dupuy Jamin, Rosiériste Jacobs, Baron Rothschild, Madame Victor Verdier, Beauty of Waltham, Anna Ollivier, Marie Baumann, Fisher Holmes, François Michelin, Dr. André, Le Havre, Grace Darling, A. K. Williams, Camille Bernardin, and Marie Finger.

In the class for thirty-six, the Rev. J. H. Pemberton was 1st, with Horace Vernet, Baron Gonella, François Michelin, Comte de Raimbaud, Marie Verdier, E. Y. Teas, Duchess of Bedford, Caroline Kuster, Etienne Levet, Merveille de Lyon, Countess of Rosebery, Her Majesty, Marie Baumann, Grace Darling, Auguste Rigotard, Madame Lambert, Madame Victor Verdier, Reynolds Hole, Dr. André, Madame Eugene Verdier, Charles Lefebvre, Countess of Pembroke, Madame George Schwartz, Ulrich Brunner, Comtesse d'Oxford, Madame Gabriel Luizet, Marie Baumann, Princess of Wales, Exposition de Brie, Lady Mary Fitzwilliam, Marquise de Castellane, Comtesse de Nadaillac, Star of Waltham, Catherine Mermet, Souvenir de Victor Hugo, and Lady Helen Stuart.

In the class for twelve, Colonel Standish Hore, of St. Asaph, was 1st; his success is very wonder-

ful; he grows only about 130 H.P.'s and forty Teas, and yet he competes in a class where growers exhibit who have some 800 or 1000 trees, and beats them too. His blooms are large, well-finished, and excellent in all points, they comprised Lady Mary Fitzwilliam, Prince Arthur, Duke of Connaught, Etienne Levat, Merveille de Lyon, Xavier Olibo, Catherine Mermet, A. K. Williams, Marie Baumann, Louis van Houtte, and Madame Eugène Verdier.

In the Tea and Noisette division there were many beautiful stands exhibited, those of the amateurs being ahead of the nurserymen, so I give the flowers in their classes. The Rev. F. R. Burnside was 1st in twelve Teas, with beautifully clear flowers of The Bride, Marie Bravy, Madame Cusin, Marie van Houtte, Comtesse de Nadaillac, Catherine Mermet, Maréchal Niel, Innocente Pirola, Hon. Edith Giffard, François Kruger, Jules Finger, Souvenir d'Elise. He was run very hard by E. B. Lindsell, Esq., of Beaston, with a box containing the following:—La Boule d'Or, Niphetos, Comtesse de Nadaillac, Madame Cusin, The Bride, Catherine Mermet, Caroline Kuster, Princess of Wales, François Kruger, Innocente Pirola, Souvenir d'Elise Vardon, and Madame Lambard.

In the class for six Teas the Rev. Foster Melliar was 1st, with a good stand of François Kruger, Catherine Mermet, Madame Cusin, La Boule d'Or, Marie van Houtte, and Souvenir d'un Ami. The Silver Medal for the best Tea or Noisette in the amateur's division was awarded to Rev. F. R. Burnside, for a beautiful bloom of Marie van Houtte; and that for the best H.P. in the same division to E. B. Lindsell, Esq., of Beaston, for a beautiful bloom of Her Majesty.

The class for new Roses is always an interesting one, and on this occasion the 1st prize was taken by Messrs. Paul & Son, of Cheshunt, with Victor Hugo. This will be a general favourite. Comte de Paris, Lady Alice, Madame Joseph Desbois, blush white, centre rosy; it was sent out as a hybrid Tea, but, like a good many, might as well have been called a hybrid perpetual. Madame Henri Perière, Madame Mussat, Her Majesty, Souvenir d'Alphonse Lavaleé, Lady Helen Stuart, Edward Heine, The Bride, and Miss Ethel Brownlow.

As before the arrangements were carried out most successfully by Mr. George Byers, the Assistant-Secretary under the superintendence of Mr. E. R. Whitwell, who, unfortunately, was not only not able to exhibit, but was prevented from taking as active a share as usual in the proceedings owing to an injury in the knee received while playing cricket with his children; but nothing could be better than the arrangements of the exhibition, and great credit is due to all concerned.

THE WEATHER.

MEAN TEMPERATURE OBSERVED AT CHISWICK DURING THE WEEK ENDING AUGUST 4. (AVERAGE OF FORTY-FOUR YEARS.)

July 29 63°·3	Aug. 2 63°·2
„ 30 63°·3	„ 3 63°·2
„ 31 63°·3	„ 4 63°·2
Aug. 1 63°·2	Mean for the week ... 63°·2

THE PAST WEEK.

The following summary record of the weather for the week ending July 23, is furnished from the Meteorological Office:—

“The weather has continued dull and unsettled very generally, with local thunderstorms and frequent falls of rain.

“The temperature has been somewhat higher than of late, and in some parts of Scotland it has slightly exceeded the mean for the time of the year; in all other districts, however, a deficit is still shown, varying in amount from 1° to 3°. The highest of the maxima, which were recorded at most stations on the 19th, ranged from 67° in the ‘Channel Islands’ to 71° in Ireland, S., and to 77° in the north and east of Scotland. The minima were in most cases rather above their mean value for the time of year, but on some occasions they fall below it, the absolute minima varying from 40° to 42° in Scotland, from 47° to 49° in Ireland, and from 44° to 49° in England. In the ‘Channel Islands’ the lowest reading was 53°.

“Rainfall has been a little less than the mean in

‘England, E.’ and about equal to it in ‘Scotland, N.’, but more in all other districts, the excess in some localities being considerable. At Newton Reigny, during a thunderstorm on the 22nd, 0·42 inch of rain fell in the brief space of eight minutes.

“Bright sunshine has been very little prevalent, the percentage of the possible amount of duration ranging from 36 in ‘England, N.E.’ to 18 in ‘England, S.’ and only 16 in the ‘Channel Islands.’”

[Accumulated temperature indicates the combined amount and duration of the excess or defect of temperature above or below 32° F. for the period named, and is expressed in Day-degrees—a “Day-degree” signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.			
	Above or below the mean for the week ending July 23.	ACCUMULATED.		
		Above 42° for the Week.	Below 42° for the Week.	Above 42° difference from Mean since Jan. 3, 1888.
Principal Wheat-producing Districts.	Day-deg.	Day-deg.	Day-deg.	Day-deg.
0. SCOTLAND, N. ...	0 (aver.)	91	0	— 129 + 201
1. SCOTLAND, E. ...	1 below	102	0	— 272 + 157
2. ENGLAND, N.E. ...	1 below	113	0	— 315 + 73
3. ENGLAND, E. ...	2 below	127	0	— 254 + 154
4. MIDLAND COS. ...	2 below	125	0	— 296 + 150
5. ENGLAND, S. ...	2 below	127	0	— 339 + 204
Principal Grazing, &c., Districts.				
6. SCOTLAND, W. ...	1 above	113	0	— 192 + 107
7. ENGLAND, N.W. ...	1 below	119	0	— 232 + 117
8. ENGLAND, S.W. ...	2 below	117	0	— 300 + 254
9. IRELAND, N. ...	1 below	111	0	— 184 + 67
10. IRELAND, S. ...	1 below	118	0	— 171 + 113
— CHANNEL ISLANDS	3 below	117	0	— 254 + 154

DISTRICTS.	RAINFALL.		BRIGHT SUNSHINE.	
	More or less than the Mean for the Week.	No. of Rainy Days since Jan. 3, 1888.	Total Fall since Jan. 3, 1888.	Percentage of possible Duration for the Week.
Principal Wheat-producing Districts.	Tenths of Inch.	Ins.		
0. SCOTLAND, N. ...	0 (aver.)	131	20·7	25
1. SCOTLAND, E. ...	7 more	114	17·4	31
2. ENGLAND, N.E. ...	4 more	105	14·4	36
3. ENGLAND, E. ...	1 less	107	12·8	28
4. MIDLAND COS. ...	3 more	99	13·6	23
5. ENGLAND, S. ...	2 more	101	14·3	18
Principal Grazing, &c., Districts.				
6. SCOTLAND, W. ...	5 more	105	23·0	23
7. ENGLAND, N.W. ...	4 more	108	14·2	27
8. ENGLAND, S.W. ...	3 more	110	17·8	26
9. IRELAND, N. ...	3 more	111	19·0	27
10. IRELAND, S. ...	4 more	102	20·1	29
— CHANNEL ISLANDS	5 more	125	16·4	16

NOTICES TO CORRESPONDENTS.

AQUATIC PLANTS: *Aquarium*. Mr. T. S. Ware, Hale Farm, Tottenham, grows many of the hardy species. Messrs. Backhouse & Sons, York, and J. Veitch & Sons, Chelsea, cultivate the tropical and tender species.

APPLES FALLING OFF TREE: *E. M. P.* It sets too many fruits. Another year try timely thinning, and mulch the ground over the roots with short

dung. If you do not manage to secure a crop soon, your tree will run entirely to shoots and foliage, and then there will be no other course for you to pursue but to transplant it.

AYRSHIRE ROSE: *E. M. P.* Your Rose has acquired a sportive habit. It will revert in course of time to its original sobriety of behaviour. Sporting is common amongst Roses.

BOOKS: *G. B.* Read the chapters on the “Life-History of Plants” in *Cassell's Popular Gardening*. Apply, stating your requirements to the Secretary, Science and Art Department, South Kensington.

CHRYSANTHEMUM LEAVES: *Amateur*. The leaves have been spoiled by the leaf miner. Whenever these grubs are seen making runs between the upper and lower epidermis of the leaf they should be crushed between the finger and thumb, and when very numerous cut off the leaves and burn them.

GARDENING BOOK FOR A BEGINNER: *J. E. T. Villa* *Gardening*, by Ed. Hobday (Macmillan & Co.)

GRAPES: *Anxious*. It is a bad case of shanking. Something is wrong at the roots, and should be put right early in the autumn. You can do nothing now to stop the loss of fruit from this malady. Healthy roots, large foliage, well ripened wood, proper ventilation and not excessive cropping, do not produce shanked berries.

HOLLYHOCKS DISEASED: *G. F. P., Egham*. Yours is a virulent example of the Hollyhock disease, as caused by the fungus named *Puccinia malvacearum*. All diseased material should be as effectually destroyed as possible. *W. G. S.*

INSECTS: *H. B. P.* Your Fern leaves are thickly marked with little reddish-brown spots. We could not discover the slightest trace of an insect; indeed, the spots are in a position where insects could not have attacked them, being at the furcations of the little veinlets, and along the mid-ribs. *W. — D. D.* *Sirex gigas*; frequently to be met with in Fir trees.

MANUAL ON THE CULTURE OF HAZEL NUTS: *E. C. P.* We know of no treatise in the English language, but the cultivation of Filberts is pretty fully treated in *Profitable Fruit Farming*, by C. Whitehead, price 1s. Longmans, Green & Co., London; and in *Fruit Farming for Profit*, by G. Bunyard, price 1s. 6d. free by post: F. Bunyard, 29, Week Street, Maidstone. *Die Huzel Nuss*, by Goeschke, is the best book on the subject. It is in the German tongue.

MUSHROOM: *W. D.* A good specimen of a frequent monstrosity.

MUSHROOM GROWING: *Constant*. Boxes and barrels may be used, also nursery flats (baskets). In putting in the materials, put in 6 inches of fresh droppings, levelled and trodden firm, then follow with 2 inches of adhesive loam, also pressed firmly, more dung, and so on till the receptacle is full. Get *Mushrooms for the Million*, by J. Wright, published at 171, Fleet Street, E.C.

NAMES OF PLANTS: *B. P.* 1, *Clematis flammula*; 2, *Oenothera Youngii*; 3, *Silphium laciniatum*; 4, *Aconitum lycoctonum*; 5, *Lychnis coronaria*; 6, *Sedum spurius*. — *W. A. G.* 1 and 2, *Adiantum concinnatum-latum*; 3, *A. Pacottii*; 4, *A. Ludemannianum*; 5 and 7, *A. hispidulum*; 6, *A. affine*; 8, *Nephrolepis Bausei*; 9, *N. tuberosa*; 10, *Gymnogramma japonica*; 11, *Adiantum decorum*; 12, *Polypodium longipes*. — *W. C. H.* 1, a hybrid Pink; 2, 3, and 4, varieties of *Pelargonium peltatum*; 5, *Lychnis obconica*; 6, *Oxalis Ortuguiesii*; 7, *Primula obconica*; 8, *Panicum variegatum*. — *W. W.* 1, we cannot name Roses; 2, *Adiantum formosum*; 3, *Campanula persicifolia*; 4, *Lychnis coronaria*. — *W. F.* *Sorbaria xantholeuca*. — *M. L. D.* The white flower is *Passion-flower*, *Constance Elliot*; the claret-coloured one seems to be a hybrid between *kermesina* and *racemosa*. — *Lost*. *Diplolappus chrysophyllus*. — *J. J. & S.* *Melanthus major*. — *J. D.* 1, *Geranium dissectum*; 2, *Epilobium hirsutum*; 3, *Salvia Verbenaca*. It is not possible to attack the weeds directly, but by drainage and high cultivation you may encourage the grasses to the detriment of the weeds. — *D. T. I.* *Cistus laurifolius*; 2, *Escallonia macrantha*; 3, *Lonicera japonica*; 4, *Cotoneaster microphylla*; 5, *Spiraea arcuata*; 6, *Leycesteria formosa*. — *S. Ray*. Ordinary wild Mushroom. — *A. B. C.* *Cirrhæa tristis*, probably, but the specimens are very bad.

ONTOGLOSSUM CRISPUM DISEASED: *W. E.* “*W. E.*” sends a leaf thickly infested with brownish disease

pustules which bear a strong superficial resemblance to the pustules belonging to some Rust fungus, or Puccinia. This disease of *Odontoglossum* is caused by vast quantities of minute eel-worms, or nematodes, which feed and breed within the membranes of the leaf. The disease is fully illustrated and described in the *Gardeners' Chronicle* for January 9, 1886, p. 41. When the eel-worms cannot be seen in the actual pustules they may be readily found in the tissues of the leaf closely fringing the disease-spots. *W. G. S.*

RUSTY GLOXINIA LEAVES: J. T. S. The leaves have the appearance of having been syringed overhead, a proceeding very injurious to them and Gesnerias. We detected no insects, although there were signs indicative of thrips.

SIDE SHOOTS OF ROSES: W. A. G. These may be thinned out, not by cutting all away indiscriminately, but selecting the strongest and best placed, and cutting out or pinching back the remaining ones. A short time must be allowed to elapse after growth has commenced before beginning the cutting out, &c., so as to be enabled to discriminate between weak and strong shoots.

STRAWBERRIES SENT FOR NAME: All arrived in a bad condition.

VINE LEAVES: J. R. M. The poorly-developed leaves are covered with the common *Oidium*, which can easily be kept down by any of the remedies for mildew, &c.

COMMUNICATIONS RECEIVED:—T. Meehan.—J. R. J.—H. M.—W. J. G.—W. A. H.—J. S.—C. B. S.—H. W. Hayward.—K.—Alcock M. (next week).—H. E. J. C. T.—D. T. Y.—H. L.—I. C. T.—W. S.—W. C.—Betti.

Correspondents sending plants or fruits to be named, or asking questions demanding time and research for their solution, must not expect to obtain an answer to their enquiries in the current week.

DIED.—We regret to announce the death of Mr. GEORGE ROBERT SOPER, a member of the firm of Corry, Soper, Fowler & Co. (Limited), which occurred on the 6th inst., at 300, Amburst Road, Stoke Newington, N.

— We have also to record the death of Mr. F. WHITBOURN, of Great Gearies, Ilford, on the morning of Wednesday, July 25. He had been in feeble health for a long time, but his death occurred quite suddenly.

— The death, on July 17, of Mrs. JANE FISHER, the wife of Mr. Charles Fisher, of Handsworth, near Sheffield, is also announced.

MARKETS.

COVENT GARDEN, July 26.

Our market has been heavily supplied with soft fruit this week, especially Raspberries and Currants; but Cherries, owing to the wet, have arrived in very bad condition, and made low prices. Trade for hot-house goods quiet. *James Webber, Wholesale Apple Market.*

FRUIT.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Cherries, half-sieve... 2 0-5 0	Melons, each ... 1 0-3 0
Currants, blk., half-sieve ... 3 0-3 3	Peaches, dozen ... 2 0-19 0
— Red, half-sieve... 2 0-3 0	Pine-apples, Eng., lb. 2 0-3 0
Grapes, per lb. ... 1 0-3 0	— St. Michael, each 2 0-5 0
Lemons, per case ... 13 0-21 0	Strawberries, lb. ... 0 6-1 0

VEGETABLES.—AVERAGE RETAIL PRICES.

s. d. s. d.	s. d. s. d.
Artichokes, p. doz... 6 0-...	Mushrooms, punnet 1 0-1 6
Asparagus, Fr., bund. 1 6-4 0	Mustard and Cress, punnet ... 0 4-...
— English, 100 ... 3 6-6 0	Onions, per bushel ... 5 0-...
Beans, Kidney, lb. ... 1 0-...	Parsley, per bunch... 0 4-...
Beet, red, per dozen 1 0-2 0	Potatoes, per cwt. ... 4 0-5 0
Carrots, per bunch... 0 8-...	— kidney, per cwt. 4 0-5 0
Cauliflowers, each ... 0 8-...	Rhubarb, per bundle 4 0-...
Celery, per bundle ... 1 6-2 8	Shallots, per lb. ... 0 6-...
Cucumbers, each ... 0 6-1 0	Spinach, per bushel... 2 6-...
Endive, per dozen ... 2 0-...	Tomatoes, per lb. ... 1 0-...
Green Mint, bunch... 0 4-...	Turnips, per bunch... new ... 0 8-...
Herbs, per bunch ... 0 4-...	— new ... 0 8-...
Leeks, per bunch ... 0 6-...	Vegt. Marrows, each 0 6-...
Lettuce, per dozen ... 1 6-...	

POTATOES.—Jersey Flukes, 6s. to 7s.; do. Kidneys, 6s. to 7s. per cwt.; English, 4s. to 5s. per bushel. Jersey very much blighted; English selling better.

BEDDING-OUT PLANTS.

Per dozen, 1s. to 2s.; per box, 1s. to 3s.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Aralia Sieboldi, doz. 6 0-18 0	Ficus elastica, each 1 6-7 0
Balsams, per doz. ... 3 0-6 0	Fuchsias, doz. ... 3 0-8 0
Bouvardias, per dozen 9 0-12 0	Heliotropes, dozen... 4 0-6 0
Calceolarias, dozen 3 0-6 0	Hydrangeas, dozen... 9 0-18 0
Carnations, per doz. 6 0-18 0	Liliums, var., doz... 18 0-30 0
Cockscombs, per doz. 4 0-6 0	Lobelias, per dozen 3 0-6 0
Coleus, dozen ... 3 0-6 0	Marguerites, doz. ... 3 0-12 0
Crassula, per doz. ... 9 0-12 0	Mignonne, 12 pots ... 1 6-3 0
Cyperus, per dozen ... 4 0-12 0	Musks, dozen ... 6 0-12 0
Dracena terminalis, per dozen ... 30 0-60 0	Myrtles, per dozen ... 6 0-12 0
— viridis, per doz. 12 0-24 0	Palms in var., each 2 6-21 0
Eucyonias, in var., per dozen ... 6 0-18 0	Pelargoniums, doz. ... 6 0-15 0
Evergreens, in var., per dozen ... 6 0-24 0	— Ivy-leaf, dozen... 3 0-6 0
Ferns, in var., doz. 4 0-18 0	Rhodanthe, per doz. ... 6 0-9 0
Foliage plants, various, each ... 2 0-10 0	Scented Geranium, doz. 3 0-6 0
	— Verbena, per doz. 4 0-6 0
	Spiraeas, dozen ... 6 0-9 0
	Zinnia, per dozen ... 4 0-6 0

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Asters, 12 bunches... 4 0-6 0	Mignonette, 12 bun. 2 0-4 0
— French, per bun. 1 6-2 0	Pansies, 12 bun. ... 1 6-3 0
Bouvardias, per bun. 0 6-1 0	Pelargoniums, 12 spr. 0 6-1 0
Carnations, 12 blms. 1 0-2 0	— scarlet, 12 spr... 0 3-0 6
— dozen bunches ... 4 0-6 0	Pinks, 12 bun. ... 3 0-6 0
Chrysanthemums, annual, 12 bun. ... 1 0-3 0	Poppies, 12 bun. ... 4 0-6 0
Cornflower, 12 bun. 1 6-3 0	Primulas, double, 12 sprays ... 0 9-1 0
Delphiniums, 12 bun. 3 0-6 0	Pyrethrums, 12 bun. 2 0-4 0
Eucharis, per dozen 3 0-6 0	Rhodanthe, 12 bun. 4 0-6 0
Forget-me-nots, 12 bunches ... 2 0-4 0	Roses, Tea, per doz. 0 6-1 6
Gardenias, 12 blooms 1 6-4 0	— coloured, dozen. 2 0-4 0
Gladiolus, doz. sprays 1 0-2 0	— red, per dozen ... 1 0-2 0
Heliotropes, 12 spr. 0 6-1 0	— " 12 bunches 3 0-6 0
Lilium longiflorum, 12 blooms ... 3 0-5 0	— Safrano, dozen... 0 9-1 6
— candidum, 12 bl. 0 6-1 6	— Moss, 12 bun. ... 4 0-12 0
— per bunch ... 1 6-2 6	Spiraea, 12 bun. ... 4 0-6 0
— (Orange) per bun. 1 0-2 0	Sweet Peas, 12 bun. 3 0-4 0
Marguerites, 12 bun. 3 0-6 0	Sweet Sultan, 12 bun. 3 0-6 0
	Tuberose, 12 blms... 0 6-1 0

*. Orchid bloom in great variety, but the demand not very good.

SEEDS.

LONDON: July 25.—Messrs. John Shaw & Sons, seed merchants, of 37, Mark Lane, E.C., write that the continued wet weather which is doing so much harm to the growing crops of seeds has naturally exercised a hardening effect upon values generally. There is in consequence an increasing speculative inquiry for Trefoil, and also for Alsike and white Clover seeds. The new French Trifolium is of unsatisfactory quality. In bird-seeds there is no quotable movement. Blue Peas continue exceedingly cheap. Mustard and Rape-seed are unchanged. Linseed keeps steady.

CORN.

Averages.—Official statement showing the average price of British corn, imperial measure, in the week ended July 21:—Wheat, 32s.; Barley, 19s. 1d.; Oats, 17s. 4d. For the corresponding week in 1887:—Wheat, 34s. 3d.; Barley, 21s. 4d.; Oats, 17s. 9d.

FRUIT AND VEGETABLES.

SPITALFIELDS: July 25.—Supplies continue to be large for all descriptions of vegetable produce, and demand satisfactory. Jersey Potatoes, especially flukes, are arriving in bad condition, owing to blight, hence low prices. Quotations:—Black Currants, 3s. per half sieve: red Currants 2s. to 3s. 3d.; Cherries, 1s. 6d. to 3s. do.; Strawberries, 1s. 9d. to 2s. 6d. per peck; Gooseberries, 2s. per half sieve; Raspberries, 3d. per 1lb. punnet; Raspberries, 18s. per cwt.; English Tomatoes, 3s. 6d. to 4s. per peck; Cabbages, 1s. 6d. to 2s. per tally; Peas, 1s. 6d. to 1s. per bushel; do., in sacks, 3s. to 4s. 6d. per sack; Turnips, 2s. to 2s. 6d. per dozen bunches; Carrots, 1s. 9d. to 2s. do.; Spring Onions, 1s. 6d. to 2s. do.; Parsley, 9d. to 1s. 3d. do.; Mint, 1s. to 1s. 6d. do.; foreign Onions, 6s. to 6s. 6d. per box of about 130 lb.; frame Cucumbers, 2s. to 3s. per dozen; Endive, 1s. to 1s. 6d. per dozen; Cos Lettuces, 4d. per score of 22; Beetroots, 6d. to 8d. per dozen.

STRATFORD: July 24.—Supply has been good during the past week, and a brisk trade has been done at the following quotations:—Cabbages, 2s. to 3s. per tally; Turnips, 2s. to 3s. per dozen bunches; Mangels, 18s. to 24s. per ton; Apples, foreign, 8s. 6d. to 10s. per case; Watercress, 6d. per dozen; Peas, 4s. to 5s. 6d. per bag; Currants, black, 3s. 6d. to 4s. per half sieve; red, 3s. 6d. to 4s. do.; Gooseberries, 2s. to 3s. 3d., do.; Carrots, 1s. 6d. to 2s. per dozen bunches.

GARDEN REQUISITES,

of best quality, as supplied to the Royal Gardens, &c.

BEST COCOA-NUT FIBRE REFUSE, 10 sacks for 10s., 15 for 14s., 20 for 18s., 30 for 25s.; two ton truck, 28s. Free on rail.

RUSSIA MATS, from 12s. to 18s. per dozen.

FINEST ORCHID PEAT, 7s. per sack.

BEST BROWN FIBROUS PEAT, 5s. per sack, 5 for 22s. 6d.

BEST BLACK FIBROUS PEAT, 4s. 6d. per sack, 5 for 20s.

COARSE SILVER SAND, 1s. 6d. per bushel; 14s. 3-ton; PURE LEAF MOULD, 3s. per sack. (25s. per ton,

YELLOW FIBROUS LOAM, 3s. per sack.

BEST MUSHROOM SPAWN, 4s. per bushel.

RAFFIA, LABELS, STICKS, from 1 ft. to 5 ft., BAMBOO

CANES, 3/4 ft. to 12 ft., VIRGIN CORK, CHEMICAL

MANURES, NETTING, &c.

SPHAGNUM MOSS, 6s. per sack. CHARCOAL, 8s. per sack.

SPECIALITE TOBACCO PAPER AND CLOTH, 10d. per lb.; 28 lb. for 21s.

Price List free by post.

W. HERBERT AND CO., Hop Exchange Warehouses, South-

wark Street, London, S.E.

BEESEON'S MANURE.—The Best and

Cheapest Fertiliser for all purposes. Write for Circular

containing the Leading Gardeners' and Market Growers' Reports. Sold in Tins, 1s., 2s. 6d., 5s. 6d., and 10s. 6d. each,

or 1 cwt. Bags, sealed, 13s. By all Seedsmen, or apply direct to

W. H. BEESON, Carbrook Bone Mills, Sheffield.



Supplied by us to Royal Gardens, Kew, the Crystal Palace, &c.

For Destroying Weeds on Carriage Drives, Garden Walks,

Stable Yards, &c. Prices: per gallon, 2s., tin included;

5 gallons, 1s. 6d. per gallon; 10 to 20 gallons, 1s. 4d. per gallon,

carriage paid. Special quotation for larger quantities. One

gallon makes 26 gallons.

Mr. W. G. HART, Superintendent of the Crystal Palace

Gardens, says:—We were so satisfied with your Weed Killer

and its price, that we have used it absolutely. I have every

confidence in recommending it."

Sole Proprietors and Manufacturers,

THE AGRI-HORTICULTURAL CHEMICAL COMPANY,

TONBRIDGE, KENT.

SOLD BY SEEDSMEN AND FLORISTS.



Sold in Packets, 6d. and 1s. each, and in

SEALED BAGS ONLY,

7 lb. 14 lb. 28 lb. 56 lb. 1 cwt.

2/6 4/6 7/6 12/6 20/-

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TEMPLE MILL LANE,

STRATFORD, LONDON, E.

C. & L. also supply Crushed Bones, Bone Dust, Peruvian Guano,

Sulphate of Ammonia, and Nitrate of Soda, in best qualities only.

GISHURST COMPOUND, used by leading

Gardeners since 1859 against Red Spider, Mildew,

Thrips, Green Fly, and other Blight. 1 to 2 ounces to the

gallon of soft-water; 4 to 16 ounces as winter dressing for Vines

and Orchard-house Trees; and in lather from the cake against

American Blight. Has outlived many preparations intended

to supersede it. Boxes, 1s., 3s., and 10s. 6d.

GISHURSTINE keeps Boots dry and soft on

wet ground. Boxes, 6d. and 1s., from the Trade.

Wholesale from PRICE'S PATENT CANDLE COMPANY

(Limited), London.

NETTING.—Buy your Netting direct from

the Makers. Write for sample piece, of our best quality,

waterproof, tanned and oiled, 4 yards by 50 yards, 8s.; second

quality, 5s. 6d. Any size made to order. Trade supplied.

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GARDEN REQUISITES.—Sticks, Labels, Virgin Cork, Ruffia, Mats, Bamboo Canes, Rustic Work, Manures, &c. Cheapest Prices of **WATSON AND SCULL**, 90, Lower Thames Street, London, E.C.

THOMAS'S TRAINING TRELLISES.

No. 51. GALVANISED AFTER MADE.



For training Peas instead of sticks. Training plants to walls, &c. IN PANELS.

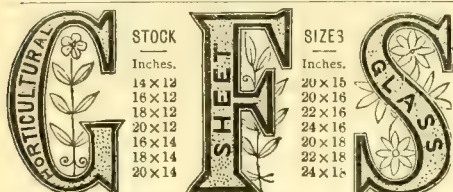
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6 feet by 4 feet ... 3s. each.
6 feet by 5 feet ... 4s. each.
6 feet by 6 feet ... 5s. each.

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6 in. 4 in. 3 in. 2 in. 1½ in. mesh.
2d. 3d. 4d. 4d. 4d. per foot super.

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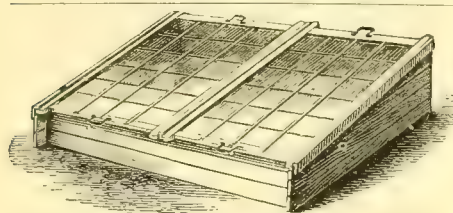
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A large stock of similar current sizes of 15-oz. glass in 200 feet boxes.

English Glass, cut to buyer's sizes, at lowest prices, including free delivery in the country in quantities.

GEORGE FARMILOE & SONS,

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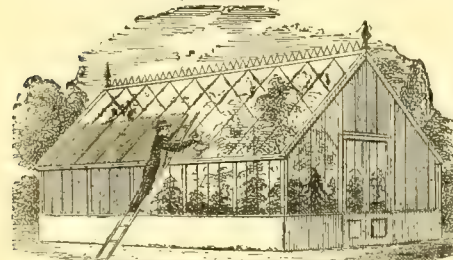
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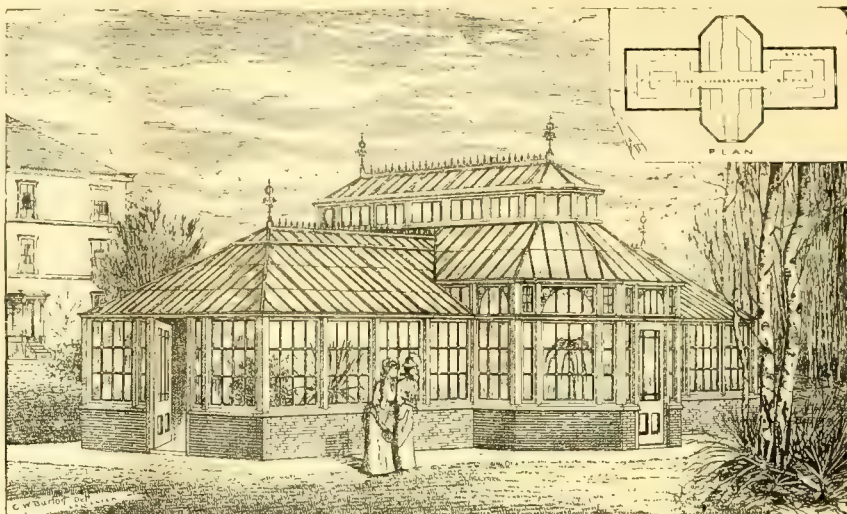
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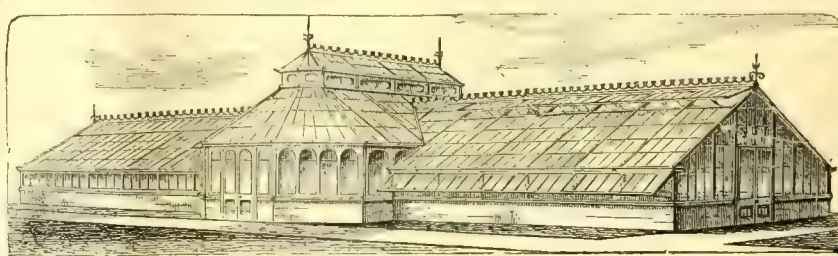
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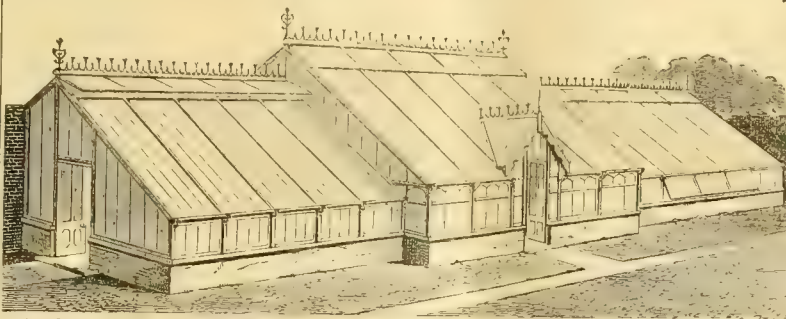
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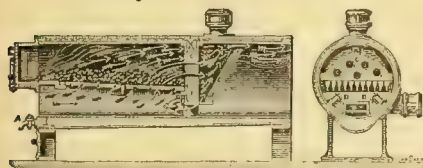
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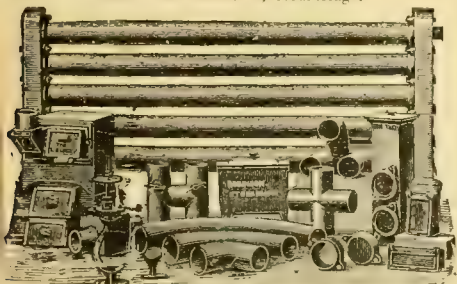
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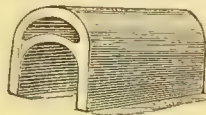
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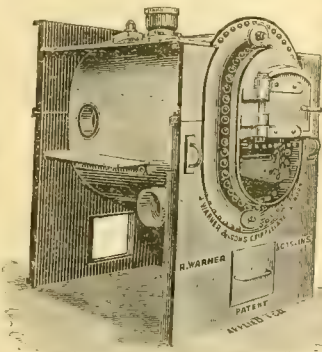
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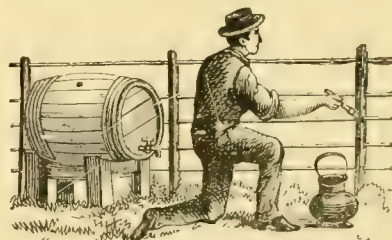
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The GARDENERS' CHRONICLE

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On view morning of Sale, and Catalogues had.

Friday, August 17.

IMPORTANT UNRESERVED SALE of the Second and Remaining Portion of the well-known **COLLECTION OF ESTABLISHED ORCHIDS**, formed by F. A. Philbrick, Esq., Q.C., of Oldfield, Bickley, who is relinquishing the cultivation of Orchids.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions to **SELL** by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on **FRIDAY**, August 17, at half-past 12 o'clock precisely, without reserve, the Second and Remaining Portion of this well-known **COLLECTION OF ESTABLISHED ORCHIDS**.

The plants are in exceptionally healthy condition, and this Sale includes a remarkable collection of promising *Odontoglossums* (unflowered, several celebrated varieties having appeared among them), as well as some of the finest forms of *Cattleyas*, especially *Trianae* and *Gigas*, and many choice *Masdevallias*.

Among the principal items may be mentioned:—

<i>Aëdis affine roseum</i>	<i>Masdevallia Veitchii gigantea</i>
" <i>Godefrøye</i>	" <i>superba</i>
" <i>Houlletianum</i>	" <i>Chelidonia</i>
" <i>Vanda suavis Veitchii</i>	" <i>splendida</i> } hybrids
<i>Zygopetalum Dayii</i>	<i>Cattleya Mendeli grandis</i>
" <i>Gammatophyllum Ellisii</i>	" <i>superba</i>
<i>Cirrhopetalum Cunninghamii</i>	" <i>gigas Sanderiana</i>
<i>Angraecum citratum</i> , special form	" <i>Mossie kernesina</i>
<i>Cattleya Trianae alba</i>	" <i>Burton Constable var.</i>
" <i>Aurora</i>	" <i>aurantiaca</i>
" <i>Euterpe</i>	" <i>Warneri rubra</i>
" <i>Hardyana</i>	<i>Phalenopsis amabilis</i> , including
" <i>Russelliana</i>	" <i>pieta</i> and many
" <i>superbissima</i> , and other superb vars.	" <i>fine varieties</i>
<i>Laelia elegans</i>	" <i>Marie</i>
" <i>Stelzneriana</i>	" <i>Dayana</i>
" <i>Schilleriana</i>	" <i>Lowii</i>
" <i>anceps Schroderiana</i>	" <i>Borneo varieties</i>
" <i>Stella</i> , and other white forms	" <i>sumatrana</i>
<i>Masdevallia Harryana licta</i>	" <i>Sanderiana</i>
" <i>splendens</i>	" <i>Stuartiana</i>
" <i>sanguinea</i>	" <i>Schilleriana</i> (many grand forms)
" <i>magnifica</i>	" <i>Casta</i>
" <i>atro-sanguinea</i>	" <i>leucorrhoda</i>

ODONTOGLOSSUMS.

Alexandre, magnificent varieties, including *roseum*, *Guttatum flavum*, *Hor-manni*, *Ruckertianum*. The plants may be inspected on the Premises on presentation of Catalogue, and will be on view in the Sale Rooms on the morning of Sale. Catalogues may be obtained of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

Kingston, Surrey.

By order of the Executors of the late Mr. Thomas Jackson. **IMPORTANT SALE OF VALUABLE FREEHOLD AND LEASEHOLD PROPERTIES.**

Preliminary Notice.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions to **SELL** by AUCTION, at the Mart, Tokenhouse Yard, London, E.C., on **THURSDAY**, August 30, (first in one lot, and if not thus sold, then in separate lots), the **VALUABLE FREEHOLD ESTATE** known as the **Kingston Nursery**, Kingston, containing a total area of 2 acres, with the modern detached Freehold Residence, 22 Greenhouses and numerous Outbuildings, and the Goodwill of the old-established Nursery and Seed Business, the desirable Freehold House and Shop in Thames Street, Kingston, now utilised as a Seed Shop, with 2 Cottages and Stabling adjoining, also the several Leasehold Nurseries known as the **Kingston Hill Nursery**, containing an area of 12 acres 3 rods 10 perches, the **Nursery in Park Road**, Norbiton, area 10 acres, and the **Long Ditton Nursery**, Long Ditton, area 15 acres 0 rods 13 perches.

The Purchaser or Purchasers will have the option of taking the Stock in the respective lots at a valuation to be made in the usual way.

May be viewed, Particulars and Plans obtainable at the Mart: of G. C. SHERRARD, Esq., Solicitor, 26, Lincoln's Inn Fields, W.C.; and of the Auctioneers and Surveyors, 67 and 68, Cheapside, London, E.C., and Leytonstone.

Dutch Bulbs.

SPECIAL TRADE SALES.

MESSRS. PROTHEROE AND MORRIS desire to announce that their **SALES OF DUTCH BULBS** for the ensuing season, will commence on **MONDAY**, August 13, and the first Six Auctions will consist as usual of lots specially arranged to suit the Trade and other Large Buyers.

Messrs. P. & M. will be glad to receive the names and addresses of intending purchasers who may wish to receive Catalogues of these Auctions.

Central Sale Rooms and Estate Office, 67 and 68, Cheapside, E.C.

The Ascot Nurseries, Berks—Preliminary Notice.

MESSRS. PROTHEROE AND MORRIS desire to announce that they have been instructed by the present Proprietor, who is relinquishing the business solely in consequence of continued ill-health, to **SELL** by AUCTION, at the Mart, Tokenhouse Yard, London, E.C., in **SEPTEMBER NEXT**, in one lot, as a going concern, (unless an acceptable offer be made previously), the well-known property situate and being the **ROYAL NURSERIES, Ascot, Berks**, established for so many years, together with a detached Residence, about 40 Greenhouses, numerous Trade Buildings, and 21 Acres of Land. The whole of the extensive collection of Stove and Greenhouse Plants, and General Nursery Stock, will be included in the purchase.

Further particulars may be obtained on application to the Auctioneer, who will be pleased to hear from any gentleman desirous of negotiating for the property by private treaty. Auction and Estate Offices, 67 and 68, Cheapside, London, E.C.

Wednesday, August 15.

SPECIAL SALE OF ORCHIDS IN FLOWER AND BUD. **MR. J. C. STEVENS** begs to announce that his next **SALE OF ORCHIDS IN FLOWER AND BUD** will take place at his Great Rooms, 38, King Street, Covent Garden, W.C., on **WEDNESDAY**, August 15, at half-past 12 o'clock precisely, and he will be glad if gentlemen desirous of entering plants for this Sale will send list not later than Thursday next.

Dutch Bulbs—Trade Sales.

MR. J. C. STEVENS begs to announce that his **FIRST SALES OF DUTCH BULBS** this season will take place at his Great Rooms, 38, King Street, Covent Garden, W.C., on **MONDAY, WEDNESDAY, and SATURDAY**, August 20, 22, and 25, at half-past 12 o'clock precisely each day, and will consist of extensive consignments of first-class bulbs specially allotted to suit the Trade and other large buyers.

On view mornings of Sales and Catalogues had.

The "Woodlands," Cheshunt.

By order of the Executors of the late W. G. Rowlett, Esq. **MESSRS. CRAWTER AND SON** are instructed to **SELL** by AUCTION on the Premises on **TUESDAY**, August 14, at 1 o'clock precisely, the whole of the **Outdoor Effects**, comprising the valuable and choice **COLLECTION OF ORCHIDS**, quantity of **AZALEAS, CAMELLIAS**, magnificent specimen **EPHYLLUMS** and **CAKATIONS**, **POT ROSES**, **STOVE PLANTS**, **FERNS**, **LILUM AURATUM**, **GARDEN SEATS**, **WATER BARROW**, a quantity of **TOOLS**, **LAWN MOWER**, **POTS**, **COCOA-NUT FIBRE**, and numerous other effects.

May be viewed day prior to Sale (the Orchids at any time by Cards only), and Catalogues had of Messrs. CRAWTER AND SON, Cheshunt; and 4, Great James Street, Bedford Row, W.C.

WANTED TO HIRE, small NURSERY with Glass. Advertiser has his own Stock. State full particulars to H. RIVETT, Red Hill.

To Grape Growers.—Rare Opportunity.

TO BE SOLD, on exceptionally favourable terms—most satisfactory reasons for disposal—thoroughly genuine and compact **PROPERTY**; numerous Vineries, substantially built, and stocked with the best Vines. Every facility. Good returns have been obtained.

Full particulars on application to Messrs. PROTHEROE AND MORRIS, 67 and 68, Cheapside, London, E.C.

FOR SALE, a FLORIST and JOBBING BUSINESS. Five large Greenhouses, all well heated with hot-water. Long lease and low rent. Price £175 the lease and goodwill. Address, OWNER, 89, Goodrich Road, East Dulwich, S.E.

TO FLORISTS.—A choice Site for SALE, adapted for Glass. Plenty of Water. About 3 Acres. Half hour from Moorgate. No agents. Address **FREEHOLDER**, Messrs. Laughton & Co., 5, St. Benet Place, London, E.C.

To Florists, &c.

TO BE SOLD, the LEASES and GOODWILL of a well established **BUSINESS**; large Nursery covered with Glass, good Shop in main thoroughfare. First-class Jobbing connection. Price £300. Stock at valuation. W. A. CLINGO, 18, Finchley Road, St. John's Wood, N.W.

To the Seed Trade.

TO BE DISPOSED OF, a Retail BUSINESS, with **WHOLESALE TRADE** attached, of many years' standing, situated in a main thoroughfare of the City of London. A good opportunity for a young man of ability and experience. Apply, by letter only. X. Z. Z., Messrs. Moon & Gilks, 15, Lincoln's Inn Fields, W.C.

TO BE LET ON LEASE, or SOLD, a Small MARKET GARDEN, with Glass Houses, new 8-roomed House, with nearly 450 feet run of Glass Houses (for growth of Grapes, Peaches, Cucumbers, Tomatoes, &c.), all new, well fitted, and in excellent condition. About 2 acres freehold, and 2½ acres under agreement. One mile from station, 30 miles from London. Particulars of BENINGFIELD and TIDY, Ware, Herts; and 16, Union Court, Old Broad Street, London, E.C.

South of England.

LARGE GARDEN, 20 Acres, with Twenty Greenhouses and Vineries. £7000 has been spent on the property. Seven years' lease. Two cottages inclusive. £150 a year. ELDRIDGE, Portsmouth.

Durant's Arbour Estate, Ponder's End, Middlesex. To NURSEYMEN, FLORISTS, and OTHERS.

TO BE LET, on Lease, for 21, 60, or 80 years, 1 to 50 acres of excellent **MEADOW LAND**, from £3 to £11 per acre, with the option of the purchase of the freehold within the first 9 years. No tithe or land tax. Apply to A. AND G. GUIVER, Land Agents, &c., Ponder's End, N.B. Several Nurseries established on the estate.

TO LET, in the Midlands, Small, Compact MARKET NURSERY, comprising excellent Dwelling-house and Outbuildings, 4 Glasshouses, all heated with Hot-water, large garden, well stocked with Fruit Trees in full bearing; within easy reach of three markets. Possession at Michaelmas. Rent £45. Good reasons for leaving. Address R. E., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

TO LET, a large GLASSHOUSE and VINERY. A splendid opening for a Florist and Fruit Grower. Address Castle Mills, Idle, near Bradford.

Fifty Nurseries, Market Gardens, Florist and Seed BUSINESSES to be DISPOSED OF.

MESSRS. PROTHEROE AND MORRIS' HORTICULTURAL REGISTER contains full particulars of the above, and can be obtained, gratis, at 67 and 68, Cheapside, London, E.C.

ORCHIDS.

THE LIVERPOOL HORTICULTURAL CO.

(JOHN COWAN), Limited,

Are constantly receiving Importations of

ORCHIDS

from various parts of the World, full particulars of which will be sent on application.

The Company have also a large stock of

ESTABLISHED ORCHIDS

in fine health and condition.

Prices and particulars on application.

THE VINEYARD AND NURSERIES, GARSTON, near LIVERPOOL.

BOUVARDIA, PRESIDENT CLEVELAND, supersedes all other scarlet varieties. Strong plants in 48's, or smaller plants for Parcel Post. Price on application. H. B. MAY, Dyson's Lane Nursery, Upper Edmonton.

FERNS.—FERNS.—Forty hardy roots 1s. 6d., free—12 varieties, Royal (Osmunda), British Maidenhair, Ceterach, Ruta, &c.—E. ANDREWS, Beamster, Dorset.

FERNS—FERNS—FERNS. Fill up your houses cheaply. Thousands of the following in 60's, 10s. and 12s. per 100:—*PTERIS TREMULA*, *PTERIS MAGNIFICA CRISTATA*, *PTERIS CRITICA*, *PTERIS CRITICA ALBO LINEATA*. On rail free, cash with order.

J. E. SMITH, Fern Nurseries, 140, Loughborough Road, Brixton, S.W.

GARDENIAS.—We never had a finer stock of this beautiful Greenhouse Shrub. Specimen Plants, 3 to 4 feet high, from 25s. to 50s. each; half specimens, from 2 to 3 feet, 5s. to 10s. each; smaller plants, good stuff, 30s. per dozen. These are the very best sorts. This is a fine opportunity to stock a place with large plants. E. COLLINS AND SONS, Cumberland Park Nurseries, Willesden Junction, N.W.

STRAWBERRIES. Apply for Descriptive CATALOGUE, Post-free. THOMAS RIVERS and SON, Sawbridgeworth, Herts.

Paul & Son's Trade Offer of RHODODENDRON STOCKS, ready for immediate working, £5 and £8 per 1000. The "Old" Nurseries, Cheshunt, N.

Also NEW ROSES, for Bedding.—H.P. Lady Alice, four First-class Certificates, H.P. Queen of Autumn, now in bloom. All the New French and English Roses of 1888 Good plants in pots. PAUL and SON, The "Old" Nurseries, Cheshunt, N.

SPECIMEN PLANTS CHEAP.

1 pyramid *EURYA LATIFOLIA VARIEGATA*, 7 feet, well furnished.
1 *YUCCA ALOIFOLIA VARIEGATA*, 6 feet 6 inches.
1 *YUCCA QUADRICOLOR*, 5 feet (splendid plant).
1 *SEAFORTHIA ELEGANS*, 9 feet.
2 *ANTHURUM CRYSTALLINUM*, half specimens.
For price of each, or lot, apply to WILLIAM OWEN, Hartford, Cheshire.

GARDENERS' ORPHAN FUND.

CASH STATEMENT, June 30, 1888.

RECEIPTS.

To Donations, General, including Covent Garden Fête, <i>see below</i> ..	£1131 19 9
„ Subscriptions, General, including Covent Garden Fête, <i>see below</i> ..	302 6 0
„ Local Secretaries' Donations and Subscriptions ..	382 5 2
„ Dividend upon £500 Consols ..	4 17 10
	£1821 8 9

*COVENT GARDEN FETE.

Receipts:—Donations and Subscriptions .. £237 11 4

Payments:—Expenses of Fête .. 74 8 7

£163 2 9

Having inspected the Securities, and examined the Books and Vouchers supplied to us, we Certify that the above Cash Account is correct.

Dated 6th July, 1888.

Signed:—WM. SHARP, CHARTERED ACCOUNTANT } Auditors.
CHAS. HENRY SHARMAN .. }

PAYMENTS.

By Printing and Stationery ..	£108 15 9
„ Postages ..	59 11 3
„ Collecting Boxes ..	8 10 0
„ Advertising ..	0 14 0
„ Addressing Circulars ..	10 19 4
„ Hire of Room for Meetings ..	5 5 0
„ Local Secretaries' Expenses ..	2 13 7
„ Secretary's Clerk's Salary ..	10 0 0
„ Bank Charges ..	0 13 7
„ Sundry Expenses (Petty Cash) ..	2 16 5
„ Purchase of £500 Stock, 2½ Consols £508 2 6	
„ Ditto do. do. 495 0 6	
	1003 3 0
„ Balance in hand of Secretary on account of Petty Cash ..	3 12 2
„ Balance at Bank ..	604 14 8
	£1821 8 9
„ Balance brought forward ..	£608 6 10

CALNE HORTICULTURAL SOCIETY.—

The TWENTY-THIRD ANNUAL EXHIBITION will be held in Bowood Park on the 23rd inst., when Prizes to the value of ONE HUNDRED and SEVENTY POUNDS will be offered. Amongst others are the following, open to all England:—

- 12 Vars. Stove and Greenhouse Plants, £15, £10, £5.
- 9 Ornamental Foliage Plants, £10, £5, £2 10s.
- 8 Exotic Ferns, £4, £2 10s., £1 10s.
- 36 Roses, Cut Flowers, Cup or £5, 50s., 30s.

BATH AUTUMN SHOW, held at time of visit

of "The British Association," WEDNESDAY and THURSDAY, September 5 and 6. Amongst the Prizes offered are for—
12 Foliage Plants, 1st, £6; 2nd, £4; 3rd, £2.
12 Stove or Greenhouse Plants, 1st, £12; 2nd, £8; 3rd, £4.
8 Dishes of Fruit, 1st, £5; 2nd, £3; 3rd, £2.
12 Bunches of Grapes, six varieties, 1st, £10; 2nd, £6; 3rd, £3.
And 7 other Classes for Grapes in varieties. Prizes in proportion. Special Classes for Hybrid Orchids, Ferns, and other Plants. Entries Close September 1. For Schedule, apply to

14, Milsom Street, Bath.

BENJ. PEARSON, Sec.

ROYAL CALEDONIAN HORTICULTURAL SOCIETY.

Instituted 1809. (Incorporated by Royal Charter in 1824.)

Waverley Market, Edinburgh, on

WEDNESDAY and THURSDAY, September 5 and 6.

FRUIT.

1. Collection of twelve dishes of Fruit—to consist of three dishes of Grapes (not less than three varieties), two dishes of Peaches, and one dish of each other kind of fruit; Pine-apples and Bananas excluded.—1st, 120s.; 2nd, 80s.; 3rd, 40s.

(These prizes are presented by the Corporation of the City of Edinburgh.)

2. Collection of eight dishes of Fruit—not more than two dishes of Grapes (black and white), and one dish of each other kind of fruit.—1st, 60s.; 2nd, 40s.; 3rd, 20s.

3. Collection of twelve dishes of Hardy Fruit—not more than two dishes (distinct varieties) of each kind, and all must be grown out-of-doors.—1st, 50s.; 2nd, 35s.; 3rd, 15s.

4. Collection of twelve dishes of Fruit, grown in an orchard-house—not more than two dishes (distinct varieties) of each kind; Grapes excluded.—1st, 50s.; 2nd, 30s.; 3rd, 15s.

5. Eight bunches of Grapes, at least four varieties (1st prize presented by Wm. Thomson & Sons, Clovenfords).—1st, 200s.; 2nd, 100s.; 3rd, 60s.; 4th, 30s.

6. Four do. do., distinct varieties.—1st, 60s.; 2nd, 40s.; 3rd, 20s.

7. *Two do. do., Muscat Alexandria (1st prize presented by Convener White).—1st, 40s.; 2nd, 20s.; 3rd, 10s.

BRADFORD and DISTRICT.—The SECOND

ANNUAL EXHIBITION of the above Society will take place on NOVEMBER 14 and 15, when upwards of ONE HUNDRED POUNDS will be offered in Prizes. Schedules might be obtained on application to

Mr. JOHN COLLIER, Hon. Sec.

10, Mannheim Road, Toller Lane, Bradford.

ROYAL SCOTTISH ARBORICULTURAL SOCIETY.

The THIRTY-FIFTH ANNUAL GENERAL MEETING of the Royal Scottish Arboricultural Society will, by the kind permission of the Regius Keeper, Professor Bayley-Balfour, be held in the Class Room at the Royal Botanic Gardens, Inverleith Row, Edinburgh, on TUESDAY, August 7, 1888, at 11 A.M.

W. J. MOFFAT, Secretary and Treasurer.

5, St. Andrew Square, Edinburgh.

The ANNUAL DINNER will be held in the Waterloo Hotel, Waterloo Place, Edinburgh, on TUESDAY, August 7, 1888, at 6 P.M. Members who intend being present will oblige by sending notice to the Secretary before Friday, August 3.

The ELEVENTH ANNUAL EXCURSION of the Society will take place over several Estates in Roxburghshire on August 8 and 9. It is particularly requested that Members intending to join the Excursion will send notice to the Secretary not later than Friday, August 3.

All particulars can be had on application to the Secretary.

THE GARDENERS' ORPHAN FUND.

DONATIONS and SUBSCRIPTIONS

WILL BE THANKFULLY RECEIVED BY

A. F. BARRON, Hon. Sec.,

Royal Horticultural Society's Gardens, Chiswick, London, W.

To Landscape Gardeners and Contractors.

THE RAMSEY TOWN COMMISSIONERS invite TENDERS for carrying out the work in connection with the MOORAGH PARK and LAKE. The work comprises the Construction of Lake, the Forming of Roads and Walks, Laying-out and Planting of Park, and the Erection of Shelters, Keeper's Lodge, &c., in accordance with Plan and Specification, which may be seen at their office. Specification may be had on application to the undersigned after July 5. Sealed Tenders, endorsed "Tender for Mooragh Park," to be sent in to the undersigned on or before the 13th day of August next.

The Commissioners do not bind themselves to accept the lowest or any Tender.—By order, JAMES BELL,

Clerk to the Ramsey Town Commissioners.

Town Commissioners' Office, Ramsey, Isle of Man.—June 28, 1888.

WANTED TO DISPOSE OF, a few nice healthy Plan's of SEAFORTHIA ELEGANS and PTYCHOSPERMA ALEXANDRE, from 5 to 10 feet high. They are well adapted for a cool conservatory, entrance hall, or sub-tropical garden. Prices very moderate. May be viewed at W. HOWARD'S, Old Southgate, N.

FERNS A SPECIALTY.

The largest, most complete, and profusely ILLUSTRATED CATALOGUE of FERNS ever published, containing over 120 Illustrations, and much valuable practical information on the cultivation of Ferns, &c. 1s. 6d. post-free. Smaller Catalogue of over 1300 species and varieties free on application.

W. & J. BIRKENHEAD, FERN NURSERY, SALE, MANCHESTER.

Come and See.

OUR BEGONIAS.

Pray remember that for quality, distinctness, display, and immense stock, no other collection bears comparison. They are the finest ever seen, which is confirmed by the published statements of three of the greatest experts.

Journal of Horticulture, July 12, 1888.

"I dropped in at Mr. Cannell's. It is impossible to exaggerate the beauty of some of the flowers which I saw. I had only time to run through the grand Pelargonium house, the Ivy-leaved Pelargonium, and the single and double Begonias; but what a blaze of beauty there was! Then when one recollects the old Ivy-leaf Pelargonium, and sees the wondrous trusses of double flowers and beautiful colours which are yet to come out, we wonder what will follow. The same of Begonias. The marvellous single and double varieties are bewildering in their beauty. There was also a grand new Bellotrope, finer than anything I had seen. Had I been able to remain I should doubtless have seen many wonderful things, but I saw enough to convince me that the Home of Flowers is in no danger of losing its reputation."

The Gardening World, July 28, 1888.

SOMERSETSHIRE RECTOR says:—"I saw Begonias at Swanley. Their beauty well repays a visit; the shape, colour, and habit are excellent. If anything is wanted where everything is so near perfection it is a more upright flower-stalk, which a few more seasons will certainly produce."

The Horticultural Times, July 28, 1888.

F. D. LYON, Esq., says—"At Messrs. Cannell's establishment ALONE in all England can Begonias and Zonals be seen grown to perfection. With other collections of these families comparisons are odious."

H. CANNELL & SONS, The Home of Flowers, Swanley, Kent.

H. B. MAY'S SPECIALTIES.

FERNS. All the leading and most useful sorts; immense quantities in various sizes; also many new and rare species and varieties.

TREE CARNATIONS.

Including Mille, Carle, A. Algateire, Miss Joliffe, Dr. Raymond, Andalusia, Lucifer, and all the best sorts. The plants are unusually fine this season.

CROTONS.

A great variety, all beautifully coloured.

CLEMATIS.

A fine stock of all the best sorts.

IVIES.

Madriensis variegata, Lee's New Silver, rhomboidea obovata, and other popular sorts.

PRIMULAS, DOUBLE WHITE.

An immense stock; plants very healthy and vigorous. Special low prices to the Trade. An inspection respectfully invited.

H. B. MAY, Dyson's Lane Nursery, Upper Edmonton.

Stations: Angel Road and Silver Street, G.E.R.

DICKSONS' GENUINE FARM AND GARDEN SEEDS

FOR PRESENT AND LATER SOWING.

Carriage Free by Post or Rail.

PRICED CATALOGUES POST-FREE.

DICKSONS

(LIMITED).

ROYAL SEED WAREHOUSE, CHESTER.



CLEARANCE SALE

OF STRONG HEALTHY PALMS.

Latania borbonica, Seaforthia elegans, Phoenix reclinata, &c., 20 to 24 inches high, 16s. per dozen. Same kinds, 2 ft. 6 in. to 3 ft. high, 3s. to 5s. each. Handsome Palms for decoration, 5 ft. 6 in. to 6 ft. high, 70s. per pair. Small Palms, 10 to 12 in. high, 4s. per dozen.

Kentias, from 3s. to 21s. each.

Fine Dracenas, from 2s. to 30s. each.

Over 50,000 Palms to select from.

B. OWEN, The Palm Gardens, Stamford Hill, N

A Visit solicited.

WEBBS' SEEDS



From Mr. F. HARRISON, Gardener to the Right Hon. the Earl of Derby: — "Webbs' Emperor Cabbage was grown side by side with four other kinds, and was considered to be the best of the lot. It is a grand Cabbage."

WEBBS' EMPEROR CABBAGE,

6d. and 1s. per packet: 1s. 6d. per ounce.
 EARLY NONPAREIL CABBAGE ... 8d. per ounce.
 ENFIELD MARKET CABBAGE ... 6d. "
 EARLY RAINHAM CABBAGE ... 8d. "
 RED DUTCH or PICKLING CABBAGE ... 8d. "

ONION. Per pkt. s. d.
 WEBBS' RED GLOBE TRIPOLI ... 6d. 1 0
 LARGE FLAT RED TRIPOLI ... 6d. 0 9
 GIANT ROCCA ... 6d. 1 0
 WHITE LISBON ... 0 6

Free by Post or Rail.

Seedsmen by Royal Warrants to H.M. the Queen and H.R.H. the Prince of Wales.

WORDSLEY, STOURBRIDGE.

SEEDLING PLANTS OF CHOICE FLORISTS' FLOWERS.

WE HAVE MUCH PLEASURE in offering the following in strong, healthy, transplanted young stuff, from our superb strains of Choice Florists' Flowers. Free and Safe by Post at Prices quoted.

Per dozen.—s. d.
 AURICULAS, Alpine, very choice, strong young plants, for blooming next season ... 2 6
 CALCEOLARIAS, herbaceous, splendid strain of beautifully spotted and tигged flowers ... 2 6
 CARNATIONS and PICOTEEES, from choice named flowers ... per 100, 10s. 6d. 1 6
 CARNATIONS, yellow ground varieties ... 3 6
 CINERARIA hybrida, from a grand strain, per 100, 10s. 6d. 1 6
 "Large-flowered, dwarf, very fine, per 100, 17s. 6d. 2 6
 HOLLYHOCKS, Chater's superb double, per 100, 16s. 2 6
 "Chater's superb double, extra strong plants ... 3 6
 PRIMULA sinensis, choicest red or white, per 100, 10s. 6d. 1 6
 "sinensis, splendid mixed, including nearly 20 superb varieties ... per 100, 10s. 6d. 1 6
 "sinensis, splendid mixed, extra strong plants, per 100, 16s. 2 6
 "sinensis alba magnifica, splendid pure white ... 3 6
 "sinensis, Crimson King, magnificent colour ... 3 6
 "sinensis, Fern-leaved, choice mixed, per 100, 10s. 6d. 1 6
 "sinensis, double-flowered, mixed, limited quantity, 6 for 2s. 3 6
 PRIMULAS, double, pure white, splendid for furnishing an abundance of cut bloom throughout the autumn and winter. Well rooted strong young plants from 3-inch pots, per 100, 45s.; per dozen, 6s.; 3 for 1s. 9d.

DANIELS BROS.,
TOWN CLOSE NURSERIES,
NORWICH.

TEA ROSES.

GARAWAY CO. offer 12 of the above, best named sorts, including MARECHAL NIEL and NIPHETOS, in 5-inch pots, for 10s. cash.

GARAWAY CO.,
Durdham Down, Clifton, Bristol.

ROSES IN POTS;
all the best New and Old English and Foreign sorts, from 18s. to 36s. per dozen.

Descriptive List free on application.

RICHARD SMITH & CO.,
Nurserymen and Seed Merchants,
WORCESTER.

STRAWBERRIES.
CHARLES TURNER

Can now supply strong Runners of all the leading varieties.
Descriptive LIST sent on application.

THE ROYAL NURSERIES, SLOUGH.

BULBS FOR EARLY FORCING.

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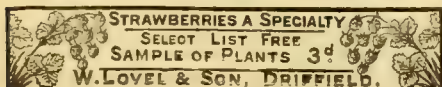
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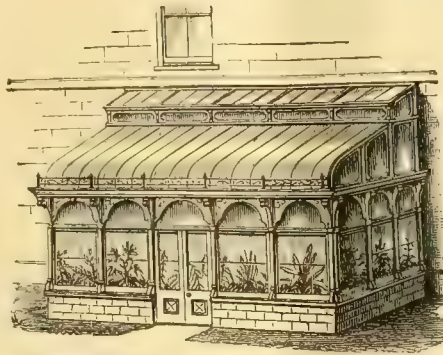
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ARGENTEUM,
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THE
Gardeners' Chronicle.

SATURDAY, AUGUST 4, 1888.

EARLY ENGLISH GARDENING.
II.

IT may not be uninteresting, at this point, to consider the laws and enactments that have been framed and passed in this country with reference to gardening. In this respect it has enjoyed the most perfect immunity, and presents a very remarkable contrast to an equally vital phase of life, viz., literature. Widely differing as they do, at a superficial glance, these two attributes of life and progress had a common origin, and the growth of the one found its reflection in the advancement of the other. But whilst one has been subjected to the "slings and arrows" of every worthless person who held office by virtue of his unscrupulous disposition, the other—that of gardening—has evolved from a primitive state, and developed into a science without the superfluous intermeddling of regal licensers and biased partisans. From the time of the Magna Charta down to the death of Queen Anne no more than two or three regulations were passed which have any bearing upon our present subject. In 37 Henry VIII., c. 6, sect. 3, for example, an Act called forth "by men of evil and perverse disposition," it is enacted that if any person "barke any Aple trees, Peare trees, or other frute trees," a fine of £10 sterling should be inflicted. This sum would to-day be equivalent to about £50, so that such and collateral offences were neither few nor trivial. In the second example the much-abused middleman plays a prominent part. In the Act relative to victuallers and handicraftsmen, "not content with moderate and reasonable gayne," and who conspired to sell their "vittells at unreasonable prices" (2 & 3 Edward VI., c. 15), the first section ordained that the "coasterdmongers or frewterers" should not sell their commodities but at certain prices. For the first offence the fine was placed at £10, or twenty days imprisonment, with the luxury of a bread and water diet; for

the second, £20, or the pillory; and for the third, £40, or the pillory, with the extra penalties involved in the loss of an ear, and being covered with infamy.

From this reign until the early years of the fourth George, nothing of any importance transpired in the legislature that affected gardening. By 7 and 8 George IV., c. 29, sect. 42, persons stealing or destroying, or damaging with such intent, any plant, root, fruit, or vegetable production, growing in any garden, orchard, nursery-ground, hothouse, greenhouse, or conservatory, are punishable summarily by one justice, with imprisonment for six months, with or without hard labour, or a fine not exceeding £20 over and above the value of the article stolen, or injury done; and for a second offence are guilty of felony, and punishable as in cases of simple larceny. And by sect. 43 of this same Act, persons stealing any cultivated root or plant, used for food for man or beast, or for medicine, distillery, dyeing, or for any manufacture, growing in land, open or inclosed, not being a garden, orchard, or nursery-ground, are punishable summarily before one justice; and for a subsequent offence may by two justices be ordered to be whipped.

Such, then, with one or two minor exceptions, are the laws and regulations relative to gardening, in the framing of which, it will be inferred, our forefathers underwent no great mental strain, for the very fundamental principles of the subject were so obvious, and so essential to the well-being of everyday life, that no extraordinary efforts were needed to perceive the wisdom of these laws. It is upon abstract theories and visionary data that our wise legislators become the most controversial, and fall soonest.

Gardening, like literature, may be regarded as the effect, rather than the cause, of centralisation. It would be a profitless task to seek for historical data much beyond the boundaries of towns and cities. And so it follows that the centres of civilisation are also the centres of gardening. The Universities in particular, took the lead in this respect. An historian of Cambridge has pointed out that a garden was laid out and planted so soon as possible after the foundation of the house, but utility, not ornament, was the motive at work. At King's Hall, Cambridge, in 1338-39, only three years after Robert de Croyland had sold his property to King Edward III., the wages of the gardener (*serviens in gardino*) occur in the accounts, with charges for nailing up and pruning the Vine, which was probably trained over the house. In subsequent years similar charges are frequent. In 1362-63 the ground between the college and the river was laid out as a garden, and a workman is paid at the rate of 3d. a day, four days, to make the beds (*herbaria*); but, with the exception of a charge for "Persily sed" in 1341-42, and for Saffron in 1383-84, the accounts throw but little light on what was planted in them (Willis and Clark's *Architectural History of Cambridge*, iii.). At Peterhouse, the account roll of 1374-75 shows that the kitchen garden contained, *inter alia*, Parsley, Cress, Garlic, Leeks, Saffron, and vegetables in general.

The work of "Thomas Hyll, Londoner," apparently kept all others out of the field until in 1577, Henry Binneman, or Bynneman, the publisher, issued *The Gardeners' Labyrinth*, which professed to contain "a discourse of the gardener's life, in the yearly travels to be bestowed upon his plot of earth," the choice of seeds and the "apte" times of sowing, and so forth. The information was gathered out of the most approved writers, from Pliny to Galen, and from Apuleius to

Hesiodus, by Didymus Mountain, and was edited by Henry Dethick. This very remarkable book, which appeared nearly twenty years before Gerard's stupendous work, is divided into two parts, each having separate titlepages and pagination, but with continuous signatures. The first, dealing with the subject generally, is in eighty-four pages, and the second, which is much more specific in its information, 180, excluding the indicatory "tables." It is dedicated to Sir William Cecil, and the copy now before us was formerly the property of Sir Joseph Banks. The first part contains eight quaint illustrations, but, with an economy which is beautiful in its utilitarian simplicity, one of these does duty no fewer than three times in the course of eighty pages, whilst another appears twice! the two full-page illustrations are most extraordinary, and well deserve to be reproduced if only to indicate the position of horticultural theorists three centuries ago. One illustrates "the maner of watering with a pumpe by troughes in a garden," and the other shows "the maner of watering with a pumpe in a tubbe," and of the two methods we shall not attempt to decide which is the more insane! To this first part, also, there are a dozen plans of various mazes and "knottes." The second and larger portion of this book only contains five illustrations besides the pictorial titlepage, and of these only one is a plant, viz., the Blessed Thistle. *The Gardeners' Labyrinth* is printed in black-letter type, and an edition of it was published by A Islip in 1594, and another by H. Ballard in 1608. *W. R.*

(To be continued.)

NEW OR NOTEWORTHY PLANTS.

A LARGE FLOWERED NEW SPECIES OF TEA ROSE (*ROSA GIGANTEA*, Crépín).

In the report of the July meeting of the Belgian Botanical Society M. Crépín gives a full account of a supposed very fine new species of Tea Rose, which has been discovered by General Collett on the mountains between Birma and Siam. It has a pure white flower 5 inches in diameter, and differs from the common *Rosa chinensis*, Jacq. (*R. indica*, Auct.) by its single-flowered inflorescence, entire outer sepals, unarmed floriferous axis, and very large flower. It may prove to be an extreme variety of *R. chinensis*, but at any rate cultivators should look after it. It is fully described in M. Crépín's paper under the name of *Rosa gigantea*, Collett MSS.

CATTLEYA LABIATA GASKELLIANA (hort. Sand.)
ALBENS, Rehbf. f.

I first received a specimen of this Orchid through the kindness of Professor Wittmack, of Berlin, the Editor of Regel's *Gartenflora*. It is described in the volume of the current year, and represented on plate 1274. It was raised by Mr. Franz Bluth, a distinguished orchidist of Berlin. Its origin was Sanderian. Notwithstanding the dislike which I usually have to pronounce an opinion on single *Cattleya labiata* flowers, I was finally convinced that this must be a *Gaskelliana*, wanting in its chief ornament—the characteristic blotch which is usually seen on the top of the lip, and I was right, as I see by a specimen of the same plant kindly sent me by Messrs. H. Low & Co. It originated from *Cattleya Gaskelliana*. The flower is of a very pale rose colour, and there is much yellow round the lip, and some scarcely recognisable brown lines are seen above the yellow. It is a most lovely variety. *H. G. Rehbf. f.*

CYPRIPEDIUM BELLATULUM AND *C. EGREGIUM*.

Messrs. H. Low & Co. have kindly sent me half-a-dozen very fine flowers of these plants, all having dark blackish-purple, sometimes quite black, spots on

the sepals, the lateral sepal being large and deflexed. The lip is usually narrow, whereas in *M. Godefroy-Lebeuf's* types of *Cypripedium Godefroyæ* it was hemispherical. All the staminodes are long and narrow, as in the first-named flower, but they are never triangular. One of these plants is most interesting, having a short nearly trilobed sepal and light purple spots, much resembling those on the type. Curiously enough, the spots in this variety are so light that they do not show on the other side of the sepals and petals. I propose to name it *Cypripedium bellatulum egregium*; it will be quite a treasure for our *Cypripedium* growers (s. v. v.). *H. G. Rehbf. f.*

HEUCHERA SANGUINEA.

THIS is one of the newer introductions, appropriately marked with a star as something especially good, in Nicholson's excellent *Dictionary of Gardening*, vol. ii., p. 140, figured in the *Garden*, vol. xxvi., p. 360, and in the *Botanical Magazine*, t. 6929. It is a low growing perennial, allied to the Saxifrages. Its general character is sufficiently indicated in our sketch (fig. 13, p. 125). The flowers are of a rich red colour; the leaves dark green and slightly marbled with a lighter tinge. It is a charming plant for the rockery or for the cool greenhouse, and was introduced from the Pacific slopes of Arizona and New Mexico by Mr. Ware. It was first made known to science by the late Dr. Engelmann. For the opportunity of illustrating the plant we are indebted to Mr. Gilbert Davidson, of Annanford.

REMARKS ON THE FRUIT CROPS, 1888.

[For Tabulated Summary, see p. 95.]

SCOTLAND.

ABERDEENSHIRE.—Fruit crops of all sorts suffered from the severe frosts in April and May. Small fruits blossomed abundantly, and, although much injured, are in most cases a fair average crop; Victoria Plums are a large crop, other sorts rather poor. Pears very poor. Cherries on some trees a good crop, others very few. Apples are a fairly good crop; but so late that only early sorts are likely to come to maturity. *J. Forrest, Haddo House.*

— I am sorry to say that the crops of fruit do not by any means look favourable at present. Owing to the cold spring everything is about three weeks later than usual, while on May 29 we had 10° of frost, which in general did much damage, nothing as yet having come to maturity. I can only speak of quantity. Apples look exceptionally productive. Plums—curiously, while the fruits of some are well advanced, many of the trees are now in bloom. *R. Farquhar, Eyvie Castle, Eyvie.*

— The fruit crops in this district are to be very limited, especially the early flowering kinds. Cherries, although abundant in the blossom, have set very badly, owing no doubt to the frosts every night. Plums, even Victorias, are very scarce, and did not show blossom well, and what came was killed by the frosts. Apples on standards are almost a failure, except some of the hardier sorts and some on walls. Gooseberries and red Currants look well; black Currants were very much thinned by the winds. Strawberries are looking well. *J. F. Smith, Duncricht Gardens, Aberdeen.*

BANFESHIRE.—The fruit-tree blossom was retarded, and in some cases much injured, by a continuation of frosty weather, which set in here on February 13, which lasted to the end of March, with sharp frosts at night afterwards, occasionally intervening up to the end of May. Apple blossom, which seemed strong and healthy, suffered most, and the crop is, with few exceptions, a failure. These and Plums on walls are our worst crops. The weather up to this date has been cold and ungenial; everything in consequence is much behind in growth for the period. *J. Webster, Gordon Castle Gardens, Fochabers.*

DUMFRIES.—There were good prospects of a plentiful crop of all sorts of fruit up to June 14, when we were visited by a very severe hailstorm, which

riddled the leaves of vegetables, and stripped trees of fruit and foliage to such an extent that they will not fully recover this season. Since then we have had frequent severe frosts, which have hurt and retarded growth to a considerable extent. *J. Smart, Rachills, Lockerbie.*

EAST LOTHIAN.—The blossom on the fruit trees being a full fortnight late this year, made us think it would be safe from late frosts; but the cold north and east winds all through June, with 6° of frost once or twice, was more than they could stand. A great quantity of Apples and Pears fell off quite black after they were a good size. The leaves of our Apple trees are also very much hurt with the grub. Strawberries and small fruits are plentiful, if we only had good weather to ripen them; but July came in with the thermometer at freezing point, and, with the exception of one or two days last week, quite as unseasonable as June was. I question very much if some of the Apples and Pears, except on walls, will come to maturity unless we get a very fine autumn. *L. Dow, Newbyth Gardens, Prestonkirk.*

FORFAR.—Apples are good on young trees—very few on old. Pears much better than last year, and all small fruits most abundant. Strawberries are late, but it has rained continuously since Sunday morning, and that will carry them over the swelling process. It has been a dry cold season, and although there has often been brilliant sunshine during the day, sharp frosts have followed at night, 34° being registered on June 30, and the temperature was often as low during the month. Since then it has risen considerably. *J. Mitchell, Panmure Gardens, Carnoustie.*

KINROSS.—We have not had so late a season since 1879. Strawberries showed well, but are not setting. We have a full crop of Currants. Gooseberries are under average, but of fine size. Apples and Plums are very scarce. Everything is so late that I cannot honestly form any opinion as to the quality. *J. Fortune, Blair Adam.*

MID LOTHIAN.—The spring was cold and wet, and retarded the flowering period considerably, but since the end of March we have had no frost to injure any fruit blossom. The wood and buds were thoroughly ripened the previous autumn. The blossom opened in great vigour and profusion on most trees, and generally set well, except when cold and damp prevailed during the day. This to a great extent was the cause of the failure of Apples to set early in May, the varieties then in full flower, including such prolific sorts as Keswick Codlin, Duchess of Oldenburg, Warner's King, Manx Codlin, Cellini, Dutch Mignonne, &c., being almost fruitless, while those in full flower in the previous week set in great abundance, including many varieties that are by no means regular bearers in this district. The finest crops are borne by Ecklinville, Gravenstein, Tower of Glamis, Kerry Pippin, King of the Pippins, Oslin, Cambusnethan, Margil, Irish Peach, Yellow Ingestre, Golden Spire, Scarlet Nonpareil, Court of Wick, Golden Pippin, Sturmer Pippin, Early Strawberry, Melrose, Round Winter Nonsuch, Ringer, Loddington, Pott's Seedling, East Lothian Seedling, Beauty of Moray, Dutch Codlin, Frogmore Prolific, Cox's Pomona, and many other less known varieties. The following useful varieties are bearing good average crops:—Blenheim Pippin, Hawthornden, Stirling Castle, Golden Knob, Wellington, Lord Suffield, Cox's Orange Pippin, Worcester Pearmain, Alfriston, Thorle Pippin, Duke of Devonshire, New Hawthornden, Ribston Pippin, Improved Keswick Codlin, Dr. Harvey, Lane's Prince Albert, Yorkshire Greening, Lord Derby, Beauty of Kent, Shepherd's Fame, Maltster, Domino, Lord Grosvenor, Mère de Ménage, Yorkshire Beauty, Early Harvest, Braddick's Nonpareil, Grenadier, Devonshire Quarrenden, Galloway Pippin, and others of more or less merit. All are grown in the open as bushes and standards; and, generally speaking, the finest crops are on standards. Pears are, taken as a whole, the finest crop we have had for many years. The best varieties on walls are:—Marie Louise, Beurré d'Arenberg, Beurré Diel, Easter Beurré, Hacon's Incomparable, Louise Bonne

of Jersey, Glou Morceau, Passe Colmar, Thompson's, Williams' Bon Chrétien, Winter Nelis, Doyenné du Comice, Beurré Bosc, Beurré d'Amanlis, and Red Doyenné. The following are bearing fine crops on standard trees:—Beurré d'Amanlis, Hacon's Incomparable, Catillac, Napoleon, Louise Bonne of Jersey, Williams' Bon Chrétien, Colmar d'Été, Hessel, Marie Louise, Flemish Beauty, Jargonelle, Doyenné d'Été, Croft Castle, Swan's Egg, Josephine de Malines, Easter Beurré, and many others of more or less repute; there being but few fruitless varieties this season that are worth growing for any purpose. The same remarks apply to Plums and Cherries. They are a fine all-round crop. The best standard Plums are Victoria, Pond's Seedling, Jefferson, Sultan, Rivers' Early Prolific, and Mitchelson's; the best on walls are Transparent Gage, Kirke's, Coe's Golden Drop, Jefferson, Reine Claude de Bavay, and Victoria. Damsons are also a full average crop, the common, Prune and Farleigh varieties all bearing equally well. The best crops of Cherries are on May Duke, Black Tartarian, Frogmore, Early Bigarreau, Governor Wood, Elton, Bigarreau Napoleon, and Morello, all on walls; and on bushes and standards, May Duke, Archduke, Black Tartarian, Nouvelle Royale, Belle d'Orléans, Empress Eugénie, and Morello, are bearing fine crops. The frost in March thinned the Apricot blossom, but there is still an average crop on the trees, and the fruit is remarkably clean and fine. Peaches and Nectarines, on walls, have not been so fine for at least a decade, and with a fine autumn they will supply a large quantity of useful fruit. Most varieties are bearing heavily, and scarcely any old or new variety is without a crop. Strawberries suffered from the cold and dry hard wind in June, but the rain has greatly improved them lately, and they are now fully an average crop, especially our best varieties on this light soil, Garibaldi, as Vicomtesse Hericart de Thury is called in this district, and James Veitch. Among the newer varieties, Waterloo promises to be a good late fruit. All kinds of Currants are bearing abundantly, and so are Gooseberries and Raspberries, and have suffered very little from insects this season. At present the fruit season is nearly a fortnight late, but all the different kinds of fruit—Apples, Pears, Plums, Cherries, Peaches, Nectarines, &c.—are large and fine, clear in the skin, and from the beginning remarkably high-coloured. With a moderately good autumn to bring them to perfection, the crop promises to be the best we have had for many years. *M. Dunn, Dalkeith.*

ENGLAND.—NORTHERN COUNTIES.

NORTHUMBERLAND.—Apricots usually do well here, seldom fail to bring a crop, and are this year splendid. In spring they were protected with double fishing-net. Plums are generally scarce, but some young Victoria trees on a wall are splendid. Morello Cherries are an average crop, but May Duke, which does well here generally, has a light crop. Peaches are a fine crop. Apples are scarce, notwithstanding that the trees bloomed very well. Of Pears few kinds have a medium crop, but mostly the trees have only a sprinkling of fruits. Strawberries are very late; Viscomtesse H. de Thury is certainly the greatest cropper, and one of the best varieties to depend on here. *G. Harris, Alnwick Castle, Alnwick.*

—Up to the middle of July the prospects of a good crop of fruit looked very gloomy indeed. Apples, Pears, and Plums are a thin crop; some of the varieties of Strawberries are seriously infested with mildew. Our best Apples are from trees grafted on the Paradise stock, which suits our heavy soil. *D. Inglis, Howick Hall, Lesbury.*

DURHAM.—The crops of fruit were never later in our county. Strawberries are quite three weeks later than usual, and only a poor crop; the foliage has much overgrown the fruit, and the daily rains are doing much mischief to them. Morello Cherries are fine on pyramids, far outstripping those on walls in quantity and quality. Apples are thin and backward, and the same may be said of Pears. Small fruits are good. *J. Hunter, Lambton Gardens, Fence Houses.*

YORKSHIRE.—The fruit crop in this district is much under average, but clean and good. Peaches and Nectarines, very heavy crop; trees free from red-spider, which is not often the case in this district. Apples and Pears are partial; some trees of the following kinds are carrying heavy crops:—Apples—Keswick Codlin, Lord Suffield, Alfriston, Northern Greening, Dumelow's Seedling, Tower of Glamis, Dutch Mignonne, Red Astrachan, Ecklinville Seedling or Pippin, Cellini, Mère de Ménage, Stackpool's, a kitchen Apple worthy of more extensive cultivation, will keep two years and retain a brisk flavour; Duke of Devonshire, Devonshire Quarrenden, Blenheim Pippin, Annie Elizabeth. Pears,—Williams' Bon Chrétien, Beurré Diel, Souvenir du Congrès, Pitmaston Duchesse, Glou Morceau, Uvedale's St. Germain, Josephine de Malines, Beurré d'Amanlis, Styrian, and White Doyenné. *W. Chuck, Brodsworth Hall, Doncaster.*

—As a whole, the fruit crop is bad in the north of Yorkshire. Apricots are good in many places, but in others there is a doubt whether they can ever ripen this season, as everything is quite three weeks behind the usual time. Apricots should be ripe early in August, or they never ripen at all in this neighbourhood, the nights get so long and cold. Apples are bad generally; although the bloom was extra good, the setting was bad; probably the cold, dull weather prevented the pollen from ripening. The same thing happened to Strawberries; whole bunches of bloom are quite blind. Plums are a partial crop; in some places trees are carrying a good crop, while others are without any. Pears are rather better than Apples in promise, especially the early varieties, but many of those suffered terribly by a hailstorm on June 7; the fruit was so battered that it cannot grow out of it; at the same time Gooseberries were knocked off in considerable quantities; in some cases the crop was spoiled. Peaches on a warm wall are good, and generally do well if the season is at all favourable. *William Culverwell, Thorpe Perrow, Bedale.*

LANCASHIRE.—Fruit crops in this district are very poor—the worst for many years; and owing to the cold and ungenial weather, the trees have not made good growth, fly and maggot being unusually numerous. Strawberries, which have hitherto always cropped well, are nearly a failure. The best this season are Viscomtesse H. de Thury and James Veitch. None ripe yet. *Huntroyd Park, Burnley.*

—All fruits except the Strawberry are in good form, but late. Some Apple-trees in this garden are heavily cropped whilst others have scarcely any fruit. Pears are a more even crop, and odd trees that were heavily laden last year are also so this season; but from what I can learn, the crop generally of this fruit and of Apples is very thin. We had plenty of blossom on most of the trees, and all went well until the fruit was actually setting; then came the caterpillars to devour flowers, leaves, and setting fruit. The birds, which were so attentive to fruit-tree buds not many weeks earlier, sought not a maggot as far as I could see, excepting the wagtail and a starling or two that build in the disused flue and garden wall. Morello Cherries are a heavy crop, so are bush fruits—where the birds did not interfere with the buds—except Black Currants, which are a failure. Strawberries, perhaps, were never worse. Numerous young or yearling plants, like older ones, were without a flower. Loxford Hall Seedling is better than any other variety. *W. P. Roberts, Cuerdon Hall, Preston.*

EASTERN COUNTIES.

LINCOLNSHIRE.—Two circumstances unfavourably affected the fruit trees prior to and at the period of blooming—prolonged drought and protracted cold. The blossom generally was weak and colourless, and retarded action and debility gave insects the opportunity of working mischief, and their attacks were made in multitude, Apple trees suffering seriously, and the crop is a complete failure. Although many Pear trees are unfruitful, there are some exceptions, but the general result is unsatisfactory. Cherries

are bearing well. Apricots and Peach trees are recovering from the ungenial spring, but there is a sad deficiency of fruit. There are many cases of failure in Plum trees, but there are good crops of Damsons. The dry weather of last year clearly caused the blanks in the Strawberry grounds. I do not remember so many instances of blindness in the plants. La Grosse Sucrée has suffered as little as any from this prevailing weakness. *W. Ingram, Belvoir Castle, Grantham.*

NORFOLK.—The season has been a most trying one for all kinds of fruit, having had frost twice this month (July), making ten months out of the twelve in which we have had frost, with a continuance of north-east wind, which has caused nearly all kinds of fruit to be scarce. Cherries and Strawberries are the best crops; Apricots are quite a failure; Peaches and Nectarines nearly so. Some sorts of Pears, such as Marie Louise, Beurré d'Amanlis, and Easter Beurré, are a good crop; other sorts are very thin. Apples are eaten with maggot and falling off; Plums very thin indeed; small fruits are a good crop, except Gooseberries, which lost a great many buds through the birds. Strawberries are very fine. Walnuts were plentiful, but many have dropped off. *H. Batchelor, Catton Park.*

SUFFOLK.—The spring opened full of promise as regards the fruit crop, as there appeared to be plenty of bloom; but though this was unusually late in unfolding, the weather was so unpropitious then and after that little of it set, and what did set has been sadly thinned since by late frost and cold. Apples and Pears have been much affected by maggot, which has preyed on both leaves and fruit, but the rains have now washed the trees clean. *J. Sheppard, Woolverstone Park, Ipswich.*

— Apricots are almost nil. Peaches and Nectarines with us are a good crop—the trees clean and healthy. Although the Plum crop is under average, pyramid trees of the following sorts are carrying fair crops:—Early Prolific, Rivers' Orleans, Victoria, Large Black Imperial, Sultan, Denniston's Superb, and Farleigh Damson. Apples and Pears blossomed profusely, but the crop of fruit is much under average. The leaves of Apple trees were badly riddled by insects; recent heavy rains have washed the trees, and the growth they are now making is clean and healthy. Small fruits are plentiful and good. Strawberry plants and the fruit have suffered from mildew, and owing to the prevalence of dull cold weather the fruit is deficient in flavour. Much fruit of dessert Cherries dropped at an early stage of growth; that left is small in size. Both Plums and Cherries are pretty clean; aphids and blackfly are at present conspicuous by their absence. The leafage of Filberts is full of holes, and the crop is short. *J. Wallis, Orwell Park, Ipswich.*

ESSEX.—A remarkable feature connected with both Apples and Pears was the abundance of bloom upon the latter, and the excellence of the blooms upon the former, which upon some sorts—Wellington's, for instance—were each as large as Dog Rose blossoms, yet these grand flowers proved less fruitful than is generally the case. Striped Beaufin, however, will shortly have to be propped up, so excessively heavy is the crop. Wellingtons come next in point of prolificacy. *W. Earley, Double House, Ilford.*

— The blossoming of the trees was very late, and the weather favourable for most fruits. Apples were, of course, later than Pears, Plums, Apricots, and Cherries. The weather was fine when the Apples blossomed abundantly, and yet we have a crop much under the average. The blossoms did not set. I cannot understand why. Strawberries were much cut up by east winds, which also affected the blossoms in bud, as much of the fruit is malformed. James Veitch is the best variety this year. *J. Douglas, Great Gearies, Ilford.*

— We had a great show of splendid blossom for all kinds of fruit. The trees were attacked when in bloom by caterpillars, which played sad havoc, and in some cases will probably result in the death of the trees. Cordons and other trees which have had their roots attended to have fared by far the best.

The leaves of the Apple trees are completely destroyed in some instances. *A. Ocock, Havering Park, Romford.*

MIDLAND COUNTIES.

WARWICKSHIRE.—On the whole we have this year the best all-round average crop of fruit of the last ten years, but the continued heavy rainfall is doing great damage to all small fruits. *R. Greenfield, Priory Gardens, Warwick.*

— Apricots are thin. Some years we get a good crop and fine fruit, but the Apricot generally in this neighbourhood is at best but a casual crop. The fruit, however, when they come are good. Apples had fine healthy blossoms, but are certainly disappointing. Pears on standard trees are a good crop, and with a fine autumn may prove a fairly good crop. On walls, notwithstanding the magnificent bloom, the fruit is thin. It may be interesting to remark that a fine tree of Marie Louise which was figured in the *Gardeners' Chronicle* a few years since, and which has borne excellent crops most years, is this year almost barren with the exception of a small portion, on the opposite side of which a fire burns continually. This seems to point to the fact that the old system of flued walls was not a bad idea. I wonder what they are doing now with the flued walls at Erskine—on the Clyde. I remember when there, thirty-six years ago, under the then grand old gardener, Mr. Shiels, that Grapes, Figs, and Cherries were ripened by means of walls so heated. Plums are perhaps less satisfactory than the Apples and Pears. Standards, so far as I have observed, are comparatively fruitless. There are a few on walls—but certainly not a crop. Peaches.—Of these out-of-doors I cannot very well speak, as they do not now get the attention from me they used to get; and unless the trees are well managed, and kept clean, they cannot be expected to fruit satisfactorily. Cherries have done fairly well, both on standards and also on walls. The Cherry orchard at Brandon, near here, is this year, I am told, very satisfactorily cropped. Small fruits are a plentiful crop; they only want a little dry sunny weather to finish them off. Strawberries are somewhat disappointing; last year the weather was dry, and we gathered great quantities; the same beds this year are barren throughout, yet the plants looked healthy in the extreme. One quarter should have borne well this year before being dug up. We are now busy buying and begging plants for a fresh start. The season, so far as it has gone, has been a very wet, and in many respects a very unkind one, especially for the setting, swelling, and ripening of fruit; yet it is nothing much worse than many others of the fraternity may remember, who, like me, are now placed as regards age in the front ranks of the seniors. Some say the seasons are changing; so they do, but they merely oscillate between the better and the worse—nothing more. In this we have the authority of Cowper—and no bad one either—who published "The Task" in 1784, in which we find him writing—

"England, with all thy faults, I love thee still—
My country! And while yet a nook is left,
Where English minds and manners may be found
Shall be constrained to love thee. Though thy
clime
Be fickle, and thy year most part deformed
With dripping rains, or withered by a frost,
I would not yet exchange thy sullen skies,
And fields without a flower, for warmer France
With all her Vines, nor for Ausonia's groves
Of golden fruitage, and her Myrtle bowers."

I admit that, this year, the lowest temperature has been chronicled; and, although we have had much cloud and much rain, I can easily remember in the June and July of other wet seasons, having far greater floods, i.e., speaking of this neighbourhood; so that, comparing these deformed seasons with the deformed ones alluded to by Cowper over a hundred years ago, we may come to the conclusion that we have not altered much, either for the better or for the worse. One more quotation, and I have done. This is from Shakespeare, who

wrote towards the end of the sixteenth century, and was more severe on the weather than even Cowper (*Midsummer Night's Dream*, act i., sc. ii.) :—

"And through this distemperature we see
The seasons alter; hoary-headed frosts
Fall in the fresh lap of the crimson Rose;
And on old Hyem's thin, and icy crown,
An odorous chaplet of sweet summer buds
Is, as in mockery, set. The spring, the summer,
The chilling autumn, angry winter, change
Their wonted liveries; and the 'mazed world,
By their increase, now knows not which is which."

William Miller, Combe Abbey Gardens, July 23.

NORTHAMPTONSHIRE.—The Apple crop here is a very good one. Some varieties, such as Lord Suffield, Bridgewater Pippin—a variety little known in the South and a first-class Apple—Blenheim Orange, Hanwell Souring, are amongst the best. The heavy rains are spoiling what Strawberries we have. All bush fruits are very abundant. *G. H. Goldsmith, Floore House, Weedon.*

— All Apple and Pear trees suffered very much from caterpillar; some trees in the orchard were stripped of all their leaves in June. Of Strawberries, Sir J. Paxton and Sir C. Napier never bloomed; J. Veitch and President were good. Bush fruit generally is abundant. *E. Cole, Althorp Park, Northampton.*

BEDS.—The present season is about the worst I remember for most kinds of fruit. No doubt much of the blame may attach to the extraordinary dryness of the past season. Although the trees were loaded with blossom there was a very small percentage of the blooms set; and immediately after the Apples blossomed we were visited with a perfect plague of caterpillars, which denuded the trees of foliage in a week's time. Strawberries require sun badly, as the fruit is very insipid. *W. M. Bailie, Luton Hoo Park, Luton.*

OXFORDSHIRE.—Apricots and Plums are irregular; the buds of the latter were much injured by birds in early spring. Cherries are generally good. Peaches and Nectarines are rather thin, and the leaves blistered a good deal. Apples are very poor, especially orchard trees; dwarfs on the Paradise stock are fairly good; the trees have not been injured by caterpillars in this immediate neighbourhood. Pears good on walls, but thin on open trees. Small fruits of all kinds are most abundant. Strawberries good, but much injured by the heavy and constant rains. Nuts scarce. Walnuts somewhat irregular, small and late. *G. Stanton, Park Place Gardens, Henley-on-Thames.*

BUCKS.—Notwithstanding a prolonged period of cold and sunless weather that prevailed in the spring, the fruit crops, taken collectively, are looking satisfactory in this district. Apples and Plums are a partial crop, Pears and Cherries generally good, and Apricots promises to be so. Peaches and Nectarines are not so abundant as last year. Bush fruits clean and good but late. Strawberries less abundant than last year, and nuts likewise. *G. T. Miles, Wycombe Abbey, High Wycombe.*

— Apples and Pears are a poor crop. Plums, such as Green Gage and Victoria, and Damsons a very heavy crop; the trees are healthy and the fruit swelling up well. Strawberries are much in want of dry warm weather. Walnuts and Peaches are a very good crop. *J. Smith, Mentmore, Leighton Buzzard.*

— Speaking generally, the fruit crops of this district are considerably under the average, the cold and dry spring being the chief cause of this. Peaches and Nectarines suffered from the severe frosts and easterly winds, and are carrying, in consequence very little fruit; the trees, however, are now looking well, having benefited much from the copious rains of the past few weeks. Apple trees were infested with caterpillar, but I notice that here and there a tree has escaped, and is bearing a fair crop. Bush fruits and Strawberries are plentiful, but want sun to ripen them. *C. Herrin, Dropmore, Maidenhead.*

HERTS.—Apricots blossomed weakly, and were imperfect in the bloom, owing, no doubt, to last year's drought. Peaches are a good average, thanks to a copious supply of water while the fruit was swelling-off last year. Apples are very erratic.

Ribston, Irish Peach, Sturmer Pippin, Brownlow's Russet, Beaufin, Dutch Codlin, Majetin and Fearn's Pippin are weighed down with fruit, while a great number of other varieties are bearing very thinly, or even not at all. The same may be said of Pears, but on the whole the Pear crop will be much lighter than the Apple crop. We were troubled with the

but were destroyed by the caterpillars. I never remember having seen such devastation in such a short time. Oaks in the park suffered in the same way, some trees being entirely denuded. Peaches and Nectarines are heavily cropped. Pears and Plums very fair crops and good on walls, but thin on espaliers, bush, and pyramid trees. Strawberries,

LEICESTERSHIRE.—Some kinds of Strawberries here are very good. Keen's Seedling, Pauline, MacMahon and Prince of Teck have failed to produce flowers. *J. Hamsphere, Beaumanor Park, Loughborough.*

RETLANDSHIRE.—Apple trees in this neighbourhood are very healthy, nearly free from maggots; but many sorts are fruitless. Small's Admirable, Northern Greening, Lord Suffield, Tower of Glamis, Hawthornden, and Worcester Pearmain are carrying good crops. A lot of young trees, lifted and root-pruned two years ago next autumn, are most satisfactory. Peaches are under average; the trees suffered much from blister in the spring. Apricots bear a light crop, but they are wonderfully clean and healthy. Pears, a failure, except Bergamot d'Espere, Marie, Louise, Beurré Hardy, Winter Nelis, &c. Small fruits are very good. Strawberries, such as Keen's Seedling, Vicomtesse H. de Thury, Sir Charles Napier, Loxford Hall Seedling, and Elton, were also a fair average crop. The last-named variety I found to be a free-bearing, useful sort. The aphid family appears to be extinct this year, as there are none on the Cherry or other trees so far. *J. Grey, Normanton Park, Stamford.*

WESTERN COUNTIES.

GLoucestershire.—Bush fruits are good this year, but not so plentiful as last, being on the limestone, and the drought during the growing season last year caused the trees to make little growth, especially the Raspberries, the strongest canes being only 3 feet in height. Apple trees have suffered with the maggot, but Pear trees look well—there will be very little thinning to do. *A. Chapman, Weston Birt Gardens, Gloucester.*

MONMOUTHSHIRE.—Fruit trees here were generally unusually floriferous this year, and the blossoms escaped damaging frosts, yet, in many instances, the crops are disappointing, particularly Apples, which are partial, and considerably under average. The varieties that blossomed earliest and latest carry most fruit, while the foliage of all kinds has been greatly injured by caterpillar. Pears set their fruit satisfactorily, and are swelling well. Upon walls Beurré d'Anjou, Beurré Diel, Brockworth Park, Flemish Beauty, Jargonelle, Louise Bonne of Jersey, Marie Louise, Ne Plus Meuris, Pitmaston Duchesse and Williams' Bon Chrétien carry the heaviest crops; Beurré Diel and Beurré d'Amanlis being excellent as standards. Amongst several kinds of Apricots upon a west wall, Peach and Shipley's have the best crops. Plum trees were attacked by aphid early in the season, but are now clean and healthy, and although generally thinly cropped, Kirke's and Victoria are fairly good. Upon our heavy and deeply worked soil Strawberry plants did not greatly suffer from last year's drought, and they are very fruitful; but owing to rain and want of sunshine the fruit lacks in colour and flavour. Respecting quality the same may be said of Cherries, and Morellos have cast a portion of their crop. Currants, both black and red, together with Gooseberries and Raspberries, are abundant, although the latter did not last year make the robust growth they usually do. All fruits are late in ripening. *T. Coomber, The Hendre.*

HEREFORD.—The fruit crops here are, with the exception of Peaches, Nectarines, and Plums, very satisfactory. Peach and Nectarine trees were full of bloom, but the long-continued low temperature, accompanied with bitter cold winds, prevented them, and also the Plums, from setting a good crop. Apricots bloomed much earlier in the season, and set well, and all the trees are carrying good crops. Cherries are also carrying very heavy crops, and Morellos and Kentish promise to be unusually fine. Apple and Pear trees bloomed most profusely, but caterpillars caused great destruction by eating the flowers, young fruits, and foliage. But in spite of these drawbacks some trees are carrying excellent crops, and altogether we shall have nothing to complain about. Bush fruits are abundant, and of good quality. Respecting Strawberries, I have never



FIG. 13. HEUCHERA SANGUINEA: HARDY PERENNIAL: FLOWERS BRIGHT CRIMSON. (SEE P. 122)

maggot, but are free from the caterpillar, so prevalent in some places. The severe storm which passed over this district on June 26 cleared us from all insect pests, and trees now are clean and healthy. Strawberries with us are a heavy crop of fine fruit, but quantities are rotting on the ground through continued rains. *J. Kipling, Knebworth Park, Knebworth.*

—Apricots good, where the blossom was protected from the cold winds, driving snow, and rain. Apples promised well; good crops set on all trees,

Currants, Gooseberries, Raspberries, heavily cropped and fine. Cherries good on walls. Strawberries are a little acid and watery, owing to so much rain and little sun. There are splendid crops yet to ripen. I am only speaking of the earliest gatherings. Since June 19, 5.50 inches of rain have fallen at Moor Park. Vegetables look well, and have made considerable progress lately. We are quite a fortnight late in all outside produce. *J. Moulton, Moor Park Gardens, Rickmansworth.*

known them to bloom better than they did this season, and the plants are now carrying heavy crops of fine fruit of first-class quality. *A. Ward, Stoke Edith Park, Hereford.*

— Apples are a very disappointing crop after the fine show of bloom we had in the spring. Some orchards have hardly a leaf on the trees owing to the ravages of the caterpillar. I have heard there are a few exceptions where they have a good crop. *C. Denning, Holme Lacy.*

— The fruit crops in this locality are partial and irregular, but on the whole better than many growers at one time anticipated. I see from spring frosts we must go back to the past year of heat and drought for the cause of failures or partial blindness amongst Strawberries and some fruit trees which were too weak to form and mature their flower-buds. Apples, on the other hand, set an abundance of perfect flower-buds, also in due course plenty of fruit, but the unprecedented attack of grub has greatly reduced the crop, and in some orchards completely defoliated the trees. In this garden we have been obliged to thin Apples and Pears, whilst Blenheim Orange and some other varieties of Apples in orchards are bearing heavier crops than usual. Plums have failed through lack of blossom. Apricots, I believe, are far from plentiful. Peaches and Nectarines have required much thinning, also more attention than I have given to them for some years past. Green-fly, fostered by slow growth, has been most persistent, but soap-suds has been our only insecticide and the trees are now clean and quite to my mind. Gooseberries and Currants, netted from bullfinches in the spring, are an enormous crop, clean and fine. Strawberries are an irregular crop, and the fruit, owing to the absence of rain combined with unseasonable cold, is much affected by mildew. With the exception of a few sorts of Apples and Pears, and choice Plums, which are quite a failure, our fruit crops are above the average. The fine rains have wrought a marvellous improvement, but unless we have a great rise of temperature, and that quickly, the crops will be late and deficient in flavour. *W. Coleman, Eastnor Castle Gardens, Ledbury.*

WORCESTERSHIRE.—Taken all round we have an excellent crop of fruit, with the exception of Plums, which were very thinly flowered. Apples are a very heavy crop—more than we have had for many years, and the same may be said of Pears, both on walls and standards, and they promise to be highly coloured; Marie Louise, Glou Morceau, Passe Colmar, Beurré Rance, Madame Treyve, Easter Beurré, Josephine de Malines, and Pitmaston Duchess are heavily laden. Strawberries are an immense crop, and very fine, Sir J. Paxton and Sir C. Napier being the best, although the first named has been on the same quarter for five seasons. All bush fruits are a heavy crop, notably Black Currants, Raspberries, and Gooseberries, the latter exceptionally so. Both Nuts and Walnuts are very good. *W. Child, Croome Court, Severn Stoke.*

— The Apple crop was much reduced by the depredations of caterpillars, and where trees escaped their visitations very heavy crops may be seen, notably Blenheim Pippin, Lord Suffield, King of Pippins, Ecklinville, Keswick Codlin, Pomona, Cellini, Stirling Castle, and a local kind known in Worcestershire as Maltster. Pears are a better crop, even better on pyramids and standards than on walls, but they and Plums suffered from insects—the latter from aphid; still, there are fair average crops to be seen. Apricots are clean, and an excellent crop. Peaches and Nectarines are much damaged by persistent attacks of aphid. Cherries plentiful and good, as are also bush fruits. Strawberries a failure, only young plants bearing satisfactorily. *W. Crump, Madresfield Court, Malvern.*

— Apples and Pears are much under the average, and both have suffered to a very great extent from the depredations of the caterpillar and maggot, the former denuding the trees of the foliage, and the latter damaging the fruit. Peaches and Nectarines bloomed well and set good crops of fruit; but owing to the prolonged drought and cold east winds follow-

ing the blooming period, and the subsequent dull wet weather, the crops are in a very backward state; however, notwithstanding these drawbacks the trees and foliage are in a clean and healthy condition. Apricots generally are good, the produce promising to be fine, trees healthy, clean, and vigorous. Both Plums and Cherries are much under the average; the fruit and foliage of the latter also suffered from the attacks of caterpillar in the earlier stages; and now, owing to continuous rain and sunless weather, the already meagre crops are rendered almost useless and unsaleable by cracking and rotting. Strawberries and all small fruits are abundant and fine; the former, however, up to present date, almost useless from want of sun and drier weather. *J. Austen, Witley Court, Stourport.*

SHROPSHIRE.—Apples partial, and slightly under average; some sorts are good crops, others entire failures. Here Codlins, Golden Winter Pearmain, Tower of Glamis, Ribston Pippin, Grosse Sucrée, Hawthornden, and Red Astrachan, are our best examples. Pears are average, and doubtless will "swell off" well after the recent copious rains. Wall fruit scarce, although some trees are carrying full crops. Cherries good crops, especially Morellos. *A. Kemp, Broadway Gardens, Shifnal.*

— Apples in this district are very partial, only the varieties Hawthornden, Lord Suffield, Ribston and Orange Pippins, and Stirling Castle, are bearing good crops, and all trees have been sadly affected by caterpillars. Pears are also under average, with the exceptions of Beurré Diel, Williams' Bon Chrétien, Jargonelle, Winter Nelis, Josephine de Malines, and Glou Morceau, which are carrying heavy crops. Strawberries are exceptionally good this year, the copious rains having just come in time to swell them off. Peaches and Nectarines were badly affected by blight. *R. Milner, Sundorne Castle, Shrewsbury.*

CHESHIRE.—Apricots are a fair average, but only a few trees are grown. Plums a very poor crop. Peaches and Nectarines fair, but they were very much troubled with blight in the early stage of growth. Pears a fair average crop, Marie Louise being a thinner crop than usual. Winter Nelis, Ne Plus Meuris, Beurré Royale, Napoleon, Autumn Bergamot, Louise Bonne of Jersey, and a few others are carrying full crops. Apples are average. Keswick Codlin, Lord Suffield, Pott's Seedling, Ribston Pippin, Hawthornden, Margil, Mère de Ménage, John Apple, and Irish Peach are full; other kinds thin. Strawberries about half a crop. *J. Atkins, Tatton Gardens, Knutsford.*

— Pears may be said to be about average, as some kinds are full in crop, though others have very few. The same remark applies to the Apples. Amongst Pears Williams' Bon Chrétien, Louise Bonne of Jersey, and Jargonelles have good crops; and of Apples Grenadier, Lord Grosvenor, Pott's Seedlings, Ribstons, and King of the Pippins are bearing freely, and at this early date are looking very well. Victoria Plums and Damsons are good crops. Morello Cherries and Late Dukes are looking fair, so are Currants and Raspberries, but Strawberries are a failure—the worst crop that has been here for many years, which we attribute to the excessively dry summer last year. *R. Mackellar, Abney Hall, Cheshire.*

SOUTHERN COUNTIES.

MIDDLESEX.—In this market-garden district, where Apples form such an important crop, it is unpleasant to have to report that not only are they under average, but very much so. Since the original setting large quantities of fruit have fallen, either because of defective fertilisation or else that the excessive rainfall has promoted an unwonted ascent of sap, which pushed off all the weaker fruits. What are left, however, will be fine and clean. Pears are very good indeed, although ordinary market sorts are of no special value. Plums generally, Victorias in particular, and Damsons, are abundant; so also are sweet Cherries and Morellos, both being unwonted good crops. Gooseberries have been but a moderate crop, but

clean and good, whilst both red and black Currants are very fine and plentiful. So also are Raspberries. Strawberries were only a fair crop at starting, and suffered severely from excessive rain, so that on the whole it has proved a light produce. *A. Dean, Bedford.*

SURREY.—The prospect for a fruitful year never looked more promising, every tree having abundance of bloom, most of which were fine and fully developed, and the set was a very good one. Then the trees were attacked by the caterpillar, which almost denuded them of their foliage and fruit, and what little of the latter is left is so gnawed that there will be but few clear specimens left. The above remarks apply to Apples more especially, but Pears suffered in nearly as bad a degree. Raspberries are abundant and fine but lacking in flavour owing to the low temperature and continuous rain. Raspberries, Gooseberries, and Currants are plentiful and fine, free from Caterpillars. Peaches and Nectarines set a fine lot of fruit, but owing to the blister and sunless season, I am afraid they will not ripen. A great many fruits were damaged by the heavy hailstorms on June 18, which quite riddled everything and washed even pyramids of Pears, 8 feet high, out of the ground. I registered $1\frac{1}{2}$ inch of rain and hail in fifty minutes. Pears and other fruit lay under the trees quite thick. *A. Evans, Lythe Hill, Haslemere.*

— Our fruit crops are very satisfactory with the exception of Peaches and Nectarines. There are, however, round here many orchards, which have lost nearly all their leaves and fruit from caterpillars, and the Apple crop generally will be very short, though there are a few favoured spots where there are good average crops. Strawberries are very good in crop and quality. *J. Burnett, The Deepdene, Dorking.*

KENT.—I am right in the fruit growing district, and round here Plums are plentiful, and promise to be good in quality. Apples and Pears are thin, owing to maggot, which, however, since the recent rains have quite disappeared. Cherries are good, especially Morellos. Bush fruit, on the whole, are good, particularly Gooseberries and Raspberries, which are abundant and large. Strawberry crops poor, lacking colour and flavour, mildew having made its appearance in Sir J. Paxton—a kind much grown for market—but Myatt's Eleanor and Elton Pine promise to be good. *F. Moore, Blendon Hall, Bexley.*

— The fruit prospect in this neighbourhood is anything but cheerful. A dry season like that of 1887 soon makes even comparatively young plantations unprofitable, and last year did more than previous years to destroy them, consequently the acreage was smaller this year—less than usual—hence the good prices realised; the continual wet weather has rotted large quantities in low-lying fields. Raspberries promise to be the most abundant crop known for years. *H. Cannell, Swanley, Kent.*

— The fruit crop is not quite satisfactory. Small fruits of all kinds are plentiful and good, but the Apple crop will be deficient. It would be well to mention those kinds which are a full crop, and the following are those in the gardens here:—King of the Pippins, Cockle Pippin, Mère de Ménage, Norfolk Beefing, Winter Hawthornden, New Hawthornden, Betty Geeson, Sturmer Pippin, Lady Henniker, Fairy Apple, Hanwell Souring, Adam's Pearmain, Hughes' Golden Pippin, Striped Beefing, Wellington, Duke of Devonshire, Mannington Pearmain, Gravenstein, Queen Caroline, White Paradise, Lane's Prince Albert, Kerry Pippin, and Winter Queening. The trees did not bloom till the month of May, and one would have imagined that we should have had a good crop, but the weather was cold, dull and unfavourable, and the extraordinary crop of last year left us but few fruit-buds, and those weak—another instance of want of judicious thinning and the shortness of labour in all our gardens. *J. Rust, Elridge Castle, Tunbridge Wells.*

SUSSEX.—The fruit crops in the surrounding districts are very variable. The most important crop—Apples—is, generally speaking, a failure; our own

is almost as bad as Mr. Fish described recently in the *Gardeners' Chronicle*. Pears are moderate in quantity, and clean and promising. Peaches with us are a failure, while at Normanhurst and Battle Abbey, neighbouring gardens, they are abundant; at those two places Peaches are most successfully cultivated. Strawberries here are excellent, especially Vicomtesse H. de Thury and Burghley President. Bush fruits are plentiful. We are very free from fly, and were it not for the failure of the Apple crop we should have no cause to complain. *W. R. Holmes, Ashburnham Place, Battle.*

Apples are under average; after a great deal of blossom on some sorts scarcely a fruit is to be seen; others, again, such as Keswick Codlin, Lord Suffield, Adam's Pearmain, Lady Henniher, Flower of Kent, and Dr. Hogg, have very fair crops. Pears are a fair average crop, and the fruit is very clean; trees are blighted. Plums scarce, but we have an average crop of Victoria, Pond's Seedling, Orleans, Reine Claude de Bavay, and Kirke's Blue. Cherries a good crop all round the district. Strawberries are abundant, and very fine, as also are all kinds of small fruits in the district. *S. Ford, Leonardslee, Horsham.*

HANTS.—The worst season I have ever known. The foliage of Apple trees, and in some cases the young wood, have been quite eaten up by caterpillars. Many Pear trees have shared the same fate, and all have suffered more or less. The singular part of the affair is, that other fruits have escaped with but little injury, the caterpillars preferring the leaves of the Oak, and scores of the trees in the park are at the present time as leafless as at Christmas. Apricots were not injured by the caterpillars, the failure of this crop being, I think, attributable to the drought of last summer, as the buds dropped as soon as the swelling stage was reached. I am confirmed in this opinion by the fact that two or three trees that were convenient to the water, and therefore not good supplies, are fruiting moderately well. Altogether this is the worst fruit season that has ever been known in this part of the country. *W. Wildsmith, Heckfield Place Gardens, Winchester.*

HAMPSHIRE.—Strawberries have been a heavy loss to growers in the neighbourhood generally, as many as 20 tons less being sent away from one station in a single day than in some years, owing to continued rains, the fruit rotting on the ground. Apples did not flower so freely as last year. Long-continued cold weather prevented a free set. Some few sorts, such as Mère de Ménage, King of Pippins, Warner's King, Golden Pippin, and Irish Peach, have heavy crops, others almost *nil*. Very few varieties of Pears have any—Marie Louise, Jargonelle, Beurré Diel, and Pitmaston Duchess, on walls, are the only ones with a good sprinkling of fruit. Pyramids of Beurré Diel, Doyenné du Comice, Williams' Bon Chrétien, and Louise Bonne de Jersey, have heavy crops. Bush fruits are exceptionally heavy, and of good quality, Gooseberries and Currants in particular. *E. Molyneux, Swanmore Park, Bishop's Waltham.*

BERKS.—Apple trees were very much eaten up, and the few old trees that did blossom were eaten up by caterpillars. Young trees carry a good crop. Strawberries destroyed by incessant rains. Currants going mouldy. Gooseberries are the heaviest crop within my recollection. *N. Sinclair, Easthampstead Park, Wokingham.*

—Peaches showed abundance of flower, but owing to east winds and sunless weather, had no chance to set. Of Apples a great many sorts did not show any bloom; this I put down to the dry season of 1887. Blenheim Orange, Lord Suffield, Alfriston, Beauty of Hants, and King Pippin, are about the best we have. We have suffered considerably from the caterpillar both on fruit and forest trees. *J. H. Rose, Lockinge Gardens, Wantage.*

—Our fruit trees on the whole are looking very well, what we now want is sunshine and warmth after comfortless and boisterous winds, and a temperature sometimes down to 38° at night; such continued low temperature, I should say, is without precedent.

This is all against the fruit crops. Raspberries are very good and abundant. From what I have seen I should say fruit crops in this locality are a good average. *T. Jones, Frogmore, Windsor.*

—The fruit crops in this neighbourhood vary very much. Here very good crops all round, but our best crops are Peaches and Nectarines, Plums, Apples, and Pears. All small fruits are good crops; Strawberries very fine, but much spoilt with the heavy rains. In some gardens a short distance from here the Apple crop is a complete failure. *J. Tegg, Bearwood, Wokingham.*

WILTS.—The prospect of an all-round good year of hardy fruit was very promising before the respective kinds burst into flower, but the long spell of cold easterly winds and leaden sky, accompanied by frosts at night, which prevailed during the time the trees were in flower, caused a large percentage of the blossoms not to set, not so much by reason of the frosts—as all the choice kinds were covered with canvas blinds at night—as on account of the uniformly low temperature which we had all the time the flowers were open. However, taking all the crops together, we have not much cause for complaint. The following are bearing good average crops:—Peaches: Barrington, Alexandra, Noblesse, Chancellor, Sea Eagle, Dr. Hogg, Bellegarde, Violette Hâtive. Nectarines: Pine-apple, Lord Napier, Elruge, and Balgowan. Plums: Green Gage, Early Favourite, very heavy crop; Early Prolific, heavy crop; Victoria, Pond's Seedling, Kirke's, Mitchelson's, Orleans, heavy crop; Guthrie's Apricot, Reine Claude de Bavay, Coe's Golden Drop, Royal Hâtive, Mirabelle Jaune, a small round golden Plum; and Prince Engelbert. Pears: Marie Louise, Passe Colmar, heavy crop; Josephine de Malines, Williams' Bon Chrétien, Louise Bonne de Jersey, Easter Beurré, Althorp Crassane, Jargonelle, Dunmore, Beurré Grise, Uvedale's St. Germain, and Catillac. Cherries: May Duke, Black Tartarian, Bigarreau, Cleveland, Imperatrice Eugénie, and Morellos, very heavy crops of large clean fruits. The Apple crop is poor. *H. W. Ward, Longford Castle, Salisbury.*

SOUTH-WESTERN COUNTIES.

SOMERSET.—In this district trees much exposed are carrying very poor crops of fruit, this being partly due to cold easterly winds, and partly to a great plague of insect pests. Sheltered trees are much healthier, and the crops are heavy, clean, and, with the exception of Apples, generally well formed. Everything is very late. Bush or small fruits are so heavily laden as to quite break down the branches. The first Strawberries rotted on the ground, but later fruits were of good size and fairly good in quality. What is really wanted is plenty of sunshine. *W. Iggulden, Marston House.*

DEVON.—Many of the fruit trees on walls, especially Peaches, Nectarines, and Apricots, are not so good as usual, owing no doubt to the effects of spring drought. Many were dry at the root during the flowering period; hence the fruit failed to set. Aphids has been very troublesome this season, and this pest got over, mildew set in, Peaches and Nectarines requiring dustings of sulphur occasionally. Plums on walls are excellent, so also are Pears and Morello Cherries. Generally the orchards have poor crops of Apples, but here all are pyramids, and we have very good crops. Bush fruits are fine and excellent, Strawberries were very good indeed. Where allowed to grow together in beds the fruit rotted much during the wet weather, not so where kept grown singly. *D. C. Powell, Powderham.*

—Apples set badly and late, and some sorts better than others, notably Quarrenden, Cellini, Emperor Alexander, Dumelow's Seedling, and a few others which have good crops. Peaches and Nectarines are poor hereabout, and are going out of cultivation out-of-doors; leaves were very much blistered, and the fruits became spotted and fell prematurely. Pear trees are healthy and fair crops on the usually free-setting kinds; many trees no fruit whatever on. I never saw Strawberries so fine as this year, or the crop heavier. Very few spoilt

with rain. Gooseberries and Currants are also fine, and good crops. *G. Baker, Membrand, P'ynpton.*

CORNWALL.—Owing to spring frosts and a disastrous hailstorm on June 13, the fruit crops in this neighbourhood are anything but good. With the exception of small fruits and Cherries, it is much under the average. Apples and Pears were so abundant last season that the trees were too much reduced to show bloom. The Pears and Plums that did blossom well were sadly cut with frost. The week's summer weather we enjoyed at the end of May was at the exact time to set the Nuts, consequently we have a fair crop, and the Beech boughs are bending beneath their weight. *C. Lee, Bocomnoc, Lostwithid.*

WALES.

DENBIGHSHIRE.—The growth of all trees has been sparingly made; doubtless we shall have a stronger autumn growth on account of the late heavy rains. Most fruit trees bloomed profusely. Apples, Apricots, Cherries, and Quinces set well. Pears, Peaches, Nectarines, Plums, and Damsons set very indifferently, consequently thin crops. Gooseberries and Currants are heavily laden. Raspberries prolific, but small, and weak stem. Strawberries generally set weakly, and flowered thinly—Vicomtesse H. de Thury, Sir Harry, Black Prince, King of Earlys, Elton Pine, good crops; about ten other varieties are worthless, including President. The persistent dry cold of the winter and spring, succeeding a dry summer, acted detrimentally on many of the fruit trees. *P. Middleton, Wynnstay Gardens, Ruabon.*

PEMBROKESHIRE.—Apples bloomed well, but late this season, and the weather being dry and fine at the time, there was a remarkably good set. Pears also bloomed very well, every tree being profusely covered with strong healthy bloom. The early blooming varieties set the best, as they had dry weather. Marie Louise and a few other varieties which flower at the same time are almost a failure, the weather being wet and stormy during the time that they were in flower. *G. Griffin, Slebeck Park, Haverfordwest.*

IRELAND.

KILKENNY.—The fruit crop on the whole is a good average. During the flowering period there was an abundance of blossom on nearly all sorts of trees, but amongst Apples, Pears, and Plums only the free bearing varieties are carrying a heavy crop. Small fruits in general are abundant. *W. Gray, Woodstock, Instige.*

CHANNEL ISLANDS.

SCILLY.—So small a quantity of fruit is grown at Scilly that reports are not of much value. The Apple crop promised well with an abundance of bloom, but cold winds prevented their setting. Plums also promised well, but they suffered even worse than the Apple crop. Hawthornden and Worcester Pearmain are the best set Apples. *G. D. Vallance, Tresco Abbey.*

JERSEY.—Stone fruits, especially Peaches and Nectarines, suffering very severely, owing to the continuous late frosts. Plums are a partial crop, trees in exposed situations having shed all their blossoms. Morello Cherries stoned well, but the continuous heavy showers of rain cause them to shed their fruit, the ordinary means of protection being insufficient to meet the contingencies. Apples and Pears are below the average. Small fruits are a good average crop. Strawberries and Gooseberries being abundant. Raspberries and Blackberries promise well. *W. B. Saunders, St. Saviour's.*

THE OXFORD CARNATION AND PICOTEE UNION.—It is found that the flowers are so late in the Northern and Midland Counties this season, that Mr. DODWELL has postponed the annual exhibition in his garden in the Stanley Road, Oxford, from August 7 until August 14. The usual luncheon will follow the exhibition; and the business meeting will take place in the evening.

THE CHEMISTRY OF VEGETATION, IN REFERENCE TO THE GROWTH OF THE POTATO.

(Continued from p. 91.)

HISTORICAL SUMMARY.—Whatever may be said in favour of the different "methods" adopted in different text-books as a help to "learning chemistry" for professional or technical purposes, the historic method has this advantage for the student of plant life, that it at once brings him in contact with the earliest investigations of compounds of CHON (Carbon, Hydrogen, Oxygen, Nitrogen). From these investigations all our modern chemistry has a direct descent, the explanations of phenomena having come in more or less clearly from electricians and physicists, till perhaps the earlier workers would not fully recognise their science. From CHON the greater part of the physical basis of plant structure is built up, and it is to certain compounds of these on which anyone who studies plant life has mainly to fix his attention.

The study of "ash" or that which remains after the combustion of a plant, and methods of analysis bring him in contact with other elements and their compounds, but still with the greater part of the knowledge set forth in handbooks of the science, he has no directly practical interest. Nor need he fear that he will fail to understand how we have come to know what we know if he does not carry his historic retrospect further back than the middle of the last century. It is true that some have claimed both for Boyle (b. 1627), and for Hales (b. 1677), a high place as pioneers in chemistry. That may arise from modern interpretations put on their writings. It at least is difficult to trace any direct continuity of the influence of their researches on their successors.

BLACK'S WORK—CARBONIC ACID.

Two important changes in chemical work which signally characterised the early part of the second half of the last century, were the re-introduction of the balance, and the commencement of the study of gases. Till then air was to chemists simply air, and the few gases (as we now call them) that had been examined were regarded as "tainted air." There is no trace that any one even used the word *airs** in the plural till Black did, and from the days of Alhazen (A.D. 1100) the balance seems to have been entirely neglected by chemists till Black again used it.

The old Greeks fond of, and ingenious at, guessing at the origin of things, had in turn held that earth, water, air, and fire, were the "elements" from which things sprung, and these had continued to be regarded as elements.

The mediæval chemists had principally paid attention to the qualities of bodies, their action on one another, and as drugs. Quantity they disregarded, and hence could never have arrived at a notion of the proportions in which bodies influence one another.

Prior to Black's time, the explanation of combustion (put forward by Beecher and Stahl about sixty years previously) was that, when a body burned, there was something that passed out of it into the air. This hypothetical something was named phlogiston (*φλογιστον*—burnt), and "the phlogiston theory" was believed in by everybody—by what is called "all the world," and, I suppose, "his wife" too. We know that some years later one wife—Madame Lavoisier—after her husband had "abjured the heresy," took prominent part as a widow in the ceremony of burning the "wicked books."

Black's discovery was a simple one, but a memorable one. His experiment is worth while repeating by those who have not yet done so. Most people know that burnt lime is caustic. Those who do not know this can get the information from any bricklayer. Black† when about twenty years of

age (1752) was examining the difference between mild lime and caustic lime. It occurred to him to try whether the phlogiston supposed to give it its causticity when it enters into it from the burning fire made it much heavier. He weighed a lump, burnt it, and then weighed it again. Instead of being heavier it was lighter. He left the lump on the balance, apparently attending to something else when he had noted the weight. Some time after, going to his balance again he found the lump nearly its original weight. This set him thinking. Evidently in burning, something had gone out of it into the air, and the regain of the weight was due to something that came in from the air. He then poured acid on limestone. Again he found something went out, for even with the additional weight of the acid, his lump became lighter, and again, on standing, the weight in time was regained, showing something came in from the air. As his attention was directed mainly to the cause of the causticity of lime, and he was at Edinburgh preparing for his M.D., he did not at the time push his enquiries further concerning this "air" than to identify it with the air we breathe out. It for many years was known by the name "fixed air." Although chemists now call it carbon dioxide, it still retains in popular language its more familiar name, carbonic acid. The fact of its composition being



and the adoption of the symbol CO_2 was of course not till after Dalton's law of multiple proportions was established. We owe to Lavoisier the first explanation of its composition.

The important part it plays in relation to plant life was not understood till later still.*

CAVENDISH—HYDROGEN, &C.

Cavendish, who at the age of twenty-two had left Cambridge shortly before Black's dissertation was published, took up among other subjects an examination of the "fixed air" with a view to determine its density as compared with ordinary air. His rigid rule in all his work was to measure, weigh, and calculate. His habits of exactness and method extended to his own daily life, of which some amusing accounts are given in his memoirs by Dr. Wilson.† In 1760 he joined the Royal Society, and in 1766 contributed his first three papers under the title "Experiments on Factitious Airs." They were printed in the *Transactions of the Society* for that year, vol. lvi., p. 141.

The plate given to illustrate what he terms his "contrivance"—for he does not use the more dignified word apparatus—is well worth looking at, it is so charmingly primitive and simple.‡ The pneumatic

* It is difficult to determine how far Boyle or Hales understood it. † Cavendish Society's publications.

‡ The kind of way in which Cavendish worked can be readily understood by an experiment with homely apparatus. Take a glass jar or pickle jar. Pour in half a pint of water and make a mark (say a file scratch) where the water stands. Pour in another half pint and mark that, then another and another. Put the jar into a tub of water deep enough to fill the jar, then holding it, mouth downwards, gradually raise it till it is nearly out of the water. It can be easily supported in this position on the edges of two bricks. Blow through a tube with its end held close under the mouth, and as the bubbles rise the water in the jar will be gradually displaced. In this way you can collect a half pint, pint, &c., of the carbonic acid you have breathed out. A little more trouble will illustrate the method of collecting gases generated from different sources. Take another jar with a well-fitting cork, into the cork insert a bent tube long enough to reach over the tub to the mouth of the jar in the water. Put some effervescent powder and water in the jar, put in the cork and place the end of the tube under the mouth of the inverted jar. You will be able (roughly) to measure the amount of gas given off from the effervescent mixture.

This will illustrate the meaning of the expression "gases collected over water." As some gases are very soluble in water mercury is used instead. Then gases are "collected over mercury." In this way a certain volume (say half a pint) of one gas can be mixed with double that volume of another by letting in first the one and then the other. This Cavendish did with hydrogen and air, and afterwards with hydrogen and oxygen, and "exploded" the mixture by applying a light. In delicate researches accurately graduated tubes are used instead of roughly scratched pickle jars, but the method is practically the same.

trough with its convenient shelf had not been invented. That is believed to have been Priestley's device. The phials that were to collect his "airs" were, after Hales's fashion, hung mouth downwards in water by strings. What would a student accustomed to a well-equipped laboratory think of such "contrivances"? Yet he gives a most exact description to even the "luting" of the stoppers, and the joinings of the glass tubing. The three papers were on:—

1. The specific gravity of inflammable air from five different sources (now called hydrogen). His result was that it is but one-eleventh of common air. He noted that inflammable air cannot burn without the aid of common air.

2. The specific gravity of fixed air (now commonly called carbonic acid). His result was that it exceeds that of common air by one-half.

3. On the air produced by fermentation.

Engaged with other work, Cavendish did not communicate any other chemical paper till 1784.

RUTHERFORD—NITROGEN.

Meanwhile, Rutherford, in 1772, made known the existence of another distinct kind of air in the atmosphere. Mice could not breathe in it: hence the inference that it had nothing to do with supporting life like "common air." It would not support combustion. Though fixed air also would neither support life nor combustion, this air was not identical with it. It was called phlogisticated air,* or, as an alternative azot or azote (*α, privative, and zōtikos, belonging to life*). Its modern name is nitrogen. Priestley, not knowing of Rutherford's work, also found it a little later, and for this he received the Copley Medal of the Royal Society.

It seems to us strange from our standpoint that though when phlogisticated air was "discovered" by Rutherford twenty years had elapsed since Black found "fixed air," yet the "air" which supports life and combustion (the "air" or "gas" we now call oxygen) was unknown. W. S. M.

(To be continued.)

NURSERY NOTES.

COOMBE WOOD.

(Continued from p. 94.)

CLERODENDRON trichotomum is a pretty white-flowered species, useful to the gardener at this season for greenhouse decoration; but the plant as usually grown has the drawback of flowering only when it is several years old, and therefore compelling the gardener to have relays of plants if he would have some of them in flower year by year. Mr. Howard, the manager at Coombe Wood, gets over this difficulty by grafting young wood on old stocks of the same species, which then flowers the next year afterwards.

The white *Escallonia Philipiana* (*Gardeners' Chronicle*, July 27, 1878, with figure) was full of flowers, just going off in the middle of July. It is quite hardy, standing without protection in the border. The flowers are white, very numerous, and sweetly scented. Close by the above plant was a great bushy Japan Oak, *Quercus Burgeri* (acuta). It too is hardy, and possesses fine large evergreen foliage. Although seen here as a bush, it will, with timely pruning, form a stemmed tree.

Osmanthus myrtifolius is another small growing, quite hardy evergreen bush that would bear annual cutting, and would be well adapted for a garden hedge plant, or to take a place amongst formally kept specimen shrubs.

An ornamental standard, deciduous, small tree is found in *Cerasus Juliana rosea*, excellent for a sheltered position in a lawn. In *Ornus brachypoda* is found a Japanese representative of our flowering or Manna Ash. The foliage is larger, if anything, than the more common *Ornus*, and its hardness undeniable. Of Japanese *Acer* many were noticed—thrifty plants of some years standing, therefore of great hardness. It must be from some notion which

* Air phlogisticated was distinct from phlogisticated air.

* Van Helmont (b. at Brussels 1577) appears to have been the first to use the word *gas* in the sense in which we use gas.

† The exact year is uncertain, and so is the date of the first publication of his paper. As no question of priority is involved it is not of importance.

FRUITS UNDER GLASS.

has got about as to this point, which has lessened their distribution in gardens. Here the plants do not suffer in the winter at all, and rarely do the young shoots get nipped by late spring frosts. For grouping by themselves, or as "starers" amongst other shrubs with nearly uniform tints of green, they are invaluable. They might be employed for garden hedges, when, by cutting them twice within the summer months, young shoots would be produced all over the plants, the tender crimsons, yellows, pinks, and whites of which would have a beautiful effect.

Acer dasytilum, likewise of Japanese origin, is a tree whose young shoots and leaves are red; the mature foliage is very handsome. Other forms of Japan Maples observed were *A. argutum* and *A. macranthum*, the foliage of both of which turns to bright scarlet in the autumn. *A. Reitenbachii* is a Norway Maple, whose young foliage has reddish hues. *Betula laciniata pendula* is the perfection of a solitary tree for a lawn or a conspicuous corner, as is *Salix laurifolia* for the lake-side; the foliage of the latter is large and striking for a Willow. *Ptelea trifoliata* is quite at home in similar positions, and the golden-leaved variety equally so. *Syrax obassia* is a plant with fine foliage, and is highly decorative apart from the flowers. (See p. 131, fig. 14.)

MESSRS. SALTmarsh & SONS, the MOULSHAM NURSERIES, CHELMSFORD.

Coniferous plants are an important feature, and planters would here find a choice selection from which to draw supplies. While there is a general nursery stock, fruit trees form a considerable portion of it, and Messrs. Saltmarsh & Sons have long been famous for their standard Mulberries. Florist's flowers, such as Dahlias, Verbenas, Phloxes, &c., can also be seen in good and choice collections; and as exhibitors of the first-named, Messrs. Saltmarsh & Sons are very successful at the Crystal Palace and other exhibitions. Against the offices can be seen growing a venerable Clematis Jackmanni, with a stem the girth of which is just 1 foot. It is probably one of the earliest plants sent out by Messrs. Jackman & Son, of Woking. It has to be pruned back hard every year in order to keep it within bounds.

Among objects of interest are a bush of Genista hispanica, the Spanish Gorse, which forms a dense hemispherical bush, covered by a mass of yellow flowers in spring; the foliage sprays are elegant at all times; *Ligustrum ovalifolium variegatum*, a very handsome golden shrub, increased by means of cuttings; the green-leaved type is also desirable, as the early autumnal frosts change its foliage into bright purple tints; the purple-leaved Fibert, *Corylus Avellana purpurea*, is also striking, having beautiful dark purple foliage, with fruit to match; the fruit also is sweet and pleasant to the taste; *Quercus cerris aurea*, the variegated Turkey Oak, a tree that is in fine character late in the season: *Cistus roseus*, and that noble Cherry-Laurel, *Cerasus latifolia*, with its fine dark green leaves. These are but a few of the choice handsome ornamental trees and shrubs to be found in the nurseries.

In the way of Coniferous plants there is a very fine specimen of *Abies nobilis glauca*, 35 to 40 feet in height, and probably over thirty years of age, a grafted specimen; a very handsome form of the golden *Cupressus Lawsoniana*, 10 feet in height; *Cedrus atlantica glauca*, very fine; glaucous-tinted form of *Cupressus Lawsoniana*, a very handsome silvery form of the common Yew, which came among a batch of seedlings, and which Mr. Saltmarsh has appropriately named *albo spica*; some fine specimens of *Picea orientalis*, some seedlings from *Thuia gigantea*, much more dense in growth than is usual, and which do not take the usual pyramidal form. Lovers of Coniferous trees and shrubs will find much to interest them at this season of the year.

While all kinds of fruit trees are in demand, there is a brisk run upon some leading sorts of Apples, such as Ribston Pippin, Normanton Wonder, Cox's Orange Pippin, Blenheim Orange, &c. The new Queen Apple is in brisk demand, and Mr. Saltmarsh consider it one of the best late keepers grown. Trained fruit trees of all kinds receive careful attention. Standard Plums are well grown. Mulberries are largely propagated, standards finding a ready sale; but it takes from five to six years to get them into saleable size. They are layered in spring from stools, they lie so for two years, then they are taken off, planted in nursery beds, and gradually trained into standard form. R. D.

FIGS.—The weather for some time back has not been of a favourable character for the production of luscious fruit, the temperatures having been maintained largely by artificial heat. Where early trees are producing their second crop of fruit, the atmosphere will have to be kept much drier than was recommended for the trees when swelling the crop. On the other hand, aridity would speedily cause red-spider to put in an appearance. Gather the fruits as they are fit—the fruit which is to be used at once—when the skin is quite tender. If the fruit is to travel, it must be picked rather under-ripe. When the fruits which are ready are picked a good syringing may be given to the trees, and the night temperature maintained at 75°, with air admitted. Where the trees are grown in tubs or pots, plenty of some kind of weak stimulant should be afforded to assist them in finishing their crop. Strip off all late shows. Trees which require shifting should be seen to as soon as they have finished fruiting. Guard against over-potting; once in two years is quite often enough to shift Figs, if all has gone well. Use for potting compost good turfy loam, lime-rubbish, and Thomson's manure. See that the drainage is properly arranged, and of sufficient quantity.

Melons.—The present season is not what could be termed a good Melon season, as abundance of sunlight is indispensable to high flavour. The dull, sunless, and cold weather is favourable to canker in the stems, unless syringing and watering are conducted with great caution; syringing should only be resorted to on very bright afternoons, and a simple dew over will meet the requirements of the plants on all other occasions. Confine damping to the paths, and keep all moisture from the stems of the Vines. Let the temperature be kept about 75°–80°. Maintain a dry atmosphere and a good circulation of warm air in houses where the fruit is colouring. It has been a difficult task lately to get Melons in frames to set their fruit satisfactorily. Where heat is supplied from fermenting material alone it will be necessary to apply fresh linings to keep up the requisite temperature. During cold nights, when the thermometer falls to nearly 40°, some covering should be placed over the glass at dark, and removed as soon as possible in the morning. When pinching is requisite let the work be carried out as early in the day as possible, when the sun strikes the frames, so that the sap from the wounds may be dried up before the frame is closed for the night. Let each fruit be elevated on the top of a flower-pot, so as to get all the sun and air possible, and turn the fruit every other day. The latest sowing for the season should now be made. This will be the last crop of Melons, but unless the season turns out sunny they will not have much flavour. This lot of plants it will be as well to grow in pots. Place a shallow box on the top of the hot-water pipes. In this place a layer of turf, and stand the pot on the top; when the roots emerge through the pots a little fresh compost can be placed over them, and the roots in the box can be watered without running all the water through the pot.

Cucumbers in full bearing must have rich light top-dressings placed over their roots as they appear on the surface. Old plants which show distress may be cut over and allowed to break afresh. Keep dry at the root, but syringe two or three times a day until the young shoots develop a few leaves. Shade during the bright part of the day. When growth becomes rapid, remove a portion of the old soil from the roots, and replace with fresh. See that the bottom-heat in dung frames is kept up; where it has declined, fresh linings must be applied.

Train and pinch the points of young plants which were recommended to be sown last month. Do not allow them to bear until they have furnished the trellis. Now is a good time to sow for winter. Let the structures be thoroughly cleansed before the seeds are planted. As they have a long season of dull, ungenial weather before them, it is important that they should receive all available light possible. Also the season is not favourable for dealing with spider and other pests, hence the advantage of a clean start.

Strawberry Plants for Forcing.—These plants should now be in their fruiting pots, and when they have begun to make fresh roots they should be placed where they are intended to make their growth—a piece of ground with a good bottom of clinkers or stones, covered with a couple of inches of screened coal-ashes or gravel. The situation should be fully

exposed to the sun, and a good plan is to mark out the ground into beds, for the easy examination of the plants. Some growers provide trellises for the plants. This is undoubtedly a good plan, if the weather be wet, or for late autumn treatment; but where several thousands of plants are grown it is an item of considerable expense, but where it can be carried out, by all means let it be adopted. The plants must receive careful attention as to watering, the runners closely kept pinched off as they appear, and the pots kept clear of weeds. Such varieties as Vicomtesse Hericart de Thury and Sir Charles Napier have a great tendency to throw off several crowns. This must have attention, and the best crown only allowed to develop itself, the others being removed. It is scarcely possible to recommend sorts of Strawberries for forcing, as some varieties succeed admirably in one district, and refuse to grow at all in another. W. M. Baillie, Luton Hoo.

THE FLOWER GARDEN.

Roses.—Any budding that yet remains to be done should be pushed forward. Where this work was begun in good time, the earliest buds inserted had better be examined and the ties loosened where necessary, neglect in this matter often resulting in injury to the swelling buds. Look over Tea Roses and strong growing varieties that are trained against walls, pillars, or trellises, cutting out all weakly and superabundant growths, not forgetting to tie or nail in the strongest shoots as often as becomes necessary, not overcrowding them, but allowing space for proper development. If mildew has made its appearance, no time should be lost in checking its course. Mildew compositions may be obtained from most seedsmen. Cut off seed pods; and pull up all suckers from Manetti stocks.

Carnations and Picotees.—Layering of these must now be carried forward, and for this purpose use a compost consisting of three parts loam, one of silver-sand, and one of leaf-mould, the whole to be passed through a fine sieve previous to using it. The operations of layering, it may be stated for the benefit of the inexperienced, consists of pinching off the bottom leaves from the strongest shoots of the current year's growth; cut off also the points of the leaves; afterwards spread in between and round the shoots a 2-inch thickness of prepared compost, press down moderately firm, and with a sharp knife make a clean cut halfway through a fully developed node or joint, the knife entering just below, and drawn upwards in a slanting direction so as to form a tongue, then with a short hooked peg secure in proper positions the young shoot in prepared compost, adding another inch, or half inch, of the latter over the base of the layers. Should dry weather be experienced afterwards, they must be kept watered through a fine rose watering-pot till rooted. Weak growing varieties are best propagated by cuttings put in well-drained clean 5-inch pots, and placed on a gentle hotbed, and shaded from bright sunshine.

Outdoor Ferneries.—These should be looked over again, and freed from weeds if necessary. The fronds of most species are now fully developed, and are rapidly coming into fructification, so that the proper time has arrived for the cultivators to ascertain the correct names of species and varieties of any plants in his collection of whose nomenclature he entertains doubt. The Editor of this paper will name species of not more than six specimens at a time; but it would be too much to expect him to name varieties, and these had better be referred to specialists. Amongst the best of the British Ferns we have here at the present time, I may mention *Athyrium*, *F.-f. Craigii*, *A.F.-f. Victoriae*, *A.F.-f. corymbiferum*, *A.F.-f. apiaforme*, *Cystopteris fragilis*, *Allosorus crispus*, *Polystichum lonchitis*, *P. angulare Bayliae*, *Scolopendrum v. Cliftii*, *S. v. marginatum*, and I mention them here as worthy of cultivation in any well kept garden, either on rockeries or for planting amongst old stumps and roots of trees in shady nooks and corners. They range in height from 4 inches to 2 feet. Many more native species and varieties equally good might be given, but it is not in brief calendarial notes that they can be noted.

Lawns.—It will be a good plan to skim these over with the scythe, so as to take off the long bents that escape cutting by the machine, and it will also be advisable to give some attention to any weeds which may be found on the lawn. Cut out Plantains, and destroy Dandelions by applying a drop of vitriol to each crown. J. Horsefield, Heytesbury.

Advertisers are specially requested to note, that, under no circumstances whatever, can any particular position in the paper be guaranteed for advertisements occupying less space than an entire column.

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APPOINTMENTS FOR THE ENSUING WEEK.

MEETINGS.

TUESDAY, AUG. 7. Royal Scottish Arboricultural Society: Annual General Meeting, and the Annual Excursion on the two following days.

FRIDAY, AUG. 10. Royal Botanic Society: Anniversary Meeting.

SHOW.

WEDNESDAY, AUG. 8.—Annual Society of York Florists.

SALE.

FRIDAY, AUG. 10. Imported and Established Orchids, at Protheroe & Morris' Rooms.

Transit and Distribution of Fruit.
Few matters in connection with fruit-growing in this country more need improvement than the transit and distribution of fruit, affecting as they do an enormous amount of capital, and to a large extent the welfare of our teeming population. The two are so closely connected, that at first sight it appears somewhat difficult to separate them, but for the sake of convenience it is desirable to do so, in the hope that, by so doing, the two questions will be presented to those whom they most concern in a clearer light than would be the case if they were treated singly.

Of the three modes of transit of fruit to market—viz., by water, road, and rail—we purpose now dealing with the latter only, as it is to the majority of fruit growers, and to a certain extent to the consumer as well, the one of most importance. Are the existing ways and means employed by railway companies for the transit of ripe fruit over long distances the best, or can they be improved upon? These are questions which at times many fruit-growers must have asked themselves, particularly in such weather as was experienced last summer, and they have probably often felt puzzled to form a definite or very decided opinion on the matter, except the one that their returns ought to have been considerably higher. Great improvements might be brought about with great advantage to buyer and seller, but as the matter is one which rests mainly between the railway companies and the fruit growers, the latter ought to approach the former in an amicable spirit, lay the matter clearly before them, and the probabilities are that their requirements would be met, and the whole question settled, in a very short space of time. Under the prevailing mode of transit,

tons of produce of high quality when first gathered, and which ought to form a portion of the food supply of our population are absolutely spoiled and rendered unfit for human food for the want of an improved system of carriage, this being especially the case with such soft fleshy fruits as Strawberries, Cherries, Raspberries and Plums, in such unusually hot weather as was experienced last summer.

The present type of railway van used for the transit of fruit is a closed covered carriage, devoid of ventilation save that by the doorway; and it is obvious that in such a structure as this the temperature during July, August, and early part of September, must often range from 70° to 90°. Under such conditions, deterioration and consequent loss of profits must inevitably take place in a journey of 200 or 300 miles—say from Kent or Hampshire to the North of England; and we may feel perfectly sure that among the above-named kinds of fruit fermentation and decomposition have set in long before they are sold in the open market, and that they are in consequence disposed of at ruinously low prices. Independently of the grower's returns, the question merits notice from the consumer's point of view. How much better off would the latter be with 1 lb. of good sound fruit than he would be with double the quantity of partially decayed fruit, we can hardly venture to state; suffice it to say that he must be better in health and probably in pocket also in the long run. Practical men who thoroughly understand their business need no arguments to convince them that a consignment of ripe fruit—say, for instance, Strawberries or Cherries—would arrive at their journey's end and be placed in the market in a better condition, if the inside temperature of the van used in their transit had not exceeded 50° than would be the case under a very much higher temperature—say 80° or 90°. From this the inference will at once be drawn that properly constructed vans, in which a low temperature can be maintained in hot weather, are a necessity which ought not to be beyond the skill of railway carriage builders, who have the American fruit-trains as a pattern. At the bottom of a closed covered van there might be a cold-air chamber, over which iron grating could be fixed instead of wood flooring, as at present, with a good system of ventilation at the top and bottom for ingress and egress of air. If by this plan the temperature cannot be kept down to something like 50°, then other means should be tried. Of course a suggestion of this nature, on first being mooted to managers and directors of railway companies, will almost of a certainty be treated with something akin to ridicule, and be described as fanciful, with the additional epithet, "It won't pay." Well, innovations on old customs are usually treated this way, but that need not for a moment daunt the ardour of those whose business it is to reap the greatest benefit they can from the fruits of their own labour. With a little perseverance it will be found in the long run that railway directors are quite as accessible and open to entertain reasonable proposals as freely as any other class of men.

At a time when a Railway Rates Bill is being dealt with by the Legislature—the principal object of which is to reduce terminal charges and rates—it is scarcely expedient to venture the suggestion of a slightly increased charge for this improved accommodation, however the argument may be advanced that an increased traffic would be the eventual result, and in that way directors and managers of companies might possibly be convinced that the change would be to their own interest. These specially constructed vans or

carriages for fruit ought to be attached to all passenger trains running through the fruit-growing districts, if possible, from the middle of June to the middle of September. With regard to consignments of fruit conveyed in open trucks by goods train there is not so much to complain about; still, some improvement might with advantage be even introduced here. In the first place, instead of the present form of close flooring, the latter ought to be so made as to allow of a current of air to come from underneath, and this could easily be done by allowing a space of 2 or 3 inches to intervene between each strip of planking. One or two other improvements might be introduced at the same time, to obviate the practice of loading hampers and baskets too closely together. Half an hour's conversation with a railway engineer by the side of a van or truck would put the whole matter in a clear light, and the sooner some improvements, of whatever kind, in the direction indicated are brought about the better it will be for fruit growers and the public at large.

With reference to this subject we draw attention to the packing-case (see fig. 15, p. 135), designed by Mr. TALLERMAN, of the Commercial and Agricultural Co. (Limited), and exhibited by him at the last meeting of the Royal Horticultural Society. The idea is so to pack soft fruits generally that they shall not be liable to damage from the ordinary exigencies of railway or other usual modes of conveyance. The crate, which is made of slight spars of deal, is 14 inches in width, and the same in breadth, by 16 inches in height. It is intended to hold securely sixteen cardboard boxes, each of which will hold from 1½ to 2 lb. of fruit, according to kind. This method of packing would seem to recommend itself especially to the notice of persons who obtain their supplies of fruit direct from the wholesale dealer or the grower.

The distribution of fruit is quite as important as transit, and although we have a more perfect railway system than that of any other country in the world, it is greatly to be feared that a good many fruit growers fail to reap such advantages therefrom as the nature of the case would seem to warrant, but which they undoubtedly would do by a slight deviation from old and too well worn ruts. It is undeniable that far too many persons regard London as the central dépôt for their produce, and, as a consequence, the markets of the metropolis are at times glutted with fruit, much of which, after being sold, and after deducting salesmen's commission, carriage, and other incidental expenses, leaves but a very narrow margin of profit—sometimes none at all—for the grower. The same kind of thing may occasionally occur in two or three other large centres of industry, although not to the same extent, nor yet so frequently as in the London market. Is it possible for this state of things to be altered for the better? or can a remedy be found that will obviate the evil of causing a glut in some few of the largest markets, whilst at the same time comparative scarcity prevails in many others? These are questions which will force themselves to the front in due course, as the fruit-growing industry extends, and will demand a solution in some form or other, or the consequence will be that a vast amount of capital—and which is annually increasing in fruit farming—will not only fail to return interest, but will be absolutely lost. In considering these matters it is necessary to take into account two matters, viz., distribution in its relation to supplies derived from existing resources, and a means of enlarged distribution that will be able to cope with annually increasing supplies. Of



FIG. 14.—*STYAX OBASSIA*: HARDY SHRUB: RACEME PENDULOUS: FLOWERS WHITE, FRAGRANT. (SEE P. 133.)

course a system that will be applicable to the future, will be more than ample for present purposes, therefore all that is put forth with a view to remedy existing defects must necessarily apply to future requirements also. In regard to the present state of things it has always occurred to us that large growers of fruit might with advantage take a lesson from a custom that has long prevailed in the milk trade, *i.e.*, sale by contract. Selling by contrast may prove a difficult and hazardous question in regard to fraud, though it is adopted in some parts of Kent, indeed, as a matter of fact it might with some kinds, and under certain contingencies, prove altogether unworkable. Notwithstanding that, however, there are other kinds of fruit that might be sold under the contract system just as easily as milk is. Let us take for example a crop of Grapes or Peaches, grown under glass: any man who has the growing of these under his charge, and who thoroughly understands his work, will be able to estimate to a nicety some weeks before the crops are ripe what his probable yield will be, and the same may also be said of Apples, Pears, Plums, and one or two other kinds of fruit. Under such circumstances as these what could be better than to make arrangements with the retailer or shopkeeper some time beforehand to supply by contract at per pound, dozen, or bushel, to be delivered on, or between specified dates? If a grower cannot agree with his customary buyer—be it in London or any provincial town—upon a certain price, he will have time, under this plan, to write elsewhere, and it stands to reason that he will be more likely to derive benefit by knowing what his returns would be than he would if he sent his produce to be sold on commission simply for what it would fetch.

In the distribution of home-grown fruit the commission salesman must be regarded as a necessary evil, to be avoided as much as possible, in order to benefit both producer and consumer; the latter certainly would thus be a gainer to the extent of having fruit of a better quality, for it cannot be denied that the less "knocking about" there is with this kind of food the better. It is not at all an uncommon occurrence to see fruit sold in London and other large centres, on stalls and costermonger's barrows, at infinitely cheaper prices than would have to be paid for the same article in rural districts. Any system of distribution that will tend to remove such inequalities—be it by contract or some other plan—will be a step in the right direction.

Having touched briefly on the present state of things, let us take a cursory glance at the future. Within the past few years hundreds of acres of land have been planted with fruit trees, and, so far as it can be judged from present circumstances, this will be added to yearly to an indefinite extent, supplanting, in a great measure, the growing of corn crops, which with our large importations is becoming less remunerative year by year. Now the question arises. In what way is this promised increased supply of fruit to be treated so as to avoid unnecessary waste, loss of capital, and loss of food to our fellow creatures? When looked at from a broad and comprehensive point of view, it will be admitted by most persons that our present system of distribution will require to be greatly extended and improved upon. To meet the difficulty the only remedies that present themselves are increased market-accommodation and the establishment of fruit factories. In all large towns the present number of markets might very well be doubled, and, in some instances, a larger number than this even might prove advantageous. In many of the smaller towns also greater facilities for whole-

sale trade purposes are urgently needed, and in all cases the nearer to the railway station these markets are the better. Railway companies themselves in the majority of towns could doubtless supply this want, and there can be no doubt that they would greatly benefit thereby, as they would add largely to their income from increased traffic receipts and market-tolls. With regard to fruit-factories, here again we think may take a lesson from dairy farming, and build them at the source of supply, as is done in Kent and elsewhere, instead of in the large towns, as they mostly are at present. In all large fruit growing districts there ought to be one or more of these factories where fruit could be taken in any time between Monday and Saturday to be made into jam, and some kinds to be converted into articles of food by a process of drying. There appears to be a great future in store for home-grown dried fruit, and probably we shall hear more about this part of the subject at no distant time. The two Fruit Conferences to be held in the coming autumn we are pleased to see are likely to take up these and similar questions, and we sincerely hope that practical benefit from them may accrue to all concerned.

ROYAL HORTICULTURAL SOCIETY: THE APPLE AND PEAR CONFERENCE AT CHISWICK.—The joint executive committee of the former Apple and Pear Conferences met at Chiswick on Tuesday last, under the Presidency of Colonel Biddome, representing the Council of the Royal Horticultural Society, the Rev. W. Wilks, Hon. Secretary of the Society, being also present, Mr. A. F. Barron acting as Secretary. The following members attended:—Messrs. Shirley Hibberd, F. Q. Lane, Haycock, G. Bunyard, A. Turner, Cheal, Herbst, Roberts, Hudson, A. Dean, Wildsmith, and J. Wright. A prospectus of the proposed Conference, with schedule of classes for the respective fruits, issued by the Council, was submitted and discussed freely, several very important amendments being made, foremost amongst which was one fixing the date of the Conference for October 16 to 20, so that it should not clash with the hardy fruit show at the Crystal Palace of the preceding week. Papers on subjects arising from or connected with the Conference are invited from capable persons, which, it is hoped, arrangements will be made enabling them to be read, and as far as possible, published. As the schedule of classes as amended, and which will shortly be issued, shows, the Conference will partake chiefly of an horticultural character, but the invitation of "orchard-grown fruit" shows that an even wider cultivation of Apples and Pears has not been lost sight of. It is specially worthy of note that whilst collections of diverse characters are invited in each case, not only the number of varieties but the number of fruits of each variety is limited, as were competitive efforts to exhibit allowed the greater bulk would be intolerable. To exhibit five large fruits, or up to nine small ones of any variety will distress no one. The collection specially representative of districts should prove particularly interesting, whilst remembering that this year both Apples and Pears are but partial crops, still it is hoped that a general response to the invite to exhibit at the Conference will be made.

THE GARDENERS' ORPHAN FUND.—The monthly meeting of the committee, and the first meeting of the new elected body, took place at the "Caledonian" Hotel, Adelphi, on the 27th ult., there being a good attendance. Mr. GEORGE DEAL was unanimously elected Chairman of the Executive Committee for the ensuing year. The minutes of the previous meeting having been read and signed, the Hon. Secretary reported that the sum of £736 14s. 4d. stood to the credit of the Fund at the bankers. It was unanimously resolved that a further sum of £500 be invested in "Goschens," making £1500 in all. The accounts of the recent dinner

were laid before the meeting, and were considered highly satisfactory. Hearty votes of thanks were passed to the President, Sir JULIAN GOLDSMID, Bart., M.P.; to the donors of plants, flowers, and fruits; and to the vocalists, for their assistance and support at the recent dinner; also to the local secretaries for their valuable services during the year. The Chairman announced that he had recently had an interview with Mr. N. SHERWOOD, of Messrs. HURST & SON, Houndsditch, E.C., and that gentleman had generously promised the sum of £100 towards placing another child upon the Fund in accordance with the provisions of Rule XII. The committee unanimously resolved that Mr. SHERWOOD's generous offer be accepted with hearty thanks, and that a child four years of age be placed upon the Fund for the period of ten years. Mr. SHERWOOD having waived his right to nominate a child, it was unanimously resolved to nominate and recommend to Mr. SHERWOOD as the recipient of his bounty KATE HARRIET BROOKS, of Holmsworthy, Devon, one of a family of ten fatherless children, two only of the number being able to earn anything towards their support. This case is strongly recommended by the Rector of Holmsworthy. It was resolved that the allowances to the ten recently elected children should date from July 1. Forms of contract and receipts were approved, and the Chairman and Hon. Secretary appointed as a sub-committee to carry out all the foregoing arrangements. It was stated that in the case of the recently elected children the grandmother would have the custody of the child in one instance, uncles in two others, and mothers in the remainder. It was resolved that 3000 copies of the annual report, balance-sheet, and list of subscribers be printed for circulation, and 500 collecting cards be obtained, as many persons appear to be willing to give small sums. Various accounts were ordered to be paid, and the committee then adjourned until the last Friday in September, the Chairman and Secretary being empowered to convene a special meeting if necessary.

THE BATH FLORAL FÊTE.—The committee of the above have issued a special prize schedule for the exhibition in the Sydney Gardens on September 5 and 6, and several classes of botanical interest are contained therein in honour of the visit of the British Association. Prizes are offered for a hybrid Orchid, and hybrid or cross-fertilized plants, also for Ferns of several species. In all cases of hybrid plants it is requested that illustrations of the parents from which they were obtained be also submitted.

LORD JUSTICE LINDLEY.—The autumn graduation ceremonial of the University of Edinburgh took place on Tuesday, August 1. Professor KIRKPATRICK proposed for the honorary degree of Doctor of Laws Sir NATHANIEL LINDLEY, Lord Justice of Appeal. He said, as the honoured name of Dr. JOHN LINDLEY was a household word among botanists and men of science, so that of his son (Lord Justice LINDLEY) was a household word among lawyers, not only in England, but in Scotland also, and indeed wherever the English language was spoken.

THE "TROPICAL AGRICULTURIST."—The seventh volume of this publication is now completed, and like its predecessors contains a perfect mine of information on subjects connected with tropical agriculture and economic botany. The information is gleaned from many sources, but the editors are careful to cite date and chapter, if not verse, for all their extracts, and they are most honourable in citing their authorities. A full index renders the volume comparatively easy to consult. The publication, though issued at Colombo, Ceylon, is adopted for all tropical countries.

TROPICAL PRODUCTS.—We have received from M. F. W. VAN EEDEN, the Director of the Colonial Museum at Haarlem, a series of handbooks illustrative of that notable collection. The subjects

treated of include the trees, timber, and fibre plants of the Malay Archipelago, by M. VAN EEDEN; Cinchona, Coffee, Tea, Sugar, Cocoa, Vanilla, Rice, Tobacco, and Spices, by R. W. VAN GORKOM; Fruits, Drugs, &c., by F. HEKINJEYER; Fats, Oils and Gums, Crotonchou, Gutta-percha, by Dr. DE LOOS. Unfortunately for us the text is written in the Dutch language; but the indexes of botanical, commercial, and vernacular names render the books useful even to those unfamiliar with the language of the Netherlands and of the Dutch possessions in Malaysia.

DUTCH BULBS.—The weather in Holland this summer has been in general cold and rainy like in other countries, and so the season is more backward than usual; the harvesting of bulbs, in consequence, will take place at a much later date than ordinarily is the case, as one of the principal rules in their cultivation is never to take them up before they are well ripened—the flowering qualities being injured by too early removal; thus, the bulbs (especially Hyacinths and Narcissi) will probably be ready a fortnight later than in ordinary years, when the first days of August see the beginning of the exportations. It is reported that several of the leading firms in the bulb trade do not intend to begin sending out their bulbs until they are quite fit for the purpose. It is to be hoped that this system will be generally adopted by the Dutch growers.

BRITISH TOBACCO.—The report of the judges appointed to determine the award for the prize of 50 guineas offered by the London Chamber of Commerce for the best specimen of British-grown Tobacco has now appeared. The conditions made when the prize was offered required that each specimen of Tobacco submitted for competition should consist of not less than 400 lb., grown on a commercial scale. It was also stipulated that each sample should embrace an average of the crop grown, and that the growers should give such particulars as would assist the judges in making "a report on the yet doubtful question as to the possibility of growing Tobacco in Great Britain such as in quality relatively to price can compete with that of other countries." The entries numbered eleven, and were duly inspected at the Fenchurch Street Bonded Warehouse on May 14. It was found that only four exhibitors had complied with the conditions so far as quantity was concerned; but in view of the interest which is being manifested in regard to Tobacco growing in the United Kingdom, the judges considered it desirable to present a supplementary report on the remainder of the specimens, though not properly coming within the scope of their adjudication. They placed the four exhibits submitted to them in the following order of merit:—1st, Messrs. James Carter & Co.; 2nd, Mr. W. L. Wigan; 3rd, Sir Edward Birkbeck, M.P.; 4th, Mr. John Graves; and they recommended that the prize of 50 guineas should be awarded to Messrs. James Carter & Co. Detailed particulars, furnished by the growers, as to the cultivation and preparation of the samples sent in for competition are given, together with remarks of the judges on the various exhibits. In concluding the judges state that, speaking generally, "not one of the four samples eligible for the prize was in any respect valuable for trade purposes, or even merchantable, presuming that no duty was chargeable upon the article. Still, it was evident that well grown Tobacco leaf could be produced upon English soil, though, of course, this admission in no way takes account of the cost of production. With regard to the prospects of Tobacco-growing on a remunerative basis in England, we share the opinion that, even under the most favourable conditions possible, such a crop cannot be made to pay, and that in most seasons it must be an absolute failure and heavy loss. The climate of this country, to begin with, is less favourable than that of Kentucky or Virginia, and the cost of production will be found far greater here than in the United States. Until the curing of Tobacco is perfectly well understood in the United Kingdom the finest leaf that can be grown will be absolutely wasted and useless." The judges were Dr. J. Bell, F.R.S., Somerset House; Professor W. Fream, LL.D., College of Agriculture, Downton, Wilts; Dr. J. Augustus Voelcker, Mr. Henry F. Moore, Frome, Somerset; Mr. W. H. Wills, Mr. James Biggs, Mr. Louis Morris (Tobacco manu-

facturer), Mr. Algernon Gilliat (merchant), Mr. James Chambers, Mr. G. H. Ball (Tobacco brokers), and Mr. C. A. Müller (Tobacco importer).

WANTED.—The Editor would be obliged if any reader would kindly send him a copy of the *Gardeners' Chronicle* for June 18, 1881. Full price will be given.

STYRAX OBASSIA.

MESSRS. VEITCH are receiving the well merited reward of their enterprise in introducing through the late John Veitch, Mr. Maries, and others, a series of hardy Japanese plants of various kinds. A visit to the Japanese quarters at Coombe Wood is always a source of delight to those interested in beautiful or interesting plants.

Among their numerous introductions of this character there are none to surpass the very beautiful hardy shrub above-named. The shrub in question was first made known to the botanist in Siebold and Zuccarini's *Flora Japonica*, vol. i., t. 46 (1835), where a full description and illustration are given. As our illustration (fig. 14), conveys an accurate idea of the shrub, we need not enter into further detail save to point out that in Zuccarini's figure the inflorescence is shown more pendulous than in our drawing, which was taken by Mr. W. G. Smith from the cut specimens exhibited at one of the meetings of the Royal Horticultural Society in the spring, when it was awarded a First-class Certificate.

One peculiarity may also be mentioned, and that is the fact that the buds are concealed in the base of the sheathing leaf-stalks almost as in the Plane tree. The flowers add fragrance to their charms. The plant was first made known from the gardens of Japan only, but it has since been found wild on Fusi Yama and other localities in Japan, as well as in Corea. The word *Obassia* is from the Japanese, but we regret to be unable to give its meaning.

Other species, such as *S. officinale* (from which the drug Storax, used in incense, is, or was, procured), and *S. japonicum*, are grown in gardens, but the present species is superior to all in elegance.

TREES AND SHRUBS.

STRIKING KALMIAS.

THESE plants are easily propagated by cuttings of the young shoots inserted in sandy peat, under hand-lights and placed in a shady place; or, by seeds sown in shallow pans of sandy peat, and kept close in a frame until the seedlings are up, when they may be pricked off, and kept close again, until rooted afresh, and then gradually inured to the open air before planting out. Owing to their having a dense mass of fibrous roots, *Kalmias* may be taken up and potted after the bloom is set without doing them any injury; and if assisted afterwards by gentle heat, and well syringed, they flower freely in winter continuing in beauty for several weeks in succession. *Kalmia latifolia*, a species with broad leaves and red flowers, will be found most useful for forcing; *K. glauca*, purple flowers; *K. angustifolia*, narrow leaves and red flowers; *K. lucida*, *K. nana*, *K. angustifolia ovata*, are all worthy of a place in the American garden. *W. A. Hodge.*

RAISING OF EMBOTRIUM COCCINEUM FROM SEED.

Is your correspondent, "P. P.," at p. 8—writing in reference to this plant, sure that Mr. Bach has sown perfect seeds? In our experience here there has been no difficulty in the seeds germinating when we have been fortunate enough to get them, but the trouble has always been to get matured seeds. The seeds are, when matured, quite as large as that of the sweet Pea, but not so round. The peculiar twist of the stamens prevents easy fertilisation by insect agency; I have, therefore, with a camel's-hair pencil artificially fertilised the flowers, and have thus secured perfect seed. When the plant is very full of flower it is best to pick off most of the seed-pods,

when it will be found the remainder will often produce good seed without artificial aid. The best time for sowing is directly the seeds are ripe. I have kept them until spring, but have not been anything like so successful as when I have sown at once after the pods begin to crack or split in two pieces. There are many plants in Cornwall equal to, and larger in proportion, than the one your correspondent alludes to, but the difficulty of increasing them lies in getting the seed, and not in the seed germinating. Two seeds in a pod is the most I have seen; the blind scales of which the pod is full have been sown for seed in some cases, and of course resulted in failure. *Henry Mills, Enys, Penryn.*

FLOWERING OF EUCALYPTUS GLOBULUS.

There is now in the garden of Beaconhill House, Exmouth, Devon, a tree of *Eucalyptus globulus*, which in a few days will be a beautiful sight—at present there are some hundreds of flowers open and a large number of buds are about to expand. The height of the tree is about 30 feet, and at 6 feet from the ground, measures 24 inches in circumference. It was planted about seven years ago. Does not such a specimen speak well for our mild climate? *W. J. G.*

CULTURAL MEMORANDA.

DELPHINIUMS.

AT this season of the year there are few, if any, more strikingly beautiful plants in borders than Delphiniums, sending up, as they do when good varieties are obtained and cultivated, fine towering spikes of brilliantly coloured flowers, varying from scarlet to nearly all shades of blue. These remarks, of course, refer to the perennial kinds, of which there are now a great many, for besides the fine species that have been introduced, many hybrids have been raised, which have enriched gardens very considerably, and helped, where they are used, to make places much gayter than was possible without these tall showy plants.

Besides the numerous single kinds, there are several double sorts, and among the best of these may be mentioned Madame Henri Jacotot, Madame E. Geny, Roi Leopold, Michael Angelo, General Ulrich, Sphere, Trophy, Aureum, and Victor Lemoine. The finest of the singles are Belladonna—a lovely pale blue; the good old formosum, Gloire de St. Maude, Celestial, Coronet, Hendersoni, and magnificum. The only scarlet ones worthy of note are nudicaule and cardinale, both of which are very desirable, and were thought much of when they first made their appearance. These and all the other single perennial Larkspurs may be made to bloom much longer, and some of them almost continuously during the summer months, by cutting off the spikes immediately they have done flowering, and thus relieving them of their seeds, which are so exhausting to the plants on account of the quantity which they bear. Their freedom of bloom may be increased by giving them plenty of depth of soil, as they like to send their roots well down, and it is only when they can do this that they are able to withstand the dry weather. This being so, the places in the borders assigned them should be well broken up by digging out holes; and if the land is at all poor a heavy dressing of rotten manure worked in at the bottom, which they will find and feed on, when it is of the most use to them—at the time they come into flower. The way to propagate the Delphiniums referred to is by division, as they soon make strong spreading crowns, and these may be cut through easily by using a sharp spade, which should be done early in spring, just as the plants are beginning to grow; and that is also the proper season to remove any and replant, which is very desirable every three or four years, as they exhaust the soil in time; but this may in a measure be prevented by mulching around the crowns, or giving a dressing of rotten manure. Although Delphiniums cannot be depended on to come true from seed, it is a good plan to raise them in that manner, as

finer kinds than the parents may show themselves, and all are sure to be valuable for the wilder parts of the garden, or to plant alongside of shrubby walks—positions for which these stately plants are well fitted.

SEED-SOWING.

Seed of Delphiniums may be sown as soon as it is ripe, employing boxes or pans and ordinary light garden mould, covering it with a little sifted soil of the same description, giving water through a fine rose and place in a cold frame. The frame should be kept close until the young plants appear, when sufficient air should be admitted to secure a sturdy growth, and the young plants, when large enough to handle, be pricked out in boxes or on a sunny border a few inches apart. If 2 or 3 inches thick of good soil be placed on a hard bottom the plants will make a more sturdy growth, and will lift better for the final transplantation than would be the case were they allowed more scope for the roots to ramble and porous soil to grow in. The Delphiniums, like kindred subjects, succeed best in a good loamy soil resting on a porous subsoil. *H. W. Ward.*

NEWER VARIETIES OF DELPHINIUMS.

The gems of a collection of these flowers recently shown at a meeting of the Royal Horticultural Society by Messrs. Kelway & Sons, Langport, were Prince Oscar, deep blue, margined with bronzy-purple; Vosegus, rich bright blue, with slight margins of pale rosy-purple—a large single variety of great beauty; Mrs. Edgar Wild, blue exterior, the centre petals pale wine-purple; Ustane, delicate sky-blue, the centre pale blue, margined with delicate mauve, extra fine—a fine single flowered variety; Miss Pinney, very like the foregoing, but still distinct—a very fine variety; Lord Balfour, blue and rosy-lilac—very fine; Amelia, another fine single variety—colour bright pale blue; Imogen, pale blue, with slight edgings and dashes of pink—very fine; Frederica, fine bright blue, the top segments edged with pink; Lady Churchill, blue, slightly shaded with purple—very fine spike; Prince of Naples, blue and pinkish mauve; Sigrid Arnoldson, deep blue and rosy-mauve—very fine full spike; Lord Randolph Churchill, deep blue, shaded with mauve and pink—extra fine; and Valentia, a bright blue self. A better selection could scarcely be made than the thirteen varieties composing the foregoing list. *R. D.* [We have just received several spikes of very particular merit from Mr. C. Irvine, Jedburgh, to which we hope to refer next week. Ed.]

DIPLADENIA BREARLEYANA.

The dark green leaves of this evergreen stove climber contrast effectively with its large grandly coloured flowers, opening pink and changing to the richest crimson. The plant is of free growth, and produces from May to October its flowers freely, and which stand well above the foliage. Cuttings of the young growth taken off with a heel of old wood during the summer, and inserted in small pots filled with peaty soil having a surfacing of silver-sand, watered and placed in heat, will take root within a few weeks. They should then be potted singly into small 60-size pots, and returned to heat, giving water at the roots and pinching the shoots once or twice, to make them branch after the roots have pushed into the soil. Shift into larger pots before the roots get matted until the plants are placed in their flowering pots, using four parts of good fibry peat and one of a like description of loam, with a sprinkling of sand added; and train the young shoots to a suitable trellis. *H. W. W.*

THE WEATHER.—Mr. G. J. Symons, writing in the *Times*, points out that the rainfall for July, though continuous and heavy, is not unprecedented in amount; the minimum temperatures have not been excessively low, but the maxima have been lower than for thirty years. In London 7.22 inches of rain fell between June 4 and July 31, on forty-six days, so that the fall was five times as frequent and seven times as heavy as during the corresponding months of last year.

FLORISTS' FLOWERS.

CARNATION GERMANIA.

THIS very fine self-yellow Carnation, raised and distributed by M. Ernest Benary, of Erfurt, certainly answers the expectations formed of it when only flowers were seen last year. It is of a pure clear yellow, remarkable for its full substance and fine petal; and with a refinement of character apparent to the most casual observer. It is a good grower also, putting forth freely robust grass. It has been announced as a Tree Carnation, and probably can be had to bloom in the winter, though I think it should properly be regarded as a summer flowering type. In the general character of the flowers it resembles Pride of Penhurst. and it may perhaps have been raised from it; but it is apparently of more robust growth and better quality of flower, and is sweetly scented. *R. D.*

TREE CARNATIONS.

We have had a succession of blooms from a very small lot of plants up till now (July 21), and the summer flowering varieties being now in flower, there has been no break in the season of bloom. Not many years ago there was cause of complaint in the season of bloom being so short—less than a month of bloom for a whole year of labour! Now there need not be any complaint of lack of flowers at any season, the perpetual flowering varieties being so easily grown. The plants should now be in an open position out-of-doors, and not be allowed to suffer for want of pot-room. A neat stick should also be placed to each plant, and the young growing shoots kept quite free from green-fly. The main point in their culture is to keep a uniform state of growth, which they will make better out-of-doors until the end of September than under glass, when some of the plants will be coming into bloom. *J. Douglas.*

BOOK NOTICE.

AUTOUR DE MON JARDIN. Par Eugène de Duru. (Bureau, 11, Pont St. Laurent, Verviers.)

Among the crowd of books for the instruction of the intelligent amateur, who desires to gain a general insight into gardening procedures, we have rarely come across one better suited to its purpose than that whose title is given above. It is a dissertation on the general principles on which practical horticulture is based, and to those to whom the language in which it is written forms no bar, it will be found as pleasant to read, as it is sound in teaching. Clear, simple, and to the point, it is essentially well-written and not devoid of humour. It bears on every page the characteristics of an erudite and practised writer, while the practical details betray the hand of one who knows not only how to write about his garden, but also how to work in it. Its contents may be divined from the titles of the chapters, of which one is devoted to soil, air, and water; one to garden appliances, others to garden design, garden decoration, garden pests, and garden friends. A detailed table of contents and a full index complete an unpretending, but excellent work. A slight *lapsus* on p. 11, where nitrogen is spoken of as derived by the plant from the air, may be pointed out—a statement inconsistent with another and more correct one on p. 13, where the nitrogenous matters are rightly spoken of as entering by the root.

PLANTS AND THEIR CULTURE.

PELARGONIUMS.—Zonals which were struck in the spring and were subsequently potted into large 60's, and which for some time may have been standing in the open, are now in capital condition for potting up for winter flowering; the size most suitable is 32's. Employ sound loam with a liberal addition of bone-dust, a small quantity of decayed manure or leaf-soil, a sprinkling of soot, and as much sand as will give

porosity. In potting, press the soil quite firmly, and pinch off all flower-spikes, and stop any straggling shoots. Plunge the pots thinly in coal-ashes, and if in frames so much the better, as they are then quite under control.

Gesneras.—Tubers of *G. cinnabarina* which are now starting into growth should be shaken out of the old soil, and repotted. I like to put them into their flowering pots at once, any after assistance that may be required being given in the form of liquid manure. A rich porous soil suits them well, that is, one consisting of about one-half loam and fibry peat, with a large admixture of silver-sand. Owing to the hairiness of the leaves syringing is not advisable, for if there is any sediment in the water used it is sure to settle on them and spoil their appearance; and for the same reason try and keep them free from insects, as washing in any form is equally injurious. A good position is one near the glass in a light pit, with a mild airy temperature between 60° and 70°. Late plants or cuttings of *G. zebrina* and *G. refulgens* may be treated similarly, so as to come in with *G. cinnabarina*.

Hydrangeas.—The common *Hydrangea hortensis* is probably the most useful, and is possibly not seen to better advantage than when grown in a small pot with a single flower-head. For this purpose cuttings should now be put in, selecting strong, clean, and moderately well ripened shoots. Insert them singly in small pots, using a light loamy compost. Give a good watering, and if the leaves are large and likely to flag support them by inserting a few small stakes round the edge of the pots, and run a bit of bast round them. It is well to try and preserve the leaves, for if they fall prematurely the cuttings take longer to root, and they are more liable to miss flowering when started in the spring. A frame placed on a gentle hotbed over which a few inches of plunging material has been spread is a good place to root the cuttings in; shade them from bright sunshine, and maintain a genial, growing atmosphere, never allowing the cuttings to get over-dry, yet giving sufficient air to expel superfluous damp, otherwise the leaves would be apt to decay. In a few weeks they will be nicely rooted, and then more air should be given until they can stand full exposure. If large 60's have been used for the cuttings, this size will be large enough to winter in. During the winter months a cool, airy position, where frost is excluded, suits them well; but if smaller pots have been used, pot the plants soon after they are rooted, and again when started in the spring; 5 and 6-inch pots are large enough. A rich loamy compost should be afforded them. This season may be prolonged by periodically introducing batches into a mild heat; they usually show flower after a few pairs of new leaves have been made. There is also a white-flowered variety, Thomas Hogg, and a variegated variety of *hortensis*, both of which are worth growing, but they look best as small specimens. Old specimens which have flowered are better stood out-of-doors in summer-time; but a few degrees of frost will, however, not do them any harm. *F. Ross, Bletchingley, Surrey.*

HOME CORRESPONDENCE.

THE BEGONIA AS A BEDDER.—I can fully endorse all that your excellent correspondent, Mr. J. Horsefield, has said, at p. 94, in your last issue, respecting the superiority of these plants over Pelargoniums as summer bedders. The year 1887 will long be remembered as an unusually hot one, when the general floriferousness of the Tuberous Begonia was thought by some to be due to the warm summer; but that cannot be said of the present season, and, notwithstanding the heavy rains, the Begonias are far superior to the Pelargonium in brightness, indeed they are the brightest beds in our garden at the present time. I have not tried the groundwork for the beds recommended by your correspondent, as we usually plant the Begonias so close together that when they are fully developed the plants cover the ground, and they are liked best when grown in masses. Any one contemplating the bedding out of tuberous Begonias, raised in the usual way, from a packet of mixed seeds, would do well to grow them the first season in the reserve garden, as by so doing plants of uniform growth can be selected. I should feel grateful to any one of the correspondents of the *Gardeners' Chronicle* if they would kindly give me the names of a few of the newer tested free bloomers amongst crimson, scarlet and pink varieties.

I still retain the old Vesuvius, Monarch, Sedeni, &c., on account of their floriferousness. *D. Elkins, Trewsbury House, Cirencester.*

THE POTATO DISEASE.—As a lady's postscript is said to contain the most important item in her letter, so must the postscript to my recent report on the condition of the Potato crops in this district be of more importance than the report itself, for since that was penned, and especially during the past few days, the ordinary form of disease has shown itself in a rampant state in our Potato breadths, and in all directions, in some cases the leafage being already quite blackened. That such should be the case is hardly to be wondered at, for the downpours of rain are so frequent and so heavy, the sky is so clouded, and the average temperature so low, that the weather conditions are those of November rather than of July. In retentive soils the water has converted the earth into the consistency of brick clay, the tubers existing literally in water. With such surroundings, there is now too much reason to fear that the Potato disease will this year present itself in its very worst form of Potato rot. *A. Dean, Bedford, July 26.*

CABBAGES.—I would like to ask "A. D." in what way Sutton's Early Gem Cabbage differs from Little Pixie? In the summer of 1887 I grew both varieties on the same border, sown and planted on the same day; neither in form, earliness, nor colour, could I detect the slightest difference. As to flavour I will not speak, I have always found Little Pixie A 1 in that respect, but it is essentially a summer or early autumn Cabbage. To stand the winter I prefer Webb's Emperor, a variety that has never failed me. *John Wilkes, Crewell Hall Gardens, Stafford.*

WHICH IS THE EARLIEST PEA?—When authorities differ, who shall decide? We gardeners naturally look to the horticultural writers to keep us *au fait* with the best varieties of vegetables required for the different purposes. As one of the old school, I was much disappointed in reading such a meagre account of early Peas in the report of the trial grounds of a large London seed firm by "R. D." I know it used to be a rule among London houses to prove the various kinds in their different classes side by side for comparison, and still believe it to be so. Now the question that naturally arises is, Where are the Ringleader, First Crop, and the thousand and one novelties which have been dinned in our ears for years past as being so much earlier than the old Dillestone's Prolific and Improved Sangster's No. 1? I for one cannot understand how these old varieties should come to the fore again if the descriptions given of the later introductions were correct and true. Surely it must be a mistake to write Veitch's First Early, Harrison's New Early Eclipse, and the other round blue-seeded named, as being forms of Sangster's No. 1. They have always appeared to me different in height, habit, shape of pod, and colour, in every stage of growth; certainly they are of the form, but it is only in the shape of the Pea in its dry state, both being round. Besides, in the catalogue of the firm in question, they are described as being much shorter in the haulm. The writer favours us with the information that the Scimitar is a desirable variety, with a tendency to run to a tall type. Is this a new early variety or another version of the lamented death of Queen Anne? If so, it is surely out of place in a report on early Peas. We know it is not always advisable for one firm to push into notoriety the introductions of other firms, and I cannot help thinking the reporter in this instance has withheld some of the most interesting parts of his observations, as there are so many leading varieties in commerce not noted. *An Old Gardener.* [We drew attention to the discrepancy here noted. Ed.]

THE LIFTING OF DAFFODILS.—Having read with interest the remarks of Mr. J. Walker and Mr. E. Jenkins on the annual lifting of Daffodils, I would add my mite for the benefit of the readers of the *Gardeners' Chronicle*. Both gentlemen may be right in a certain sense. I fully concur with Mr. W. Burbridge that "the best plan in practice is to find out the best course to pursue in one's soil." No hard and fast lines can be laid down respecting either the planting or lifting of Daffodils—soil, climate, and situation must be taken into consideration; deep planting is by some recommended, but my experience in the Isles of Scilly is on the contrary. We seldom plant deeper than 2 inches, and in some cases not so deep as that. I

consider that but few Daffodils require to be lifted within three years; *N. pallidus præcox* and *Mary Anderson* may be excepted. If flowers be the main object in growing, they would produce a greater quantity of flowers during that time than if lifted annually, and the offsets taken off and planted singly; as the offsets flower sooner by being left on to the parent bulb than by being removed. But if marketable bulbs are required, then I would say lift annually, and remove the offsets. I cannot endorse the statement of Mr. Walker, that for general purposes bulbs and flowers are all the better for being lifted annually; nor can I that of Mr. Jenkins as to leaving in the ground for more than three years *Poeticus ornatus* and *P. plenus*: my experience with these two varieties is that if left for longer than that time the flowers deteriorate, and many are apt to come blind; but I may not be right for all soils and situations. With us the soil is light and the climate mild, so mild that from the open ground we cut *Soleil d'Or* the first week in January, and other *Polyanthus* varieties soon follow; in the trumpet section *pallidus præcox*, *Ard Righ*, or *Irish King*, and *obvallaris* the second week in February; and about the latter part of the month *Golden Spur*, *Scoticus*, *princeps*, *Henry Irving*, *variformis*, *spurius*, and several others. *J. C. Thomkin, Isles of Scilly.*

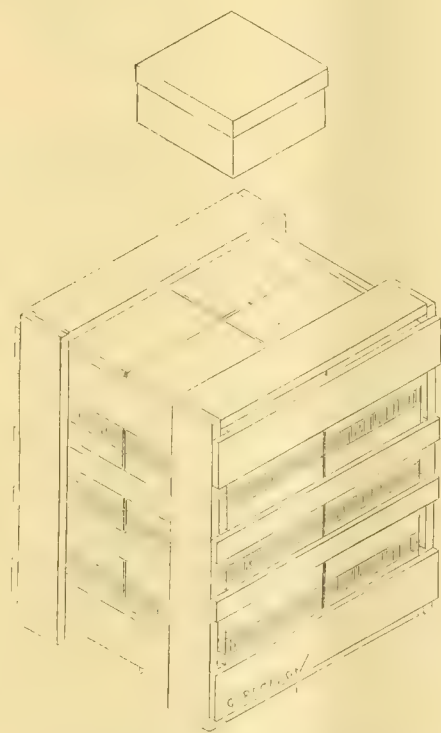


FIG. 15.—CRATE AND BOXES FOR THE TRANSIT OF STRAWBERRIES AND CHERRIES. (SEE P. 130.)

CARNATIONS.—The season of the Rose is not at an end, and we have that of the Carnation and its near ally, the Picotee, upon us; but the flowers we observe on the stands at special exhibitions of that flower are not the flowers of our borders or the cottage garden, but the produce of plants grown in pots from first to last. The flowers are very pretty, very refined, the colours regularly distributed over the flower, and the form rendered still more so by the art of the exhibitor; but the "cut and come again" plants in the border of stout Clove Carnations—selfs like *Alice Ann Mary*, *Dandy Dimont*, *Dora*, *J. Arthur Wellington*, and *Mrs. Huson Morris*, or fancies, like *Adonis*, *Satellite*, *Touchstone*, and *Mrs. Champneys*—scarlet bizarres, pink and purple bizarres, and flakes in purple, scarlet, and rose—are flowers which every one should grow, and in quantity. The Picotee is a weaker-growing plant in some soils than is the Carnation, but by proper attention to drainage and to giving them and the Carnation also a warm position, the former will grow quite satisfactorily. Warmth and thorough drainage at the root being essentials is one reason that the florists grow their show flowers on plants in pots.

The Italians and Tyrolese, who are great admirers of the selfs, especially of selfs of the crimson and red shades, which assort so well with their rich red-brown skin tints, grow the Carnation in their windows and balconies, and the flower in its season can be found in cottage and villa alike. But in one respect they widely differ in their manner of treatment—they do not try to make the flower-stems, which naturally droop as the flower-buds get heavier, stand upright by means of sticks, as we in our stupidity do, but they let the flowers fall about in *negligée* profusion, hanging over the sides of the quaint pots and below the window sill. Let our gardeners try their hand at growing the plants in quantity in pots for window-boxes and open-air stages, employing only vigorous growers and those with powerful perfume, and their employers will greatly appreciate their endeavours. *M. W.*

BROCCOLI GILBERT'S VICTORIA.—I can assure your correspondent "J. H." that the reason I did not again refer to this variety was not in the least owing to disappointment, as the opposite was the case. The breadth of plants which I mention in my notes, *Gardeners' Chronicle*, June 9 last, as looking so very promising not only turned in well, but supplied us with fine heads fully a fortnight after all others were finished. The lateness, and very mild flavour of the Victoria, are favourable points. This Broccoli and Dean's Snowball Cauliflower have filled up what would have been a long break in the supply of these vegetables. Of the latter I made a sowing in heat early in March, planting out in the quarters in April. The weather was not favourable to growth, but notwithstanding the heads turned in well, supplying us with beautifully compact white heads, not large, but firm. Another excellent point in favour of this variety is that, owing to its making but little leafage, it may be very closely planted; not more than a foot apart is quite sufficient. *H. Markham.*

DISEASE OF ORNITHOGALUM.—Re the *Ornithogalum* fungus, figured some time since, a peculiar feature should be recorded, that is, that the leaves only are affected. After they have been quite destroyed the flower-scapes develop in a perfect manner. So far as I have seen, only *O. nutans* is affected by it. *T. Smith, Daisy Hill Nursery.* [This disease, as caused by *Heterosporium ornithogali* (see *Gardeners' Chronicle*, May 26, 1888, p. 658, and June 23, 1888, p. 781) is, as a correspondent informs us, confined to the leaves. At least, it is so in our correspondent's case, for he informs us that after the leaves "have been quite destroyed the flower-scapes develop in a perfect manner." *W. G. S.*]

SOCIETIES.

ROYAL HORTICULTURAL.

Scientific Committee.

JULY 24.—Dr. H. Scott in the chair. Present: Messrs. Pascoe, W. G. Smith, G. F. Wilson, J. O'Brien, D. Morris, Dr. Hogg, and Dr. Masters.

Heteroicium in Fungi.—Mr. Plowright, in acknowledging the letter of thanks addressed to him some time since by the chairman, on behalf of the committee, made the following remarks:—"It was my hope when I began my cultures that the general outcome would tend to a lessening of the number of the species of the *Uredinæ*. This, however, is not the case; on the contrary, I feel convinced that physiological investigation will show that these parasitic fungi are much more numerous than we at present imagine. To take one instance only, that of the *Uromyces*, which occurs upon Beans. It is now generally thought that one species is common to most of the Leguminosæ. I have made a number of cultures on this point, and find that when *U. fabæ* from the common Bean haulms is placed on young plants of Bean, Pea, *Vicia cracca*, *V. sativa*, *Lathyrus pratensis*, and *Ervum hirsutum* *Æcidia* are only produced on the Bean and Pea; and further, that the *Uromyces* on *Ervum hirsutum* applied to the same host plants produced its *Æcidium* on *Ervum* only. In the same way the *Puccinia* which occurs upon the Compositæ is, I find, not one species, as is generally supposed, but that *Uredosporæ* from *Centaura nigra*, for instance, will not affect *Taraxacum officinale*, neither will the *Uredosporæ* of *T. officinale* infect *Apargia autumnalis* nor *Lapsana communis*. Before the true affinities of these species can be satisfactorily determined numerous and long-

continued biological investigations will have to be made for the hasty grouping together of the various forms, because they occur on allied host plants, is as liable to error as the opposite plan of making every form a species because it occurs on a different host plant."

Malformed *Cypripediums*.—Dr. Masters exhibited drawings and made comments on several malformed *Cypripediums* which had been referred to him at a previous meeting. The principal peculiarities, in different flowers, were the following:—imperfect development of the lip; adhesion of the lateral petals to the sides of the column, and consequent displacement; disjunction of the lateral sepals, and presence of two lips in one flower. The adventitious lip might be the result (a) of additional development, (b) of subdivisions of the primary lip, (c) of the presence in the guise of a lip of one of the outer stamens (A 2), which is usually suppressed. Another flower had three staminodes, one corresponding to A 1, and two lateral ones as usual, the stigma being distinctly three-lobed. From Mr. Kimball came a drawing of *C. Lawrenceanum*, in which the parts of the flower were arranged in crossed pairs. The most peculiar flower was one of *C. barbatum* exhibited by Mr. O'Brien. In this the general form was triangular, the upper sepal was wanting, the two lateral ones were present, the two lateral petals were also present, but in the shape of broadly ovate segments, more like sepals in shape, but having the position of petals, as well as the little tufts of hairs on the margins, characteristic of the petals in this species. The column was erect with two lateral shields concealing the anthers, while the ordinary median staminode was absent. The style was erect, cylindric, scarcely lobed at the top, and the ovary entirely absent.

***Passeiflora kewensis*.**—Dr. Masters showed drawings of this hybrid, as also of *P. hybrida floribunda*, to show how closely similar they were. *P. kewensis* × was known to be a hybrid out of *P. kermesina* by *cærulea*, and *P. hybrida floribunda* in all probability had the same origin.

Movements in the Shoots of *Firs*.—Dr. Masters showed diagrams representing the movements, not only of the leader shoot of *Abies bifida* (firma), but also of the lateral shoots, and explained that while the leader shoot gyrates in irregular ellipses, its point being alternately raised or depressed, the lateral shoots not only move from one point of the compass to another, and are elevated or depressed, but are also rotated on their own axis, the leaves likewise being raised or depressed at various angles. These movements of shoots and leaves were very complex, and in all probability dependent on different causes.

Growth of *Philadelphus*.—Dr. Masters exhibited a drawing of a plant of *Philadelphus* raised from a cutting in a pot. On shifting the cutting into a larger-sized pot, it was found that a dense leath of roots had proceeded from one single point only of the callused end—not from the entire circumference. One lateral shoot only was, in the first instance, produced from the side of the cutting, and this shoot was on the opposite side to that whence the tufts of roots issued. Not till this one shoot had grown to a large size, and produced three or four pairs of leaves with internodes of considerable length between them, was a second shoot produced. From the base of the original cutting, opposite to the first, a third and a fourth were also produced regularly, first on one side, then on the other side of the plant, and nowhere else.

***Araucaria brasiliensis*.**—Professor Henriques, of Coimbra, sent a photograph showing two fine trees of this species growing in the open air in the Botanic Gardens of the University of that city.

The Plymouth Strawberry.—Dr. Masters showed ripe fruits of this curious monstrosity, grown from plants presented to him by Mr. G. F. Wilson. It is an alpine Strawberry, in which all the parts of the flower are more or less represented by leaves. The plant was mentioned by old botanical writers, but afterwards disappeared, or was so completely overlooked that its very existence was assumed to be a myth. Of late years, however, the plant had reappeared in several gardens, and the correctness of the old writers has been vindicated.

Hybrid *Clematis*.—From Mr. Noble came specimens of his *C. Jackmanni alba*. The ordinary Jackman *Clematis* produces its purple flowers in late summer on the young wood of the year. The white variety, however, produces flowers in the spring on the old wood of the preceding year, and which are more or less irregular in character, and again flowers on the herbaceous shoots later in the summer, thus showing in one and the same plant the characteristics of two

distinct sections of the genus, and affording evidence of the hybrid origin of the plant in question.

Stag Beetle.—From Mr. Roupell came a specimen of *Lucanus cervus*, stated to be very abundant this season in certain localities. While the perfect insect, in spite of its formidable appearance, is harmless to plants, its larva is very destructive to the wood of trees.

Trials at Chiswick.

A MEETING of the Fruit and Vegetable Committee was held at Chiswick on July 26. Present:—Harry J. Veitch, Esq., in the chair; Messrs. Lee, Warren, Pearson, Ross, Rivers, Marshall, Norman, and Denning.

The collection of Peas growing in the garden was further examined. Dr. Hogg, from Messrs. J. Veitch & Sons, was noted as a very fine stock. Midsummer Green was condemned as worthless. Optimum (Laxton), a tall green Marrow, having large handsome pods resembling Telegraph, was approved. Prince of Wales was noted for its extraordinary cropping qualities. Pride of Kent (Divers) and Gloria Mundi (Yates) were considered to be Ne Plus Ultra. The Abbot (Hurst & Son), a wrinkled green Marrow resembling Telegraph in appearance, but of superior quality, was greatly approved, and received a First-class Certificate. Reliable (Laxton), a dwarf green wrinkled Marrow of the Scimitar type, was approved for its free cropping qualities and well filled pods. Empress (Eckford), a tall green wrinkled Marrow, was approved as a good cropper and of good quality. Ne Plus Ultra Seedling (Culverwell) was considered a good stock of the old variety.

A collection of autumn-sown Onions was inspected, the various types and selections of White Spanish, autumn-sown, were noted as superior to the Tripoli section this season. Bailey's selected White Spanish (Veitch) was highly commended by the committee, being considered the best selection.

Tomatos were inspected. Messrs. J. Veitch & Sons submitted examples of Raspberry Superlative, referred from the meeting at Westminster, together with examples of Lord Beaconsfield and Semper Fidelis for comparison. They were considered quite distinct. Superlative, being far superior, was awarded a First-class Certificate.

Mr. T. F. Rivers submitted examples of a seedling Peach and Nectarine raised from the Nectarine Peach. The Nectarine was remarkable for its enormous size, being 10½ inches in circumference, and 10 oz. in weight.

NORTHAMPTONSHIRE HORTICULTURAL, NORTHAMPTON.

NORTHAMPTON, JULY 19 AND 20. — The above Society's show was held on land adjoining the show-ground of the County Agricultural Association, and was in every respect an excellent all-round exhibition, the liberal prizes judiciously offered in the chief classes being "an inducement to exhibitors living at considerable distance from the town to compete."

For twelve stove or greenhouse plants, six in bloom and six fine-foliage, Mr. Cypher, of Cheltenham, staged a beautiful lot of plants, notably those in flower, which consisted of *Erica depressa*, as fresh as in May, and most densely bloomed—probably as fine an example as has ever been staged; *Erica Parmentieri rosea*, also in fine condition; a huge plant of *Phœnecoma prolifera* Barnesii, in splendid health and profuse bloom; *Ixora salicifolia*, now seldom seen, was equally well done; these, with excellent plants of *Stephanotis floribunda* and *Allamanda nobilis*, were all in Mr. Cypher's best form. The foliage plants consisted of Crotons, Palms, and a fine example of *Cordyline indivisa*. The 2nd prize went to twelve capital plants from Mr. Wm. Finch, gr. to Jas. Marriot, Esq., of Coventry, who had a very fine plant of *Croton mortfortianensis* splendidly coloured. Groups of plants, 20 feet by 12 each, were a most attractive feature, and were so arranged as to fill the central space of a marquee set apart for them. This is an excellent system of arrangement, as it affords scope for variety of arrangement.

Mr. Parker, of Rugby, was to the front with a very light and tasteful group, the central portion of which could hardly be surpassed either in choice of material or design; well-grown plants of *Cocos Weddelliana* here played a most important part, associated with *Eulalia japonica variegata* and white Lilies; flowering plants in season were fully em-

ployed, without too much reliance being placed on choice exotics. Mr. A. Webb, gr. to J. H. M. Sutton, Esq., Kelham Hall, Newark, was 2nd, his group showing considerable taste in its design—the addition of slightly more colour to enliven it would have given a better finish. Mr. Cypher was 3rd, with a choice lot of plants, prominent among which were several Orchids; a few more plants of light growth would have added to the effect of this group.

A similar class for groups, but limited to places within thirty miles of Northampton, was also well filled with exhibits. With the same limitation, Mr. Finch gained the 1st position with ten stove or greenhouse plants showing well-grown specimens of medium size. The same exhibitor also took the 1st in the previously mentioned group class. The classes provided for exotic Ferns were well filled, as were also others for Begonias, zonal Pelargoniums, &c.

Among cut flowers the dinner-table decorations by Mr. Cypher formed a prominent feature, and which secured for him an easy victory over Mr. Parker, whilst Messrs. Perkins, of Coventry, won the 1st prize with a bouquet of tasteful design. Cut flowers of hardy herbaceous plants were shown in fine condition. Mr. Goldsmith, gr. to Sir E. Loder, Bart., Floore House, Weedon, was 1st, with a collection which consisted of the best things in bloom, and those staged in an admirable manner. The competitors in the classes of stove and greenhouse cut flowers would do well to imitate on a future occasion Mr. Goldsmith's style in arranging their exhibits.

Messrs. Perkins exhibited Roses in classes for twenty-four and twelve respectively, gaining 1st in each instance.

The fruit classes were fairly well filled, two strong collections of almost equal merit being staged in the open class provided for eight distinct kinds, and came from Mr. Blair, gr. to the Duke of Westminster, at Trentham; and Mr. Edmonds, gr. to the Duke of St. Alban's, Bestwood; the first-named had a fine fruit of Queen Pine, Duke of Buccleuch Grapes, and a good Melon, an extra fine dish of Plums, with Peaches and Nectarines of more than average quality. Mr. Edmonds was strong in black Grapes, Peaches, and Nectarines, showing also a good Melon, but was weak with his Pine-apple.

Mr. Goldsmith showed well in other fruit classes, taking 1st for Peaches, Nectarines, Cherries, and Strawberries, the latter being very fine fruit of James Veitch.

Mr. Birch, gr. to the Marquis of Northampton, Castle Ashby, was 1st, with some fine bunches of Black Hamburg Grapes, and in the class for one Melon.

Collections of vegetables were staged in admirable condition by Mr. Robinson, gr. to T. Howard, Esq., Bedford, who was 1st for twelve kinds; and Mr. Underwood, gr. to J. S. Bouverie, Esq., Delapre Abbey, for eight; whilst in a special class, the prizes being offered by Messrs. Sutton & Sons, Reading, Mr. Goldsmith took a similar position. The cottagers' products at the Northampton show are invariably good, and this occasion was no exception to the rule.

Superintendents of flower shows please note. At the recent Northampton show the judges were able to commence their duties at 10 o'clock by a judicious arrangement on the part of the committee, who insisted that one tent should be cleared at that hour, and so on with the others in rotation. The work of judging was thus far easier, and was completed well within time. H.

BISHOP'S WALTHAM HORTICULTURAL.

THE annual exhibition of this Society took place on the 25th ult. in Swanmore Park, the seat of W. H. Myers, Esq., whose gardener, Mr. E. Molyneux, has gained much renown as a *Chrysanthemum* exhibitor.

The show, which was unfortunately held on a very rainy day, consisted chiefly of cottagers' exhibits of vegetables, and if Potatoes be excepted, all were exceptionally fine for the season. Carrots, Turnips, Onions and Peas were excellent, the varieties shown most largely being the Early Nantes Carrot, Six-week Turnips, Reading Onions, and Duke of Albany Pea. The show was fixed at too early a date for Potatoes, and they were poor indeed. Small fruits were of good quality. Many of the dishes of Black Currants approached in size the berries of a West's St. Peter's Grape, and there must be some ingredient in the soil of the district peculiarly suitable to this fruit.

As regards flowers, the feature of the show was

undoubtedly the collection of six, twelve, and eighteen varieties of hardy cut flowers, the cottagers' exhibits in these classes being quite on a par with those of the amateur and gentlemen's gardeners, a fact due in no small degree to the example set of growing them largely in the Swanmore Gardens, and also by the offer of special prizes by Mr. Myers. I give the names of the most successful stand of eighteen varieties, sent by Mr. Chequer, gr. to Mrs. Franklyn, Shedfield Lodge; they were—*Achillea millefolium rubrum*, *Agrostemma Flos-Jovis*, *Campanula persicifolia alba fl.-pl.*, *Coronilla varia*, *Delphinium altissimum*, *Gaillardia grandiflora*, *Galega officinalis alba*, *Lathyrus latifolius alba*, *Lilium croceum*, *Linaria asararoides splendens*, *Lychnis chalcedonica*, *Monarda didyma*, *Pentstemon barbatus*, *Statice species*, *Silene armeria*, *Stenactis spiciosa*, *Veronica spicata alba*, *Yucca gloriosa*.

Table decorations were on the whole good; particularly so was that composed of wild flowers from Miss M. Wilson, which obtained the 1st prize, Mrs. Medlicott, of the Vicarage, Swanmore, being a good 2nd.

SCOTLAND.

THE SCOTTISH HORTICULTURAL ASSOCIATION AND THE ROYAL BOTANIC GARDENS, EDINBURGH.

AN extraordinary meeting of the above Association was held in the Queen Street Hall, Edinburgh, on Thursday, the 26th ult., to protest against the transference of the Botanic Garden from the Crown to the University, as proposed in the Universities (Scotland) Bill. Mr. John Methven, of Thomas Methven & Sons, occupied the chair, and, in addition to a strong and representative muster of members of the Association, there were present Bailie Turnbull, Councillors Robertson, Ritchie, Macpherson, and Anderson, Convenor White, Dr. Craig, President of the Edinburgh Botanical Society, and Dr. Paterson, Bridge of Allan.

The Chairman, in opening the meeting, disclaimed on his own part and that of the Association any hostility to the Universities Bill as a Bill. The measure would, no doubt, be beneficial to the Universities of Scotland; but the several clauses in it proposing the transference of the Botanic Gardens from the Crown to the University of Edinburgh could not but be injurious to horticulture in Scotland. It was simply the handing over of an important public institution from a public and responsible body to a private and irresponsible body. The public, in the event of the transference clauses of the bill being carried, would have no power to influence the administration and maintenance of the gardens, and this he considered would be deplorable in the interests of horticulture and the public generally.

Mr. Malcolm Dunn, The Gardens, Dalkeith, moved—"That this meeting views with alarm the proposal in the Universities (Scotland) Bill, transferring the Royal Botanic Gardens from the Crown to the University of Edinburgh, and protests, in the interests of horticulture in Scotland, against the proposal." Nothing, he thought, could be more fraught with harm to the efficiency and usefulness of the gardens than to disestablish them, as was proposed by this bill. The gardens were the centre and the source of all the scientific branches of gardening. It would, he considered, be a lamentable loss to the community at large, and particularly to horticulturists, if the management of the gardens were limited only to the providing for the requirements of medical students, and he hoped the time would never come when none but these students would be allowed to enter these gardens, and avail themselves of the rich resources of information they contained under the present management.

Mr. Alex. Mackenzie, Warriston Nursery, seconded the resolution, and expatiated with much force on the benefits conferred on horticulture during the past thirty years by the gardens.

Bailie Turnbull spoke in support of the resolution on public grounds, and deplored the proposal to deprive the public of Edinburgh of its finest outdoors resort.

Dr. Paterson, speaking as an old graduate of the University, held that it would be an additional burden to that institution without any compensating advantages were the contemplated change carried out; and looking upon the matter as of national importance, called upon every Scotsman to protest against the transference.

Dr. Craig pointed out that no one interested wanted the proposed change except the Government, and they had failed to give any reason for the proposal. The authorities of the University viewed the proposal with alarm, and had protested against it, so also had the Corporation of Edinburgh. He assumed that economy was at the bottom of it, and if this were so Government should frankly say so.

Mr. A. D. Mackenzie, Edinburgh, moved—"That this meeting petition Parliament against the transference clauses in the bill, and authorise the Secretary to forward the petition to the member for the Western Division of Edinburgh for presentation to Parliament." Were the gardens handed over to the University, he said, without adequate provision for their proper maintenance, a fraud would be committed by the Government on the public.

Mr. Matthew Todd, in seconding the resolution, said that Professor Bayley-Balfour had well expressed the effect of the change by the terms "transference meant arrest," when speaking in his inaugural address of the efficiency and expansiveness that should be provided for in the future administration of the gardens, and held that if there were no progress there must be declension.

Mr. Andrew Taylor supported the motion, and said that the gardens could not be exclusively given over to the University, because they were, out-and-out, national property, and they ought to be kept open as a distinct national institution.

Both the resolutions were unanimously adopted, and a vote of thanks to the Chairman brought the meeting to a close.

ROYAL SCOTTISH ARBORICULTURAL SOCIETY.

The thirty-fifth annual general meeting of the Royal Scottish Arboricultural Society will, by the kind permission of the Regius Keeper, Professor Bayley-Balfour, be held in the class-room at the Royal Botanic Gardens, Inverleith Row, Edinburgh, on Tuesday, August 7, at 11 A.M.

The Council have arranged that, immediately after the meeting terminates, members who may be desirous to do so, will have the opportunity afforded them of inspecting the Arboretum and Inverleith Nurseries.

The annual dinner will be held in the "Waterloo" Hotel, Waterloo Place, on Tuesday, August 7, at 6 P.M. The Council of the Society have arranged with the committee in charge of the "Dr. Hugh-Cleghorn" testimonial, that the presentation be made to Dr. Cleghorn at the dinner.

Annual Excursion.—The eleventh annual excursion of the Society will take place, by the kind permission of the proprietors, to several estates in Roxburghshire, on August 8 and 9.

Ballot List, August 7.—The names of the proposed new office-bearers (recommended by the Council) are printed in *italics*; those who retire by rotation are marked by an asterisk.

President.—*The Right Hon. the Earl of Hopetoun, Hopetoun House, Linlithgowshire.*

Vice-Presidents.—*Hugh Cleghorn, M.D., LL.D., F.R.S.E., of Stravithie, St. Andrews; Malcolm Dunn, The Palace Gardens, Dalkeith; the Right Hon. Lord Balfour of Burleigh, Kennet House, Alloa; William McCorquodale, Forester and Wood Surveyor, Scone, Perth; D. F. Mackenzie, Factor, Merton Hall, Liberton; Hugh Cleghorn, M.D., LL.D., F.R.S.E., of Stravithie, St. Andrews.

Council.—*John McLaren, Inspector and Valuer of Woods, Hawthornvale, Winchburgh; *D. F. Mackenzie, Factor, Morton Hall, Liberton; *James Watt, J.P. (of Messrs. Little & Ballantyne), Nurseryman, Carlisle; *John Lamont, Nurseryman and Seedsman, Edinburgh; *Charles Buchanan, Overseer, Penicuik House, Penicuik; Robert Lindsay, Curator, Royal Botanic Garden, Edinburgh; John Methven (of Messrs. T. Methven & Sons), Nurseryman

and Seedsman, Edinburgh; Robert Hutchison F.R.S.E., of Carlowrie, 29, Chester Street, Edinburgh; James Robertson, Wood Manager, Panmure, Carnoustie; Andrew Slater, Overseer, Haystoun, Peebles; Robert Baxter, Forester, Dalkeith Park, Dalkeith; John T.M. Laren, Overseer, Kennet, Alloa; John McGregor, Forester, Ladywell, Dunkeld; Thomas Wilkie, Forester, Tynninghame, Prestonkirk; Daniel Dewar, Forester, Beaufort Castle, Beaully; John McLaren, Inspector and Valuer of Woods, Hawthornvale, Winchburgh; Charles Buchanan, Overseer, Penicuik House, Penicuik; James Alexander (of Messrs. Dicksons & Co.), 1, Waterloo Place, Edinburgh; John Allan, Forester, Dalmeny Park, Edinburgh; James Cook, Land Steward, Arniston, Gorebridge.

Secretary and Treasurer.—William J. Moffat, 5, St. Andrew Square, Edinburgh.

Auditor.—John Ord Mackenzie, of Dolphinton, W.S., 9, Hill Street, Edinburgh.

THE WEATHER.

[Accumulated temperature indicates the combined amount and duration of the excess or defect of temperature above or below 32° F. for the period named, and is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.				
	Above or below the Mean for the week ending July 30.	ACCUMULATED.			
		Above 42° for the Week.	Below 42° for the Week.	Above 42° difference from Mean since Jan. 3, 1888.	Below 42° difference from Mean since Jan. 3, 1888.
Principal Wheat-producing Districts.	Day-deg.	Day-deg.	Day-deg.	Day-deg.	
0. SCOTLAND, N. ...	4 below 65	0	— 146	+ 201	
1. SCOTLAND, E. ...	4 below 75	0	— 298	+ 157	
2. ENGLAND, N.E. ...	4 below 90	0	— 333	+ 73	
3. ENGLAND, E. ...	4 below 116	0	— 259	+ 154	
4. MIDLAND COS. ...	5 below 99	0	— 318	+ 150	
5. ENGLAND, S. ...	2 below 120	0	— 351	+ 204	
Principal Grazing, &c., Districts.					
6. SCOTLAND, W. ...	2 below 93	0	— 207	+ 107	
7. ENGLAND, N.W. ...	4 below 96	0	— 250	+ 117	
8. ENGLAND, S.W. ...	4 below 106	0	— 318	+ 254	
9. IRELAND, N. ...	4 below 90	0	— 199	+ 67	
10. IRELAND, S. ...	3 below 100	0	— 190	+ 113	
— CHANNEL ISLANDS	2 below 120	0	— 263	+ 154	

DISTRICTS.	RAINFALL.			BRIGHT SUNSHINE.	
	More or less than the Mean for the Week.	No. of Rainy Days since Jan. 3, 1888.	Total Fall since Jan. 3, 1888.	Percentage of possible Duration for the Week.	Percentage of possible Duration since Jan. 3, 1888.
Principal Wheat-producing Districts.	Tenths of Inch.		Ins.		
0. SCOTLAND, N. ...	2 less	135	21.1	16	30
1. SCOTLAND, E. ...	1 less	119	18.0	13	30
2. ENGLAND, N.E. ...	14 more	111	16.5	17	26
3. ENGLAND, E. ...	13 more	114	14.7	29	23
4. MIDLAND COS. ...	8 more	106	15.1	22	26
5. ENGLAND, S. ...	13 more	107	16.1	23	27
Principal Grazing, &c., Districts.					
6. SCOTLAND, W. ...	5 more	111	24.2	17	1
7. ENGLAND, N.W. ...	10 more	114	15.9	13	28
8. ENGLAND, S.W. ...	9 more	117	19.5	26	33
9. IRELAND, N. ...	14 more	116	21.1	22	28
10. IRELAND, S. ...	13 more	109	22.0	32	32
— CHANNEL ISLANDS	11 more	132	18.0	25	37

THE PAST WEEK.

The following summary record of the weather for the week ending July 30, is furnished from the Meteorological Office:—

"The weather has continued in a very unsettled and changeable state, with heavy falls of rain at nearly all the Irish and English stations, and severe local thunderstorms.

"The temperature has remained considerably below the mean, the deficit ranging from 2° in 'England, S.,' 'Scotland, W.,' and the 'Channel Islands,' to 5° in the 'Midland Counties.' The highest temperatures were, as a rule, registered either on the 24th or 25th, when the thermometer rose to 67° or 68° in the 'Grazing districts,' and to between 69° and 72° in the 'Wheat-producing' districts. Towards the close of the week the maximum readings were below 60° in all the more northern parts of the kingdom. The lowest temperatures which were recorded on irregular dates ranged from 37° in 'Scotland, E.,' and 39° in 'Scotland, N.,' to 48° in 'England, S.,' and 'England, S.W.,' and 52° in the 'Channel Islands.'

"The rainfall has been largely in excess of the mean in all districts, excepting 'Scotland, N.,' and 'Scotland, E.,' where a slight deficit is reported. In Ireland and the east of England the aggregate for the week amounted to as much as three times the normal, and at Durham, during thunderstorms which occurred on the 25th and 26th, the total amount collected was no less than 3.75 inches.

"Bright sunshine has again been very deficient, the percentages of the possible amount ranging from between 16 and 18 over the southern parts of our islands to 29 in 'England, E.,' and 32 in 'Ireland, S.'"

MEAN TEMPERATURE OBSERVED AT CHISWICK DURING THE WEEK ENDING AUGUST 11. (AVERAGE OF FORTY-FOUR YEARS.)

Aug. 5	63°·1	Aug. 9	62°·9
" 6	63°·1	" 10	62°·8
" 7	63°·0	" 11	62°·8
" 8	62°·9	Mean for the week ...	62°·9

NOTICES TO CORRESPONDENTS.

INTELLIGENT READERS, do PLEASE NOTE that letters relating to ADVERTISEMENTS, or to the supply of the Paper, should be addressed to the PUBLISHER, and that all communications intended for publication, as well as specimens and plants for naming, should be addressed to the EDITOR. Such communications should be written on one side only of the paper, and sent as early in the week as possible. Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

* Will Mr. Long, who gave the address, The Newark, Leicester, send his correct address, as a letter forwarded to him was returned, marked "Not known."

CUCUMBERS: P. G. H. Send specimens of the roots; the symptoms are those of the rootworm disease.

FUNGUS: T. D., Darlington. Fairy-ring Champignon (*Marasmius oreades*); one of the edible series.

GRAPE VINE: I. H. A recipe for making Rhubarb wine was given on p. 664 of last volume; the same answers equally well for Grapes.

GARDEN PRIMULAS DISEASED: T. Smith. A correspondent forwards specimens of *Primula facchinii* badly infested with the fungus known as *Trichobasis* (= *Uromyces*) *primulae*. The diseased examples should be destroyed at once, otherwise the fungus will not only destroy the Primulas, but will reproduce itself and prepare for a future attack.

NAMES OF PLANTS: J. Drury. *Santolina incana*.—H. B. *Hyoscyamus niger*.—Reader. 1, *Polygonum persicaria*, perhaps; 2, not determinable; 3, perhaps *Chenopodium album*. All wretched scraps; send better specimens. — Wheeler & Co. Dried leaf looks like the Loquat (*Eriobotrya japonica*). We cannot be sure of the Pine from the leaves sent. It looks like *P. tæda*.—F. I. 1, *Ceanothus azureus*; 2, *Malva moschata*, white variety. — J. O. *Trachelium cæruleum*. — G. B. 1, *Galium verum*; 2, *Rubus odoratus*; 3, *Achillea*

ptarmica fl.-pl.; 4, *Polystichum aculeatum*; 5, *Aspidium dilatatum*; 6, *Athyrium Filix femina*. — G. O. R. 1, *Funkia Sieboldiana*; 2, *Spiraea Ulmaria*; 3, *Malva moschata*, white flower; 4, *Achillea Ptarmica*, fl.-pl.; 5, *Campanula rapunculus*; 6, *Phlomis fruticosa*; 7, *Agrostemma cornaria*; 8, *Antennaria margaritacea*; 9, *Polygonum affine*. — E. T. *Lilium Scarlet Martagon*; *Achillea Ptarmica*, fl.-pl. — T. C. H. The specimen was much withered; please send again, and pack in damp moss. — W. B. 1, *Lastræa Filix-mas cristata*; 2, *Athyrium Filix-femina*, crested var.; 3, *Lastræa Filix-mas polydactyla*; 4, *Lysimachia ephemerum* (not a *Veronica*). — D. *Geranium pratense*, double var. — G. W. R. *Sarcanthus Bucephalus*. — P. K. *Stanhopea Bucephalus*; *Hemerocallis fulva*. — A. B. 1, *Veronica ligustrifolia*; 2, *Veronica Andersoni*; 3, *Hieracium aurantiacum*; 4, *Santolina chamaecypariss*; 5, *Campanula isophylla* (probably); 6, *Lysimachia nummularia*.

PANDANUS UTILIS: *Pandanus*. Small offsets which grow out from the stem and around the collar of the plant; if taken off with a slight heel and inserted into a pot of sandy loam surfaced with silver-sand, and placed in a propagating pit or hot-bed (if in the former a bell-glass must be used) will, with care, root in five or six weeks. Larger portions of the head may be layered into small boxes of earth, supported by stakes in a suitable position, before layering making an incision, as is done with Carnations when layered, and putting in a thin wedge of bone or hard wood to keep the slit open.

INSECTS: J. W. A well-known pest, *Adelges abietis* (fig. 16).



FIG. 16.—ADELGES ABIETIS: CAUSING GALLS ON SPRUCE FIR.

PARASITE ON ERICA: H. L. & Co. A *Dodder* (*Cuscuta*). Comes in the peat.

SAW-FLY: J. J. F. If the flies only are as yet found on the trees, try washing with water strongly impregnated with Hellebore powder; strong tobacco-water solution to which soft-soap, at the rate of 2 oz. to the gallon has been added, and with soot-water repeatedly applied, the fly itself will be destroyed. The larva of the saw-fly, usually called the slugworm, can be destroyed by dusting the infested trees with Hellebore powder. The cocoons of the fly are deposited in the soil at the foot of the trees, and should, after an attack, be either lightly pricked over to a depth of 4 inches, working some quick-lime into it, or taken away and charred.

SCALE ON CAMELLIAS: *Pandanus*. Mere syringings with petroleum would have no effect unless used of dangerous strength. Seal-oil might be employed on the old wood, but not on that which is young, nor on the leaves. Gishurst Compound—a soap obtainable at the nurseries—or methylated spirits might be employed, using the wash with a hard brush to dislodge the insects.

SEEDLING CUCUBAS: J. J. S. Yes, fine varieties.

TOMATO DISEASE: Bennett. One of the many forms of fungi affecting the Tomato often referred to. See back numbers, and burn the plants.

VINE LEAVES: Alice McLennan. 1. Has warts over the surface induced by an excessively moist state

of the internal air of the vinery, and too little ventilation; such conditions causing also the growth of aerial roots sometimes observed on Vines. 2. Shows outgrowths from the leaf similar to those found on Curled Kale, &c. They do no harm, and are caused mainly by the vigour of the Vine finding but small outlet in the few bunches borne at the top of the cane. Were the crop a good one, it is probable that the foliage would have been in its normal state.

WILD PLANTS: G. B. Benthams *British Botany* (Reeve & Co.)

CATALOGUES RECEIVED.

LUCOMBE, PINCE & Co., Exeter Nursery, Exeter—Bulbs and Roses.

J. K. Box, East Surrey Seed Warehouse, Croydon—Bulbs.

DAMMAN & Co., San Giovanni a Teduccio, near Naples, Italy—Bulbs, Roots and Orchids.

COMMUNICATIONS RECEIVED:—W. Ridgway.—C. W. D.—M. F.—J. Barron.—O. King.—E. H.—J. G.—W. S.—C. S.—H. T. K.—J. Cameron (we do not contemplate publishing plans). —F. M.—W. G. S.—A. D.—M. Slider.—R. D.—D. J. Y.—W. H.—J. W.—J. Y. J., Madeira.—J. G. B.—C. N.—D. W. Pole.—C. W. D.

Correspondents sending plants or fruits to be named, or asking questions demanding time and research for their solution, must not expect to obtain an answer to their enquiries in the current week.

MARKETS.

COVENT GARDEN, August 2.

MARKET still heavily supplied, with scarcely any alteration in prices. James Webber, Wholesale Apple Market.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
<i>Aralia Sieboldi</i> , doz.	8 0-18 0	<i>Ficus elastica</i> , each	1 6-7 0
<i>Balsams</i> , per doz.	3 0-6 0	<i>Fuchsias</i> , doz.	3 0-3 0
<i>Bouvardias</i> , per dozen	9 0-12 0	<i>Heliotropes</i> , dozen	4 0-6 0
<i>Calceolarias</i> , dozen	3 0-6 0	<i>Hydrangeas</i> , dozen	9 0-18 0
<i>Carnations</i> , per doz.	6 0-18 0	<i>Liliums</i> , var., doz.	18 0-30 0
<i>Cockscombs</i> , per doz.	4 0-6 0	<i>Lobelias</i> , per dozen	3 0-6 0
<i>Coleus</i> , dozen	3 0-6 0	<i>Marguerites</i> , doz.	6 0-12 0
<i>Crassula</i> , per doz.	9 0-12 0	<i>Mignonette</i> , 12 pots	3 0-6 0
<i>Cyperus</i> , per dozen	4 0-12 0	<i>Musks</i> , dozen	1 6-3 0
<i>Dracæna terminalis</i> , per dozen	30 0-60 0	<i>Myrtles</i> , per dozen	6 0-12 0
— <i>viridis</i> , per doz.	12 0-24 0	<i>Palms</i> in var., each	2 6-21 0
<i>Eunonymus</i> , in var., per dozen	6 0-18 0	<i>Pelargoniums</i> , doz.	6 0-15 0
<i>Evergreens</i> , in var., per dozen	6 0-24 0	— Ivy-leaf, dozen	3 0-6 0
<i>Ferns</i> , in var., doz.	4 0-18 0	— scarlet, dozen	3 0-6 0
<i>Foliage plants</i> , various, each	2 0-10 0	<i>Rhodanthe</i> , per doz.	4 0-6 0
		<i>Scented Geranium</i> doz	3 0-6 0
		<i>Verbena</i> , per doz.	4 0-6 0
		<i>Spiræas</i> , dozen	6 0-6 0
		<i>Zinnia</i> , per dozen	4 0-6 0

BEDDING-OUT PLANTS.

Per dozen, 1s. to 2s.; per box, 1s. to 3s.

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
<i>Asters</i> , 12 bunches	4 0-6 0	<i>Mignonette</i> , 12 bun.	2 0-4 0
— French, per bun.	1 0-1 6	<i>Pansies</i> , 12 bun.	1 0-2 0
<i>Bouvardias</i> , per bun.	0 6-1 0	<i>Pelargoniums</i> , 12 spr.	0 6-1 0
<i>Carnations</i> , 12 bims.	1 0-2 0	— scarlet, 12 spr.	0 3-0 6
— dozen bunches	4 0-6 0	<i>Pinks</i> , 12 bun.	3 0-6 0
<i>Chrysanthemums</i> , annual, 12 bun.	1 0-3 0	<i>Poppies</i> , 12 bun.	4 0-6 0
<i>Cornflower</i> , 12 bun.	1 6-3 0	<i>Primulas</i> , double, 12 sprays	0 9-1 0
<i>Delphiniums</i> , 12 bun.	3 0-6 0	<i>Pyrethrums</i> , 12 bun.	2 0-4 0
<i>Eucharis</i> , per dozen	3 0-6 0	<i>Rhodanthe</i> , 12 bun.	4 0-6 0
<i>Forget-me-nots</i> , 12 bunches	2 0-4 0	<i>Roses</i> , Tea, per doz.	0 6-1 6
<i>Gardenias</i> , 12 blooms	1 6-4 0	— coloured, dozen	2 0-4 0
<i>Gladioli</i> , doz. sprays	1 0-2 0	— red, per dozen	1 0-2 0
<i>Heliotropes</i> , 12 spr.	0 6-1 0	— „ 12 bunches	3 0-6 0
<i>Lilium longiflorum</i> , 12 blooms	3 0-5 0	— Safrano, dozen	0 9-1 6
— candidum, 12 bl.	0 6-1 6	— Moss, 12 bun.	4 0-12 0
— per bunch	1 6-2 0	<i>Spiræa</i> , 12 bun.	4 0-6 0
— (Orange) per bun.	1 0-2 0	<i>Stephanotis</i> , 12 spr.	2 0 4 0
<i>Marguerites</i> , 12 bun.	3 0-6 0	<i>Sweet Peas</i> , 12 bun.	2 0-4 0
		<i>Sweet Sultan</i> , 2 bun.	3 0-6 0
		<i>Tuberose</i> , 12 bims.	0 4-0 9

* Orchid bloom in great variety, but the demand not very good.

VEGETABLES.—AVERAGE RETAIL PRICES.

	s. d. s. d.		s. d. s. d.
<i>Artichokes</i> , p. doz.	6 0-...	<i>Mushrooms</i> , punnet	1 0-1 6
<i>Asparagus</i> , Fr., bund.	1 6-4 0	<i>Mustard and Cress</i> , punnet	0 4-...
— English, 100	3 6-6 0	<i>Onions</i> , per bushel	5 0-...
<i>Beans</i> , Kidney, lb.	0 9-...	<i>Parsley</i> , per bunch	0 4-...
<i>Beet</i> , red, per dozen	1 0-2 0	<i>Potatoes</i> , per cwt.	4 0-5 0
<i>Carrots</i> , per bunch	0 8-...	— kidney, per cwt.	4 0-5 0
<i>Cauliflowers</i> , each	0 8-...	<i>Rhubarb</i> , per bundle	0 4-...
<i>Celery</i> , per bundle	1 6-2 6	<i>Shallots</i> , per lb.	0 6-...
<i>Cucumbers</i> , each	0 9-1 0	<i>Spinach</i> , per bushel	2 6-...
<i>Endive</i> , per dozen	2 0-...	<i>Tomatoes</i> , per lb.	1 0-...
<i>Green Mint</i> , bunch	0 4-...	<i>Turnips</i> , per bunch	new
<i>Herbs</i> , per bunch	0 4-...	— „ „ „	0 8-...
<i>Leeks</i> , per bunch	0 6-...	<i>Vegt. Marrows</i> , each	0 6-...
<i>Lettuce</i> , per dozen	1 6-...		

POTATOS.—Jerseys, unsaleable; English, 3s. 6d. per bushel.

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Cherries, half-sieve ...	2-0-5 0	Melons, each ...	1-0-3 0
Currants, blk., half-sieve ...	3-0-3 6	Peaches, dozen ...	2-0-10 0
— Red, half-sieve, ...	2-0-3 0	Pine-apples, Eng., lb. ...	2-0-3 0
Grapes, per lb. ...	1-0-3 0	— St. Michael, each ...	3-0-5 0
Lemons, per case ...	12-0-21 0	Strawberries, lb. ...	0-6-1 0

SEEDS.

LONDON: August 1.—Messrs. John Shaw & Sons, seed merchants, of 37, Mark Lane, E.C., write that owing to the continued wet weather there is increasing firmness in the seed trade. All descriptions of Alsike, white and Trefoil are consequently held with great strength. In imported Italian there has also been a substantial advance. For Canary and Hemp seed the sale is slow. Higher prices are now asked for Blue Peas. Mustard and Rape seed realise late quotations. Feeding Linseed is firm.

CORN.

Averages.—Official statement showing the average price of British corn, imperial measure, in the week ended July 28:—Wheat, 32s. 6d.; Barley, 25s. 1d.; Oats, 17s. For the corresponding week in 1887:—Wheat, 34s. 5d.; Barley, 21s. 8d.; Oats, 17s. 1d.

FRUIT AND VEGETABLES.

SPITALFIELDS: August 1.—Supplies of fruit good; of English Potatoes, fair; of Jersey, St. Malo, and Cherbourg Potatoes, short. Trade is not quite so active. Prices:—Foreign Pears, 2s. to 2s. 3d. per bushel of about 24 lb.; foreign Green Gages, 2s. 6d. to 3s. per bushel of 18 lb.; black Currants, 3s. to 3s. 3d. per half sieve; red Currants 2s. 3d. to 2s. 6d. do.; white Currants, 3s. do.; Cherries, 2s. to 3s. 3d. do.; Gooseberries, 2s. to 2s. 6d. do.; Strawberries, 1s. 6d. to 2s. 6d. per peck; Raspberries, 2d. to 4d. per 1 lb. punnet; ditto, 18s. per cwt.; English Tomatoes, 3s. 6d. to 4s. per peck; foreign do., 1s. 9d. to 2s. 6d. per box; Vegetable Marrows, 1s. 6d. to 2s. per dozen; Cabbages, 9d. to 2s. 6d. per tally; Peas, 1s. 6d. to 2s. 6d. per bushel; do., in sacks, 3s. to 4s. per sack; Broad Beans, 1s. 3d. to 1s. 6d. per bushel; do., in sacks, 2s. to 3s. per sack; Scarlet Runners, 7s. to 8s. per sieve; foreign do., 6s. 6d. to 7s. 6d. per box of about 130 lb.; frame Cucumbers, 2s. to 3s. per dozen; Endive, 1s. to 1s. 6d. do.; Cos Lettuces, 6d. per score of 22; Beetroots, 6d. to 8d. per dozen; English Walnuts (for pickling), 2s. to 2s. 3d. per half sieve.

STRATFORD: July 31.—Supply has been good during the past week, and a fair trade was done at the following prices:—Cabbages, 3s. to 4s. per tally; Mangels, 18s. to 22s. per ton; Watercress, 6d. to 8d. per dozen bunches; Gooseberries, 4s. to 5s. per flat; do.; 2s. to 3s. per half bushel; Peas, 3s. 6d. to 5s. per bag; black Cherries, 3s. to 3s. 6d. per half sieve; white, 4s. do.; Tomatos, Jerseys, 5d. to 6d. per lb.; Apples, 8s. to 10s. per case; Currants, black, 3s. 6d. to 4s. per half sieve; do., red, 3s. to 3s. 6d. do.

POTATOS.

BOROUGH AND SPITALFIELDS: July 31.—Supplies are quite sufficient for demand, which is dull. —Shaws, 60s. to 70s.; Hebrons, 70s. to 90s.; kidneys, 80s. to 100s. per ton.

SPITALFIELDS: August 1.—Quotations:—English kidneys, 4s. to 4s. 6d.; Beauty of Hebron, 3s. 6d. to 4s. 6d.; Early Roses, 3s. 6d. to 4s.; Jersey kidneys, 4s. 6d. to 5s. 6d.; do. flukes, 4s. 6d. to 5s. 6d.; St. Malo rounds, 3s. to 3s. 6d.; do. flukes, 3s. 9d. to 4s. 6d.; Lisbon rounds, 3s. 6d. to 4s.; Cherbourg do., 3s. to 3s. 6d.; do. flukes, 4s. 6d. to 5s. 6d. per cwt.

STRATFORD: July 31.—Quotations:—English kidneys, 90s. to 110s.; Beauty of Hebron, 70s. to 90s.; Early Rose, 70s. to 80s. per ton.

Imports.—The imports into London last week consisted of 3137 packages from Jersey, 2 boxes from Malta, and 754 boxes from Cherbourg.

HAY.

Averages.—The following are the averages of the prices obtained at the various metropolitan markets during the past week:—Clover, prime, 93s. to 135s.; inferior, 76s. to 86s.; hay, prime, 34s. to 126s.; inferior, 76s. to 84s.; and straw, 26s. to 40s. per load.

ORCHIDS.

THE UNDERSIGNED, Sole Agent for the United Kingdom, for CARLOS TRAVASSOS, Rio de Janeiro, begs to announce to the Trade generally, that he is open to Receive Orders for every description of Brazilian Orchids. For CATALOGUES, terms, &c., please address,

A. H. GRIMS DITCH,
5, CLAYTON SQUARE, LIVERPOOL.

Black Currant.—Buddenborg's Black Prince. J. HAYWARD, The Nurseries, Cheadle, Cheshire, is now Booking Orders for this extraordinary fruit for Autumn delivery. This finest black Currant in cultivation, 12 berries weighing 1oz. Send three stamps for a sample of fruit. Young healthy trees, three sizes, 2s., 4s., and 6s. per dozen.

PRIMULAS—PRIMULAS—PRIMULAS.

Grand Premier Prize and Covent Garden strains. Fine large trusses, beautifully fringed flowers, and new colours. Good Plants, to bloom well, per dozen, 1s. 3d.; extra strong, 1s. 6d.; per 100, 9s. All carriage free.

CINERARIAS—CINERARIAS.—Bull's and Cannell's celebrated Prize Strains, and most brilliant colours. Cannot be excelled. Good Plants to bloom well, per dozen, 1s. 3d.; extra strong, 1s. 6d.; per 100, 9s. All carriage free.

S. SHEPPERSON, Florist, Prospect House, Belper, Derbyshire.

80,000 CLEMATIS, in Pots, of all the finest Double and Single Varieties (some of the flowers of which become 10 inches across, and are of every shade, from pure white to the darkest purple), for climbing and bedding, from 12s. to 24s. per dozen, strong plants; extra strong plants, repotted into 5½-inch pots, 2s. 6d. each; Beauty of Worcester, a magnificent purple, excellent for bedding, recently sent out by us, reduced price 2s. 6d. each. Descriptive LIST on application.—RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.



CUTBUSH'S MILL-TRACK MUSHROOM SPAWN.—Too well known to require description. Price, 6s. per bushel (1s. extra per bushel for package), or 6d. per cake; free by parcel post, 1s.

None genuine unless in sealed packages and printed cultural directions enclosed, with our signature attached. WM. CUTBUSH AND SON (Limited), Nurserymen and Seed Merchants, Highgate Nurseries, N.

COCOA-NUT FIBRE REFUSE, newly made.

Truck-load (2 tons), 20s.; in bags—20, 14s.; 40, 25s. Free on to Rail. Cash with order. J. STEVENS AND CO., Cocoa-Nut Fibre Merchants, Greyhound Yard, and 153, High Street, Battersea, S.W.

MOST EFFECTIVE, SAFE & ECONOMICAL.

IMPROVED & ONLY GENUINE

"Medicated Tobacco Paper"

(READY CUT UP FOR USE).

Reduced Price 16 per lb.;

28lbs. & upwards—Carriage Paid.

Parcels for trial, sent Free by Parcels Post, viz.:

2 lbs. 3/4, 4 lbs. 6/8, 6 lbs. 9/9, 8 lbs. 13/7, 10 lbs. 16/-.

IMPROVED FUMIGATING PAN

Is vastly superior to any other.

Price 6/6 (in iron with heater) each, or in Copper, 21/-.

DICKSON'S Improved MUSHROOM SPAWN

MOST SUPERIOR, 5/- PER BUS.

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CARSON'S PAINT

Patronised by 16,000 of the Nobility, Gentry, and Clergy, for all kinds of

OUTDOOR WORK, CONSERVATORIES, Greenhouses, Frames, &c.

1 Cwt., and Oil Mixture, Free to all Stations.

Liquid Non-Poisonous Paints for Inside of Conservatories, &c. Prices, Patterns, and Testimonials, Post-free.

LA BELLE SAUVAGE YARD, LUDGATE HILL, E.C. BACHELOR'S WALK, DUBLIN.—Discount for Cash.



GARDEN REQUISITES.

TWO PRIZE MEDALS.

Quality, THE BEST in the Market. (All sacks included.) PEAT, best brown fibrous ... 5s. per sack, 5 sacks for 22s. 6d. PEAT, best black fibrous ... 4s. 6d. ... 5 sacks for 20s. PEAT, extra selected Orchid ... 7s. 6d. ... 5 sacks for 35s. LOAM, PREPARED COMPOST (1s. per bush., 3s. per sack LEAF, or PEAT MOULD ... (sacks included). SILVER SAND, coarse, 1s. 6d. per bush., 14s. half-ton, 24s. ton. RAFFIA FIERE, best only ... 1s. per lb. TOBACCO CLOTH, or PAPER ... 1s. lb.; 28 lb., 27s. SPHAGNUM MOSS, all selected, 3s. per bush., 8s. per sack. CHUBB'S "PERFECT" FER-

TILIZER (the Best Food for all kinds of Plants, Flowers, Fruits, Vegetables, &c.) ... Tins, 7lb. 14lb. 28lb. 56lb. 1 cwt. CRUSHED BONES, or Bone Dust 1/2 2/- 3/6 6/- 12/- VIRGIN CORK (Best Quality only) ... 3/- 5/6 10/6 17/- RUSSIAN MATS, BAMBOO CANES, PERUVIAN GUANO, NITRATE OF SODA, HORTICULTURAL CHARCOAL, &c. PEAT MOSS LITTER, cheapest and best Bedding for Horses and Cattle, £2 per ton. Extra large Sample Bales, 6s. each. COCOA-NUT FIBRE REFUSE (by Chubb's special process), sacks, 1s. 3d. each; 10 sacks, 11s.; 15 sacks, 15s.; 20 sacks, 18s.; 30 sacks, 25s.; 40 sacks, 30s.; Truck-load, loose, free on rail, 28s. Limited quantities of G., special quality granulated, in sacks only, 2s. each. Terms, strictly Cash with order. (Bankers, Union Bank of London.)

CHUBB, ROUND & CO., WEST FERRY ROAD, MILWALL, LONDON, E.

SAVE HALF THE COST.

GARSIDE'S SILVER SAND, BEDFORDSHIRE

Is admitted by the leading Nurserymen to be the Best Quality obtainable in the Trade.

Consumers should Buy Direct from the Owner of these Celebrated and Extensive Pits, which contain a practically inexhaustible supply of Splendid Sand, and thus save half the ordinary cost. NO TRAVELLERS OR AGENTS.

Apply direct to the Proprietor for Samples and Price.

Free on Rail or Canal. All Orders executed with the utmost promptness and under personal supervision. Special Railway Rates in force to all parts.

GEORGE GARSIDE, Jun., LEIGHTON BUZZARD, BEDS.

CERTAIN SUDDEN DEATH

To all Grubs, Aphs, Lice, Red Spider, Thrip, Mealy Bug, Caterpillars, &c., &c

PERFECTLY HARMLESS } to the Hands and Skin, but will cure Ringworm in Animals, and all diseases produced by parasites.

FIR TREE OIL (SOLUBLE) INSECTICIDE

A combination of Hydrocarbon Oils, made soluble in Water, for destroying ALL INSECTS & PARASITES that infest Trees and Plants, whether at the Roots or on the Foliage.

Sold by Seedsmen and Chemists, 1s. 6d., 2s. 6d., & 4s. 6d.; ½ gallon 7s. 6d., 1 gallon 12s. 6d., or less in larger quantities.

A Treatise on FIR TREE OIL as an INSECTICIDE, its application to Plants and Animals, sent Post free on receipt of address, by the Manufacturer,



Throws a fine spray 20 ft., and a jet 30 ft., with great force.

A splendid substitute for the Syringe for using Insecticide, Price 25s. A larger size for watering purposes, 45s.

Carriage Paid. For Glass Houses. HUGHES' GREEN & CREAM COLOR SHADING Convenient, Inexpensive—Easily applied—Lasts all the Summer, and can then be easily washed off. 1s., post 1/3. E. GRIFFITHS HUGHES, Manchester.

Wholesale: HOOPER & CO.; CORRY, SOBER, FOWLER & CO.; C. E. OSMAN & CO.; and from all the London Seed Merchants and Wholesale Patent Medicine Houses. NEW YORK—ROKES & SONS.

Protect your Fruit by using MADDOCK'S KILL-WASP.

Mr. C. PENNY, *Head Gardener* to H.R.H. the Prince of Wales, says:—"Your Kill-Wasp is simply marvellous for its quick destruction of this our greatest enemy."

Mr. H. H. WARD, *Head Gardener* to the Right Hon. the Earl of Radnor:—"I have given it a trial, and found it to be everything you represent it to be. It does its work most effectually."

To be had of all Chemists, price 1s. 6d., or post-free 1s. 9d., and from the

OLD ENGLISH LAVENDER WATER CO.,
PULBOROUGH, SUSSEX.

BEESE'S MANURE.—The Best and Cheapest Fertiliser for all purposes. Write for Circular containing the Leading Gardeners' and Market Growers' Reports. Sold in Tins, 1s., 2s. 6d., 5s. 6d., and 10s. 6d. each, or 1 cwt. Bags, sealed, 13s. By all Seedsmen, or apply direct to W. H. BEESE, Carbrook Bone Mills, Sheffield.

SILVER SAND, PEAT, and LOAM.—The best in England, for Sale, in Railway Truckloads, loose, or in sacks, at moderate quotations.
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PEAT for ORCHIDS,

AZALEAS, HEATHS, FERNS, RHODODENDRONS, &c.
The Best in the World.

A. JOHNSON AND CO., 23, Leadenhall Street, London, E.C., continue to receive the highest of testimonials (un-elicited) from large Orchid Growers, stating the ORCHID PEAT supplied by A. J. & Co. is by far the best they have ever used. Samples can be seen at above address, or forwarded on application free of charge.

GISHURST COMPOUND, used by leading Gardeners since 1859 against Red Spider, Mildew, Thrips, Green Fly, and other Blight. 1 to 2 ounces to the gallon of soft-water; 4 to 16 ounces is winter dressing for Vines and Orchard-house Trees; and in latter from the cake against American Blight. Has obtained many preparations intended to supercede it. Boxes, 1s., 3s., and 10s. 6d.

GISHURSTINE keeps Boots dry and soft on wet ground. Boxes, 6d. and 1s., from the Trade. Wholesale from PRICE'S PATENT CANDLE COMPANY (Limited), London.

GLASS.—CHEAP GLASS.

8s 6d. per 100 feet 15 oz. 12x10, 18x12, 18x14, 24x14, 14x12, 20x12, 18x16, 24x16, 16x12, 16x14, 20x16, 24x18, &c. Putty, 6s. 6d. per cwt.; White Lead, genuine, 21s.; Our Speciality, 17s. 6d. per cwt.; Paints ground in Oil, Stone Ochre, 20s.; Oxford Ochre, 24s.; Green, 16s.; Black, 16s. per cwt.; Varnish, from 5s. 6d. per gal.—Full Price List on application to **THE CHEAP WOOD COMPANY**, 95, Bishopsgate Street Within, London, E.C.

To Horticulturists.—Great economy in Fuel, and other advantages secured by the use of our

SMOKELESS ANTHRACITE.—For information as to the mode of using this coal, and prices delivered to any railway station, apply to the TRIMSARAN CO. (Limited), 62, Leadenhall Street, London, E.C.

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REVISED PRICES FREE
IMPROVED EXPANSION JOINT
THE BEST OF ALL
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DENNIS PARK STOURBRIDGE
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G STOCK **E** SIZES **S**
Inches. Inches.
14x12 20x16
16x12 20x16
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21-OZ. Foreign of the above sizes, in 100 and 200 feet boxes, 3rds and 4ths qualities, always kept in stock.
A large stock of similar current sizes of 15-OZ. glass in 200 feet boxes.
English Glass, cut to buyer's sizes, at lowest prices, including free delivery in the country in quantities.

GEORGE FARMILOE & SONS,
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SPHINCTER GRIP GARDEN HOSE.

The Sphincter Grip Spring Steel Galvanised Armoured Hose is the most valuable improvement in Hose since 1840. Its lasting qualities are ten times greater than any Hose not armoured.

Its complete success has caused some parties to infringe the Patents owned and controlled solely by us; and we therefore notify all such that the making, vending, or use of any armoured wire-wound Hose not of our manufacture is an infringement of one or more of our several Patents, any violation of which will be promptly prosecuted. Brass plates set between the Hose and wire denote our Manufacture and the Patents.

For Price Lists and particulars of
The Original and Only Genuine Sphincter Grip
Armoured Hose,
APPLY TO THE

S.C.A. HOSE CO. (Ltd.),
63, FOLE STREET, LONDON, E.C.
(Unprecedentedly low prices.)

THOMAS'S TRAINING TRELLISES.

No. 81. GALVANISED AFTER MADE.



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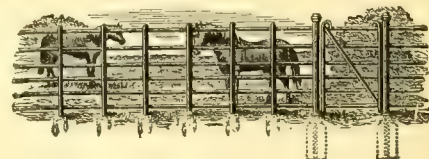
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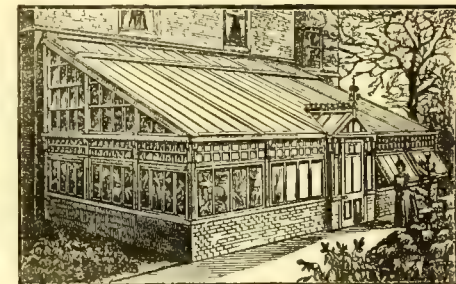
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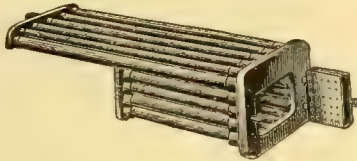
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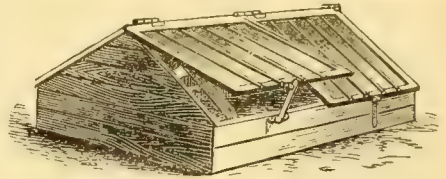
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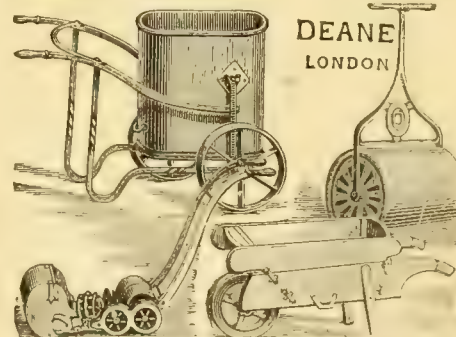
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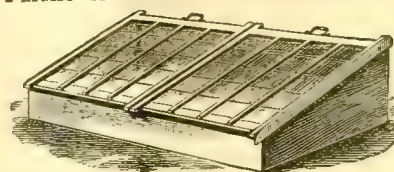
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Mr. S. BIGWOOD, late Foreman in the gardens, Effingham Hill House, Dorking, has been appointed Head Gardener to T. NARBURGH, Esq., Summerfield House, Elstree, Herts.

Mr. C. PAGE, late of Fern Lodge, Bracknell, has been appointed Gardener to H. P. LESCHALLS, Esq., The Highams, Bagshot, Surrey.

Mr. W. WILSON, for some years Foreman at Dropmore, Maidenhead, has been appointed Gardener to W. BARRON, Esq., Sefton Park, Slough.

Mr. E. HODGSON, late Foreman at Ash Grove, Sevenoaks, has been appointed Head Gardener to G. W. WILLIAMS, Esq., Piggott's Manor, Latchmore Heath, Elstree, Herts.

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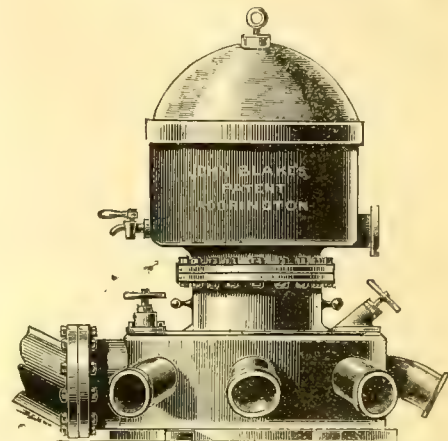
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The GARDENERS' CHRONICLE

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GEO BUNYARD AND CO'S New LIST, embracing, Noble, Waterloo, &c., and the 30 best kinds, may now be had on application. Splendid Plants in little pots, and Runners. The Old Nurseries, Maidstone.

LAXTON'S NEW STRAWBERRIES.—Four First-Class Certificates from the Royal Horticultural Society. The earliest, largest, finest, and latest high-quality sorts, and the most profitable for Market or Private Growers, as they make the highest prices in Covent Garden. Send for Descriptive Priced LISTS, with Press and other Testimonials, to T. LAXTON, Bedford.

SULPHIDE of POTASSIUM (Harris).—A certain cure for Mildew on Plants, Red Spider, Aphid, &c. Enough to make 32 gallons of solution, free for 1s. 3d. The only kind to use is "Harris's specially prepared Sulphide of Potassium." Sole Manufacturers—**PHILIP HARRIS AND CO. (Limited)**, 9, Bull Ring, Birmingham.

SQUELCH AND BARNHAM,
North Row, Covent Garden, W.C., are OPEN TO DISPOSE of any quantity of MUSCATS and BLACK GRAPES, TOMATOES, CUCUMBERS, FRENCH BEANS, STRAWBERRIES, CHOICE FLOWERS, &c. Highest Market Prices obtained. Account Sales daily; Cheques weekly or as preferred by Sender. Baskets and Labels supplied. References given.

Surplus Cut Flowers.
HOOPER AND CO. (Limited) RECEIVE and DISPOSE of any quantity of above at best Market Prices. Boxes, &c., supplied.—Address, Commission Department, HOOPER AND CO. (Limited), Covent Garden, W.C.

MESSRS. GREGORY AND EVANS,
NURSERYMEN, Sidecup, and 285, 286, 287, 288, Flower Market, Covent Garden, W.C., are open to RECEIVE CONSIGNMENTS of CHOICE CUT FLOWERS in any quantity for their Commission Department. Boxes and Labels supplied. Telegraph Address—"COMMISSION, SIDCUP."

MELONS, NECTARINES, GRAPES, &c.
—Highest Market Prices guaranteed for really good and well packed fruit of the above.
HENRY RIDES (late Wise & Rides), Covent Garden, W.C.

WANTED, delivered in Glasgow, on morning of 21st inst., large quantity of ROSES, in half-blown state; also Yellow, White, and Scarlet Cactus and Bouquet DAHLIAS and other CUT FLOWERS.

State quantities and price at once.
Also quotations for choice CUT FLOWERS and ORCHID BLOOMS for delivery at same time.
THYNE'S,
83, St. Vincent Street, Glasgow.

Pansies.
WANTED, Fifty Varieties, two plants of a sort, of the best show sorts. Send price and particulars to the HEAD GARDENER, Hartwell, near Tunbridge Wells.

WANTED, Specimens and Half-specimens of **KENTIAS FOSTERIANA** and **BELMOREANA**.—State particulars and prices to W. WEEKS, Nurseryman, 440, Fulham Road, S.W.

WANTED, Runner Plants of **STRAWBERRIES** Noble, King of the Earlies, Waterloo, and Captain. State quantity and lowest prices. Also **ECHEVERIA FARKOSA**, **FUCHSIA** Minnie Banks, Annie, and England's Glory; Bedding **GERANIUM** Cuttings.
H. CANNELL AND SONS, Swanley, Kent.

ROMAN HYACINTHS, *Lilium candidum*, *Narcissus*, Paper White and Double Roman, *Anemone* full gens, &c.—Bulbs in splendid condition, from Louis Bremond fils, Orléans. Inspection invited, or samples sent on application to **WILLIAM DENMAN**, 7, Catherine Street, Covent Garden, W.C. See large Advertisement on page 149.

SUTTON'S FLORISTS' FLOWER SEEDS.
Sutton's Begonia Sutton's Cyclamen
Sutton's Calceolaria Sutton's Gloxinia
Sutton's Cineraria Sutton's Primula, &c.
The finest strains in existence.
Price LIST Post free.
Sutton's Seeds Genuine only direct from SUTTON AND SONS, Reading.

The Best Present for a Gardener.
VINES and VINE CULTURE.
The most complete and exhaustive Treatise on Grapes and their Culture ever published.
New Edition.
Price 5s., post-free 5s. 6d.
A. F. BARRON, Royal Horticultural Society, Chiswick.

FRESH SEEDS, MEXIKANI, new and rare, of great interest and value to Botanical Gardens, Seedsmen, and Cultivators, to be had of **ERNST BERGE**, Nürnbergerstrasse, 10, Leipzig, Germany.

"NOW IN BLOOM," in great perfection, large quantities, "MRS. REYNOLDS HOLE," the most beautiful of all BORDER CARNATIONS. Inspection invited, or blooms gratis and post-free to likely purchasers and admirers. **DICKSONS (Limited) Nurseries, CHESTER.** Telegraph and Postal Address—"DICKSONS, CHESTER."

BULBS—Dutch and French.—The cheapest and best in the Trade. New LIST now ready. **JOHN R. BOX**, East Surrey Bulb Warehouse (established 60 years), Croydon.

MR. DODWELL'S GRAND CARNATIONS.
—The finest grown. 5000 Unbloomed Seedlings, warranted of the highest parentage; unrivalled whether for bedding or forcing for spring flowering. 3s. 6d. per doz.; 21s. per 100. Special terms for quantities. Particulars on application. The Cottage, Stanley Road, Oxford.

Pansies, Violas, and Begonias.
JOHN DOWNE (of the late firm of Downie & Laird), Beechhill Nursery, Edinburgh, begs to intimate that his famed collections of the above are now in full flower. Quality only grown. Inspection invited.
N.B.—BEGONIAS, seedlings of the finest sorts, in 3-inch pots, 4s. and 6s. per dozen.

CREEPERS FOR WALLS.—By planting what is suitable, an ugly object may easily be made beautiful. Most being in pots, can be sent and put out at any time. Descriptive LIST and advice free.—**RICHARD SMITH AND CO.**, Nurserymen and Seed Merchants, Worcester.

CHEAP BULBS.—We are this season offering First-class Bulbs at Lower Prices than have ever been placed before the public. LIST, Free, now ready.
J. R. PEARSON AND SONS, Chilwell, Notts.

Dutch Bulbs Direct from the Growers.
ANT. ROOZEN AND SON'S CATALOGUE for 1888, containing details of their immense Collections of New, Rare, and fine Bulbs and Plants (86 pages in English) is now ready, and will, as usual, be sent post-free, on application to themselves or their Agents.
Messrs. MERTENS AND CO., 3, Cross Lane, St. Mary-at-Hill, London, E.C., from whom also can be obtained.
ANT. ROOZEN AND SON'S New Work, "Notes on the Cultivation of Dutch and Cape Bulbs." Price 1s., Post-free.

PASTUPLANTA, the best Artificial Manure. It enriches the soil with the fertilisers drawn from it by plants; no unpleasant smell; admirably adapted for all pot plants. In bags: 112 lb., 19s.; 56 lb., 11s. 3d.; 28 lb., 6s. 9d.; 14 lb., 4s.; 7 lb., 2s. 3d. In tins, 1s. each. Sole Manufacturers, **PHILIP HARRIS AND CO. (Limited)**, 9, Bull Ring, Birmingham.

W. H. LASCELLES AND CO.,
HORTICULTURAL BUILDERS,
121, BUNHILL ROW, LONDON, E.C.
Plans and Estimates Free.
See large Advertisement, August 4, page 121.

SALES BY AUCTION.

Wednesday Next.—(Sale No. 7718.)

SPECIAL SALE OF ORCHIDS IN FLOWER and BUD.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY NEXT, August 15, at half-past 12 o'clock precisely, a Fine Collection of ORCHIDS in FLOWER and BUD, including four splendid plants of *Caloglypho Massangeana*, rare hybrid and other *Cypripediums*, *Cattleya Gaskelliana*, *Odontoglossum Alexandrie*, *Phalaenopsis Sanderiana*, *Cattleya Sanderiana*, and other fine things. Also a fine importation of *Laelia monophylla*, rare *Dissas*, &c.

On view morning of Sale, and Catalogues had.

Thursday Next.—(Sale No. 7719.)

VALUABLE IMPORTED ORCHIDS.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, August 16, at half-past 12 o'clock precisely, an importation of *CATTLEYA HARRISONIANA*, just received in very good order, collected in a new district, and having many fine varieties and forms amongst them. It is a wonderfully free-blooming *Cattleya*, of great beauty.

Also an importation of *CATTLEYA ELBORADO*, in good condition: many distinct species will be found in this lot. A few lots of *CATTLEYA SUPERBA SPLENDENS*, a fine importation of *LYCASTE SKINNERI*, in very fine condition.

Also importations of the following:—

<i>Oncidium crispum</i>	<i>Odontoglossum nebulosum</i>
" <i>Forbesii</i>	<i>Cattleya Bowringiana</i>
" <i>leucochilum</i>	<i>Laelia purpurata</i>
" <i>micropogon</i>	<i>Aerides Fieldingii</i>
" species	<i>Saccolabium Blumei</i>
<i>Cymbidium eburneum</i>	<i>Dendrobium nobile</i>
<i>Cattleya citrina</i>	" <i>densiflorum</i> , &c.

On view morning of Sale, and Catalogues had.

Dutch Bulbs.—Trade Sales.

MR. J. C. STEVENS begs to announce that his FIRST SALES OF DUTCH BULBS this season, will take place at his Great Rooms, 38, King Street, Covent Garden, W.C., on MONDAY, WEDNESDAY, and SATURDAY, August 20, 22, and 25, at half-past 12 o'clock precisely each day, and will consist of extensive consignments of first-class Bulbs specially lotted to suit the Trade and other Large Buyers.

On view mornings of Sales and Catalogues had.

The "Woodlands," Cheshunt.

By order of the Executors of the late W. G. Rowlett, Esq., MESSRS. CRAWTER and SON are instructed to SELL by AUCTION on the Premises on TUESDAY, August 14, at 1 o'clock precisely, the whole of the Outdoor Effects, comprising the valuable and choice COLLECTION of ORCHIDS, quantity of AZALEAS, CAMELLIAS, magnificent specimen EPIPHYLLUMS and CARNATIONS, POT ROSES, STOVE PLANTS, FERNS, LILIAM AURATUM, GARDEN SEATS, WATER BARROW, a quantity of TOOLS, LAWN MOWER, POTS, COCOA-NUT FIBRE, and numerous other effects.

May be viewed day prior to Sale (the Orchids at any time by Cards only), and Catalogues had of Messrs. CRAWTER and SON, Cheshunt; and 4, Great James Street, Bedford Row, W.C.

Monday, Thursday, and Saturday Next.

DUTCH BULBS.

Special Trade Sales.

MESSRS. PROTHEROE and MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on MONDAY, THURSDAY, and SATURDAY NEXT, August 13, 16, and 18, at half-past 11 o'clock precisely each day, extensive consignments of first-class HYACINTHS, TULIPS, CROCUS, NARCISSUS, and other BULBS from HOLLAND in excellent quality, and specially lotted to suit the Trade and other Large Buyers.

On view morning of Sale, and Catalogues had.

Tuesday Next.

ESTABLISHED and IMPORTED ORCHIDS.

MESSRS. PROTHEROE and MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on TUESDAY NEXT, August 14, at half-past 12 o'clock precisely, by order of R. B. White, Esq., a large quantity of IMPORTED ORCHIDS in splendid condition, consisting of *Cattleya gigas* var. *Sanderiana* and *imperialis*, *C. Trianae* from a good district; *Oncidium lucidum* and *O. bramerianum*, and *Oncidium* species, dried flowers of which will be shown; *Chysis*, *Gongoras*, *Catacattums*, &c. The whole of the plants are in excellent condition, and amongst the importations will be found numerous very fine specimens.

Also about 50 lots of *CATTLEYA MENDELII*, established plants. The Sale will include a choice assortment of well grown ESTABLISHED ORCHIDS, also various IMPORTED ORCHIDS, including *Laelia purpurata*, *L. elegans*, *Oncidiums*, &c., other properties.

On view morning of Sale, and Catalogues had.

Thursday, August 29.

ORCHIDS IN FLOWER.

MESSRS. PROTHEROE and MORRIS desire to announce that their NEXT SPECIAL SALE of ORCHIDS IN FLOWER will take place as above, for which they will be glad to RECEIVE NOTICE OF ENTRIES as soon as possible.

Belsfield, Windermere.

IMPORTANT CLEARANCE SALE of the whole of the well-known collection of STOVE and GREENHOUSE PLANTS, by order of the Executors of the late H. W. Schneider, Esq., without reserve.

MESSRS. PROTHEROE and MORRIS will SELL the above by AUCTION, on the Premises Belsfield, Bowmans, on Windermere, on WEDNESDAY and THURSDAY, August 29 and 30. Fuller particulars will appear next week.

Friday Next, August 17.

IMPORTANT UNRESERVED SALE of the Second and Remaining Portion of the well-known COLLECTION of ESTABLISHED ORCHIDS, formed by F. A. Philbrick, Esq., Q.C., of Oldfield, Bickley, who is relinquishing the cultivation of Orchids.

MESSRS. PROTHEROE and MORRIS are favoured with instructions to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY NEXT, August 17, at half-past 12 o'clock precisely, without reserve, the Second and Remaining Portion of this well-known COLLECTION of ESTABLISHED ORCHIDS.

The plants are in exceptionally healthy condition, and this Sale includes a remarkable collection of promising *Odontoglossums* (unflowered, several celebrated varieties having appeared among them), as well as some of the finest forms of *Cattleyas*, especially *Trianae* and *Gigas*, and many choice *Masdevallias*.

Among the principal items may be mentioned:—

<i>Aerides affine roseum</i>	<i>Masdevallia Veitchii gigantea</i>
" <i>Godefroyae</i>	" <i>superba</i>
" <i>Houllettianum</i>	" <i>Chelsona</i> { hybrids
<i>Vanda suavis Veitchii</i>	" <i>splendida</i>
<i>Zygopetalum Dayii</i>	<i>Cattleya Mendelii grandis</i>
<i>Grammatophyllum Ellisii</i>	" <i>superba</i>
<i>Cirrhopetalum Cunninghamii</i>	" <i>gigas Sanderiana</i>
<i>Angraecum citratum</i> , special form	" <i>Mossie kermesina</i>
<i>Cattleya Trianae alba</i>	" <i>Burton Constable</i> var.
" <i>Aurora</i>	" <i>aurantiaca</i>
" <i>Euterpe</i>	" <i>Warneri rubra</i>
" <i>Hardyana</i>	<i>Phalaenopsis amabilis</i> , including picta and many fine varieties
" <i>Russelliana</i>	" <i>Marie</i>
" <i>superbissima</i> , and other superb vars.	" <i>Dayana</i>
<i>Laelia elegans</i>	" <i>Lowii</i>
" <i>Stelzneriana</i>	" <i>grandiflora</i> (Java and Borneo varieties)
" <i>Schilleriana</i>	" <i>sumatrana</i>
" <i>anceps Schroderiana</i>	" <i>Sanderiana</i>
" <i>Steila</i> , and other white forms	" <i>Stuartiana</i>
<i>Masdevallia Harryana laeta</i>	" <i>Schilleriana</i> (many grand forms)
" <i>splendens</i>	" <i>Casta</i>
" <i>sanguinea</i>	" <i>leucorrhoda</i>
" <i>magnifica</i>	
" <i>atro-sanguinea</i>	

ODONTOGLOSSUMS.

Alexandria, magnificent varieties, including *roseum*, *Guttatum flavum*, *Hor-manii*, *Ruckeriana*, *Wickhamum*, and other hybrids, *Nevium majus*, *Pulchellum monstrosus*, *Cervantesi Decorum*, *Pescatorei*, grand forms, &c.

The plants may be inspected on the Premises on presentation of Catalogue, and will be on view in the Sale Rooms on the morning of Sale. Catalogues may be obtained of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

Kingston, Surrey.

By order of the Executors of the late Mr. Thomas Jackson. IMPORTANT SALE OF VALUABLE FREEHOLD and LEASEHOLD PROPERTIES.

Preliminary Notice.

MESSRS. PROTHEROE and MORRIS are favoured with instructions to SELL by AUCTION, at the Mart, Tokenhouse Yard, London, E.C., on THURSDAY, August 30, (in one lot, and if not thus sold, then in separate lots), the Valuable FREEHOLD ESTATE known as the Kingston Nursery, Kingston, containing a total area of 2 acres, with the modern detached Freehold Residence, 22 Greenhouses and numerous Outbuildings, and the Goodwill of the old-established Nursery and Seed Business, the desirable Freehold House and Shop in Thames Street, Kingston, now utilised as a Seed Shop, with 2 Cottages and Stabling adjoining, also the several Leasehold Nurseries known as the Kingston Hill Nursery, containing an area of 12 acres 3 rods 10 perches, the Nursery in Park Road, Norbiton, area 10 acres, and the Long Ditton Nursery, Long Ditton, area 15 acres 0 rods 13 perches.

The Purchaser or Purchasers will have the option of taking the Stock in the respective lots at a valuation to be made in the usual way.

May be viewed. Particulars and Plans obtainable at the Mart; of G. C. SHERRARD, Esq., Solicitor, 26, Lincoln's Inn Fields, W.C.; and of the Auctioneers and Surveyors, 67 and 68, Cheapside, London, E.C., and Leytonstone.

The Ascot Nurseries, Berks.—Preliminary Notice.

MESSRS. PROTHEROE and MORRIS desire to announce that they have been instructed by the present Proprietor, who is relinquishing the business solely in consequence of continued ill-health, to SELL by AUCTION, at the Mart, Tokenhouse Yard, London, E.C., in SEPTEMBER NEXT, in one Lot, as a going concern (unless an acceptable offer be made previously), the well-known property situated and being the ROYAL NURSERIES, Ascot, Berks, established for so many years, together with a detached Residence, about 40 Greenhouses, numerous Trade Buildings, and 21 Acres of Land. The whole of the extensive collection of Stove and Greenhouse Plants, and General Nursery Stock, will be included in the purchase.

Further particulars may be obtained on application to the Auctioneer, who will be pleased to hear from any gentleman desirous of negotiating for the property by private treaty. Auction and Estate Offices, 67 and 68, Cheapside, London, E.C.

Annual Trade Sales of Greenhouse Plants.

MESSRS. PROTHEROE and MORRIS desire to announce that these ANNUAL SALES are arranged as follows:—

- Sept. 13.—At Mr. P. Ladd's, The Nurseries, Swanley Junction.
 - " 17.—At Mr. H. B. May's, Dyson's Lane Nursery, Upper Edmonton.
 - " 18.—At Messrs. B. Maller & Son's, Burnt Ash Lane Nurseries, Lee.
 - " 19.—At Mr. J. Fraser's Lea Bridge Road, Nurseries, E.
 - " 20.—At Mr. J. Maller's, Brimsdown Nursery, Enfield Highway.
 - " 21.—At Messrs. Gregory & Evans, Longlands Nursery, Sidcup.
 - " 27.—At Mr. J. Maller's, Brunswi k Nursery, Tottenham.
- The Auctioneers will be glad to forward Catalogues of these Sales on application.

NURSERY FOR SALE.—The 52 years'

Lease of a capital little Nursery of 2 Acres, with Glass-houses, Stable, and small compact Residence, between Putney and Wandsworth. Rent, £50.

Agent, Mr. FRED. W. GLAZIER, 1, Park Side, Hyde Park Corner, W.

FOR SALE, small FLORIST'S BUSINESS.

Rent £35, part let off, lease 24 years. For full particulars apply, W. A., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

TO BE SOLD, in the Country, an established FLORIST and SEED BUSINESS.—Particulars, J. D. G., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

South of England.

LARGE GARDEN, 20 Acres, with Twenty Greenhouses and Vineries. £7000 has been spent on the property. Seven years' lease. Two cottages inclusive. £150 a year. ELDRIDGE, Portsmouth.

Durant's Nursery Estate, Ponder's End, Middlesex.

To NURSEYMEN, FLORISTS, and OTHERS.

TO BE LET, on Lease, for 21, 60, or 80 years, 1 to 50 acres of excellent MEADOW LAND, from £3 to £11 per acre, with the option of the purchase of the freehold within the first 9 years. No title or land tax. Apply to A. AND G. GUIVER, Land Agents, &c., Ponder's End, N.B. Several Nurseries established on the estate.

TO LET, in the Midlands, Small, Compact

MARKET NURSERY, comprising excellent Dwelling-house and Outbuildings, 4 Glasshouses, all heated with Hot-water, large garden, well stocked with Fruit Trees in full bearing; within easy reach of three markets. Possession at Michaelmas. Rent £45. Good reasons for leaving.

Address R. E., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

ROYAL CALEDONIAN

HORTICULTURAL SOCIETY.

Instituted 1809. (Incorporated by Royal Charter in 1894.)

Waverley Market, Edinburgh, on

WEDNESDAY and THURSDAY, September 5 and 6.

- Collection of twelve dishes of Fruit—to consist of three dishes of Grapes (not less than three varieties), two dishes of Peaches, and one dish of each other kind of fruit; Pine-apples and Bananas excluded.—1st, 120s.; 2nd, 80s.; 3rd, 40s. (These prizes are presented by the Corporation of the City of Edinburgh.)
- Collection of eight dishes of Fruit—not more than two dishes of Grapes (black and white), and one dish of each other kind of fruit.—1st, 60s.; 2nd, 40s.; 3rd, 20s.
- Collection of twelve dishes of Hardy Fruit—not more than two dishes (distinct varieties) of each kind, and all must be grown out-of-doors.—1st, 50s.; 2nd, 35s.; 3rd, 15s.
- Collection of twelve dishes of Fruit, grown in an orchard-house—not more than two dishes (distinct varieties) of each kind; Grapes excluded.—1st, 50s.; 2nd, 30s.; 3rd, 15s.
- Eight bunches of Grapes, at least four varieties (1st prize presented by Wm. Thomson & Sons, Clovenfords).—1st, 200s.; 2nd, 100s.; 3rd, 60s.; 4th, 30s.
- Four do. do., distinct varieties.—1st, 60s.; 2nd, 40s.; 3rd, 20s.
- *Two do. do., Muscat Alexandria (1st prize presented by Convener White).—1st, 40s.; 2nd, 20s.; 3rd, 10s.

ROSE (Buds) GENERAL JACQUEMINOT.

—Price per 100 or 1000 Buds—other sorts also, on application.—GRAY and SONS, Brox Nursery, Chertsey, Surrey.

PRIMULAS—PRIMULAS—PRIMULAS.—

Nineteenth year of distribution, Williams' superb strain, 1s. 6d. per dozen, 10s. per 100.

CINERARIAS and CALCEOLARIAS, same price.

Carriage free for cash with order.

JOHN STEVENS, The Nurseries, Coventry.

LAVENDER.—Orders taken now. Samples

and price on application.

GIBBINS, Lyncombe Vale Nursery, Bath.

STRAWBERRIES.

Apply for Descriptive CATALOGUE, Post-free.

THOMAS RIVERS and SON, Sawbridgeworth, Herts.

GARDENERS, &c., requiring PEAT, SAND,

LOAM, POTTING COMPOST, GARDEN NETTING,

RAFFIA, MATS, &c., in large or small quantities, will save

25 per cent. by sending for our List of Prices, post-free.

BRINKWORTH and SONS, Reading.

GARDEN REQUISITES,

of best quality, as supplied to the Royal Gardens, &c.

BEST COCOA-NUT FIBRE REFUSE, 10 sacks for 10s., 15 for

14s., 20 for 18s., 30 for 25s.; two ton truck, 28s. Free on rail.

RUSSIA MATS, from 12s. to 18s. per dozen.

FINEST ORCHID PEAT, 7s. per sack.

BEST BROWN FIBROUS PEAT, 6s. per sack, 5 for 22s. 6d.

BEST BLACK FIBROUS PEAT, 4s. 6d. per sack, 5 for 20s.

COARSE SILVER SAND, 1s. 6d. per bushel; 14s. $\frac{1}{2}$ ton;

PURE LEAF MOULD, 3s. per sack. [25s. per ton,

YELLOW FIBROUS LOAM, 3s. per sack.

BEST MUSHROOM SPAWN, 4s. per bushel.

RAFFIA, LABELS, STICKS, from 1 ft. to 5 ft., BAMBOO

CANES, $\frac{3}{4}$ ft. to 12 ft., VIRGIN CORK, CHEMICAL

MANURES, NETTING, &c.

SPHAGNUM MOSS, 6s. per sack. CHARCOAL, 8s. per sack.

SPECIALITE TOBACCO PAPER and CLOTH, 10d. per lb.;

2s. lb. for 21s. Price List free by post.

W. HERBERT and CO., Hop Exchange Warehouses, South-

wark Street, London, S.E.

EARLY WHITE ROMAN HYACINTHS,

Double Roman and Paper-white Narcissus.



JAMES VEITCH & SONS

BEG TO ANNOUNCE THEY HAVE RECEIVED THEIR USUAL CONSIGNMENTS OF

THE ABOVE VALUABLE BULBS FOR EARLY FORCING,

And will be pleased to receive Orders for immediate delivery.

ROYAL EXOTIC NURSERY, KING'S ROAD, CHELSEA, LONDON, S.W.

By Special  Sealed Warrants.

EARLY WHITE ROMAN HYACINTHS,

EARLY FLOWERING NARCISSUS,

AND ALL OTHER BULBS FOR EARLY FORCING.

SEEDS OF ALL SORTS FOR PRESENT AND LATER SOWING.

FINEST QUALITIES. DELIVERED CARRIAGE FREE.

Illustrated Descriptive Catalogues post-free.

DICKSONS

(LIMITED),

"ROYAL" NURSERIES AND SEED ESTABLISHMENTS,
CHESTER.

Protect your Fruit by using

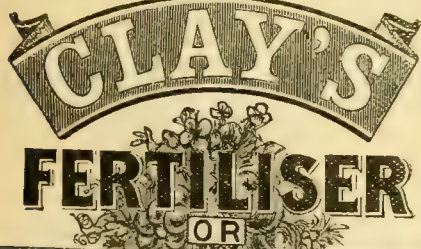
MADDOCK'S KILL-WASP.

Mr. C. PENNY, Head Gardener to H.R.H. the Prince of Wales, says:—"Your Kill-Wasp is simply marvellous for its quick destruction of this our greatest enemy."

Mr. H. H. WARD, Head Gardener to the Right Hon. the Earl of Radnor:—"I have given it a trial, and found it to be everything you represent it to be. It does its work most effectually."

To be had of all Chemists, price 1s. 6d., or post-free 1s. 9d., and from the

OLD ENGLISH LAVENDER WATER CO.,
PULBOROUGH, SUSSEX.



Sold in Packets, 6d. and 1s. each, and in
SEALED BAGS ONLY,

7 lb. 14 lb. 28 lb. 56 lb. 1 cwt.

2/6 4/6 7/6 12/6 20/-

CLAY & LEVESLEY,
TEMPLE MILL LANE,

STRATFORD, LONDON, E.

C. & L. also supply Crushed Bones, Bone Dust, Peruvian Guano, Sulphate of Ammonia, and Nitrate of Soda, in best qualities only.



GARDEN REQUISITES.

TWO PRIZE MEDALS.

Quality, THE BEST in the Market. (All sacks included.)
PEAT, best brown fibrous ... 5s. per sack, 5 sacks for 22s. 6d.
PEAT, best black fibrous ... 4s. 6d. " 5 sacks for 20s.
PEAT, extra selected Orchid ... 7s. 6d. " 5 sacks for 35s.
LOAM, PREPARED COMPOST } 1s. per bush., 3s. per sack
LEAF, or PEAT MOULD ... } (sacks included).
SILVER SAND, coarse, 1s. 6d. per bush., 14s. half-ton, 24s. ton.
RAFFIA FIERE, best only ... 1s. per lb.
TOBACCO CLOTH, or PAPER ... 1s. lb.; 28 lb., 27s.
SPHAGNUM MOSS, all selected, 3s. per bush., 8s. per sack.
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THE

Gardeners' Chronicle.

SATURDAY, AUGUST 11, 1888.

THE ROSE SHOWS OF 1888.

IT is quite clear that there is one subject on which it will never do to prophesy in England, and that is the weather; we see how often the forecasts issued by the Meteorological Department are wide of the mark, and so we need not be surprised if those of us who can only make guesses are often woefully wrong. Thus I had ventured to say that there was every prospect of a good Rose season, and so, when I wrote, there was; but on looking forward I believe that I cautiously added an "if"—if we do not have some thunderstorms; and now that the Rose show season is over I think the epithets "aggravating" and "disappointing" are those which are most applicable to it. I have seen a good many Rose seasons, but I do not ever remember one more irritating to the exhibitors (of whom I am not one) than the season of 1888 has been. Societies whose existence depends on the gate-money, exhibitors who have desired to gain honours in the strife, and lovers of the Rose who have wished to see for themselves the best productions that the skill and intelligence of our growers have been enabled to produce, have all alike had to suffer disappointment. Some societies have been fortunate in securing a fine day, but many have had to hold their shows in the midst of heavy showers and sloppy meadows, while in some cases the mishaps have been especially worrying.

It may give some idea of the character of the season, and how it has affected the Rose shows, when I mention that the number of entries at the Metropolitan Show of the National Rose Society at the Crystal Palace numbered 534 (the largest number ever recorded at any Rose show), while the number actually staged was 306. It will also show who were most affected, when we find that in the higher classes both of traders and amateurs there were few absentees, but that as we come down to the lower and smaller classes the falling out was most decidedly marked. This was notably the case in the Tea and Noisette divisions, in the larger classes of which the exhibits were

only less than the entries by two or three, while in the smaller classes they were reduced by nearly one-half; but the falling-off was most noticeable in the classes for light-coloured Roses, or what are called fair-weather Roses. Thus in the class for twelve blooms of Her Majesty, it was reduced from ten to one solitary exhibit. The same held true of Niphetos. The class for twelve blooms of Lady Mary Fitzwilliam was reduced from fifteen to three, while that for A. K. Williams was reduced one-half only—from nineteen to ten; and of dark velvety Roses from twenty-one to nine. The same held good at nearly all the shows that I have attended, and in some cases it must have been most trying to the patience of the exhibitor. Thus one looked forward to a great contest between North and South at Darlington, when it was hoped that Messrs. Grant, Whitwell, Hall, Pemberton, and others would have tried their prowess. They had all entered, but Mr. Grant had to telegraph that a storm had completely destroyed his Roses; and what must have been most trying was that half a mile on either side of his garden it was perfectly fair, while, as I have already stated, Mr. Whitwell had not one Rose in bloom in his garden, although he has once taken the Challenge Trophy at the Metropolitan show on the first Tuesday in July.

When we come to the quality of the Roses I fear that we must state of the season generally that it was distinguished for "mediocrity." In calling to mind the flowers I have seen there are no stands which dwell in one's memory as in former years—no blooms that linger in one's mind as a "joy for ever." There have been good boxes of blooms, and some fine individual flowers, but that is all that can be said, I fancy, concerning them. There were some dark coloured flowers—old favourites—which came quite to the front, such as "General Jack," as he is familiarly called, Charles Lefebvre, Prince Arthur, a son of the General's, but very much darker; while the light coloured Roses, or rather those which are very full, suffered terribly. I have been surprised to find how well such flowers as Baroness Rothschild, Merveille de Lyon, and White Baroness have withstood the most drenching rain, while flowers like Monsieur Noman, Lady Mary Fitzwilliam and Her Majesty were simply balls of rotten leaves, making no attempt to open, and defacing the beds with their unsightly buds. It is very difficult to judge as to Teas, as to whether they have been grown under glass or not. Where there is a house, of course the exhibitor has a great advantage, and some of the best stands were aided by flowers so grown. In many cases they were skinned—that is, all the outer petals which had been discoloured were stripped off—of course greatly disfiguring them, but rendering them at the same time presentable; still they were only half Roses. It was, however, on the whole very wonderful how, in the midst of such weather as we have had, such clear blooms could have been produced from plants which one knew to be grown in the open—clearly evidencing how much the culture of Tea Roses has advanced.

There were two subjects connected with Rose showing concerning which a good deal was said at various times and places during the show season. The first was the question of amateurs selling Roses. This subject was very much discussed some years ago, and was brought under the consideration of the committee of the National Rose Society, and a rule was framed prohibiting persons who "habitually" sold Roses from exhibiting in the amateurs' class. It would appear, however, that a rather narrow interpretation has been given to the word, and that what some consider habitual others consider only occasional. It is said, and said with justice, that a gentleman who buds his 1000 or even 500 every year, and in order to make room for them sells off his old stock, fights at a great advantage those who

never sell, and that it matters little how he does this—whether he has an auction and so disposes of them, or hands them over to a neighbouring nurseryman, he is virtually a trader and not an amateur; while many say it destroys the pleasure of Rose showing when you know you are competing with men who thus handicap you in the race. Very strong things have been said, and I presume that we shall hear more about it; but I hope and believe, whatever steps are taken will be made in a conciliatory manner, and that the good feeling of those who are supposed to do these things will lead them to change their method of showing and growing.

Another subject about which exhibitors' minds seemed to be very much exercised was what is called "pot hunting," i.e., exhibitors being more regardless of the amount of money they can get than the honour and glory of the warfare; and that thus, instead of exhibiting in the classes in which the number of the plants they grow would seem to place them, they go down to lower classes, and by their big battalions overpower them. It is possible that an amateur, who grows under 200 Roses may show a twelve that will beat the exhibit of one who grows 1000; but it is not likely, and if he does, he deserves immense credit for his pluckiness. Now no rule that a society can make can prevent this. The National, in order to give all a fair chance, made a number of small classes, and yet, withal, many amateurs are to be found exhibiting in these classes who ought not to think of it. I remember some years ago, at the Crystal Palace exhibition of the National Rose Society, one who was currently reported to grow 10,000 trees setting up a stand in a class of six, eliciting the caustic remark, "I think it would be very nice were they to make a class of three for Mr. —;" but as I have said, no rule that can be made can meet such cases—they must be left to the honour and good feeling of English gentlemen, although I cannot but think that if the "National" were to pass a resolution condemning the practice it would have a good effect.

I hope to follow these notes up with some on the new and semi-new Roses that have been exhibited, although not in the number one might have expected or hoped. *Wild Rose.*

ORCHID NOTES AND GLEANINGS.

EPIDENDRUM NEMORALE (E. VERRUCOSUM).

THE fragrance and beauty of the flowers of this Orchid, together with its free-growing character, make it one that may certainly be included amongst the comparatively few Epidendrums that are worth cultivating. It belongs to that section of the genus with short, round pseudobulbs, the flower-spike rising from between the two long narrow leaves at the top. The flowers, of which ten or twelve occur on a spike, measure 3 to 4 inches across, and are of a delicate pale rose colour; the lip is prettily veined with purple, and in some varieties has a patch of white in the centre, which, however, is absent in others. It is figured in the *Botanical Magazine*, t. 4606, as *E. verrucosum*, a name under which it is known in some gardens now. It is a native of Mexico, and succeeds well in the intermediate-house potted in fibry peat and sphagnum. A plant is now flowering at Kew.

BRASSAVOLA LINEATA.

A plant of this at Kew has been displaying its large white flowers for several weeks past; indeed, there are few Orchids whose flowers last longer in perfection than these. The whip-like, terete leaves, 2 feet in length, greatly resemble those of *Scuticaria*, and, like them, grow in a downward direction. The sepals and petals are linear, and about 3 inches long; the lip is cordate, and measures 1½ inch in diameter, the whole flower being of pure ivory-white. This plant grows and roots freely on a piece of Fern-stem or Teak block, and if suspended from the roof its

flowers and curious habit are shown to advantage. The intermediate-house suits it, giving abundance of moisture when growing, and a well-marked period of rest after growth is completed.

CYPRIPEDIUM PARISHII.

Numerous and popular as are the different forms of *Cypridium* there are few having a better claim to notice than this species, which flowers at this season. It is nearly related to *C. levigatum*, to which it bears some resemblance, especially in habit; that species, however, is a native of the Philippine Islands, while *C. Parishii* comes from Moulmein, where it was originally found in 1859 by the veteran Orchid discoverer after whom it is named. The prevailing colour of the flower is pale green; the petals, however, which are twisted and nearly 5 inches long, are dark purple for two-thirds of their length; the slipper also has a purplish tinge. The apex of each petal is rounded and edged with short hairs. No collection of *Cypridium*s should be without this species, for even out of flower its thick dark green glossy leaves make it a very handsome plant. It requires to be grown in the warm house. *W. B.*

EPIDENDRUM TAMPENSE, Lindl.

This graceful little *Epidendrum* has long been known in herbaria, having been originally described by Lindley, from a dried specimen collected in Tampa Bay, Florida—the locality whence it was obtained being commemorated in the name given to the species. Until the other day I had no evidence of its being in cultivation; Mr. James O'Brien, however, sent me an *Epidendrum* to name which had been imported from Florida, and which I was able to identify with Lindley's specimens. It is one of the few *Epidendrums* found in Florida, and at present is not known from elsewhere. The specimen received consisted of a pseudobulb, leaf, and inflorescence, and from it the following notes were taken:—Pseudobulb ovoid, small, and narrowed above. Leaf narrowly linear, 6 inches long by ½ inch broad, scape slender, exceeding the leaves, smooth, and brownish in colour. Flowers 1½ inch across. Sepals linear, obtuse, narrowed below, light yellowish brown in colour. Petals similar, but more narrowed below, light yellowish-brown in colour. Petals similar, but more narrowed below. Lip white, the front lobe rounded, obtuse, with a number of radiating purple lines, which become somewhat confluent into a blotch; the side lobes linear with a few faint purple lines below. Also the narrowed base of the front lobe has a number of purple lines which become almost confluent on the callus. The column is greenish-white, with a pair of short, angular teeth on the angles, and three to five light purple stripes on the back. It belongs to the section *Encyclium*, distinguished by the nearly free lip, and is, perhaps, the smallest and most slender species in the group. *R. A. Rolfe.*

THE CHEMISTRY OF VEGETATION, IN REFERENCE TO THE GROWTH OF THE POTATO.

(Continued from p. 128.)

PRIESTLEY: OXYGEN.—Two years more elapsed before Priestley found that. But from 1756 Black had been a Professor of Chemistry, first at Glasgow and then at Edinburgh (which post he held thirty years), and he was so assiduous in preparing his lectures that he allowed himself no time for investigation. Of course he had to run much on the old lines, as the new discoveries were not yet sufficient to constitute a new science. Cavendish was fully occupied with other researches.

Priestley was mostly known during his lifetime as a Nonconformist divine. One of his biographers (Lord Brougham) has said of him that though he was trained in Latin, Greek, Hebrew, Syriac, and Chaldean, he was only half trained in chemistry, and able only to experiment. What a blessing! It was experiment that was needed to advance chemistry. When living at Leeds in 1767, near a brewery, he

had experimented on the "fixed air" given off during fermentation; had also, in 1772, examined azote, and at Birmingham, on August 1, 1774, he made his important discovery of the air we now call oxygen. He called it dephlogisticated air. The following year it was independently discovered by Scheele in Norway. He called it empyreal air. From the discovery of oxygen the new chemistry took its rise. Priestley's statue at Birmingham represents him in the act of making his discovery. It is on record* that he first obtained it (in a closed vessel heated by a burning lens), from minium commonly called red lead (red oxide of mercury). From the statue few would know that. But then Newton, in Trinity Library, is represented (so it has been facetiously put) as making the remarkable discovery that you cannot see through a plaster prism!

In this same year Stahl found the gas now called fluorine, and many others were soon studied.

CAVENDISH—WATER, &c.

Cavendish, who had been studying "nitrous air" and the atmosphere in relation to it, read at the Royal Society in January, 1784, his celebrated paper, "Experiments on Air," in which he described his experiments that led to the discovery of the composition of water and of nitric acid. Till oxygen had been discovered as a separate "air" the union of inflammable air (hydrogen) with dephlogisticated air (oxygen) to form water could not, of course, be known; it was practically a continuation of his previous experiments with H, but he now exploded it in O instead of air.

We thus see that in the thirty years following (1752) Black's first observations on "fixed air," that H, O, N, had been discovered as distinct airs or gasses, that some compounds of C and N were investigated, the composition of water was made known, and the composition of the atmosphere was receiving increased attention. All of these studies lay at the commencement of our modern chemistry.

DALTON'S ATOMIC THEORY.

Activity in chemical research had been by this time aroused in several centres of civilisation in Europe, and many experiments were made. Guyton de Morveau, in 1782,† wrote an essay on a new nomenclature to represent the then state of the science, but the next great step in advance was Dalton's question, What do all these facts mean?

Dalton (b. 1766) had from 1796 given considerable attention to the constitution of the atmosphere when in 1802 he communicated to the Manchester Society a paper, "An Experimental Inquiry into the Proportion of the several Gases or 'elastic fluids' Constituting the Atmosphere." It is worth noticing his analysis, as it is an illustration of the way in which analyses were in his time given in percentages:—

Azotic gas	...	...	...	75.55 by weight.
Oxygenous gas	...	...	...	23.32 " "
Aqueous vapour...	...	...	...	1.03 " "
Carbonic acid gas	...	...	...	0.10 " "
				100.00

A great many chemists set about examining the constitution of the atmosphere, with different results. We now know that it is only the azotic gas (nitrogen) and the oxygenous gas (oxygen) that have a constant proportion, while the carbonic acid gas and the aqueous vapour and other constituents vary according to circumstances.

Dalton's paper, however, has a higher interest. In it he mentions that he found that 100 measures by weight of common air would combine in a narrow tube with 36 measures of pure nitrous gas or with 72 in a wide vessel—72 is the multiple of 36. The combination would take place in no intermediate quantity. He subsequently examined the gases known as light carburetted hydrogen and heavy carburetted hydrogen, and here he found the carbon in the latter double that of the former. This set him thinking about the proportions by weight in which

combinations take place, and he enunciated the view that they all do so in some definite proportion or some multiple of that proportion. This, which is now known as the law of chemical combination in multiple proportion by weight, has been so definitely established by countless experiments, that it forms the foundation of all chemical work. (One illustration may make the law clear. There are five distinct compounds of N and O known, and the proportions by weight of O in them are 16, 32, 48, 64, 80, to 28 of N in each case.) A year later he read another paper in which he stated what he conceived to be the explanation of these facts. The paper was entitled "On the Absorption of Gases by Water." In it he asks the question, Why does not water admit its bulk of every kind of gas alike?—and his reply is, "I am nearly persuaded that the circumstance depends on the weight and number of the ultimate particles of the several gases. . . . An enquiry into the relative weight of the ultimate particles of bodies is, as far as I know, entirely new." This guess or theory he proceeded to work out, and in 1805 published his first paper "On the Weight of the Atoms of Different Bodies." This theory to account for the law is quite apart from the law itself. The law is an established fact. The theory may possibly even yet turn out to be not the fully true one. Gay-Lussac's paper of 1809,* "On the Combination of Gases by Volume," for a while caused some confusion, especially to Dalton himself. Gay-Lussac showed that gases combine with one another by volume in proportion of 1 to 1, 1 to 2, 1 to 3, &c., but no intermediate volume. A study of the question, which it would take too long to enter into, showed that the two lines of research were confirmatory, and not antagonistic. Dalton's theory is known as the "atomic theory." The Swedish chemist, Berzelius (who, following Richter, was working at the same subject), brought out in 1812 his paper "On the Fixed Proportions and Weight of Atoms," based on exact and manifold experiments.

Whatever may be the future of the atomic theory, it is accepted as at least "a good working hypothesis." Repeated experiments, with instruments of delicate precision have been made since Dalton's time. On the theory or assumption that the relative combining weights of different "bodies" (as Dalton called them) indicates in all known combinations the relative weights of their atoms we have our tables of atomic weights of the elements, W. S. M.

(To be continued.)

HARDY FLOWERS FROM HOLLAND.

MR. C. G. VAN TUBERGEN, jun., of Swannenburg, Haarlem, has sent another collection of Lilies and hardy flowers from his nursery, amongst them a handsome spike of *L. Hansoni*. This species has proved itself to be a better garden plant than it was thought to be at first. It was at one time confounded with *L. avenaceum*, and when exhibited for the first time at South Kensington it was awarded a Second-class Certificate. Later—on June 18, 1878—a fine pot of it was exhibited by Mr. G. F. Wilson for a second time before the Floral Committee, when it received a First-class Certificate. It has since proved to be an excellent garden plant, well deserving the highest award; in fact, the gravest objection to Second-class Certificates is contained in the fact that perfectly new plants are seldom shown at their best the first time, and a first-class thing may be depreciated in value for lack of sufficient material to show its intrinsic worth. The lovely *Chionodoxa Lucilæ*, for instance, was passed over the first time, and received a First-class award when ample material was available.

L. pardalinum, with stems 8 feet high and seven flowers on each, is a noble Lily. We have it in our own flower borders, but it has never exceeded 6 feet;

probably our soil is too dry for it, as it seems to be a moisture loving plant. Dr. Bolander, who saw it growing in its native haunts in California, describes it as a magnificent Lily, attaining a height of from 6 to 9 feet, at an altitude of about 4000 feet, and growing in wet, boggy soil. The petals are yellow, densely spotted with purple red dots; the tips of the petals are orange-red, and unspotted. *L. pardalinum angustifolium* is also sent; it is richer in colour, the petals as well as the leaves being longer and narrower. *L. Parryi* came to hand in capital condition, and grows freely over there. Its clear yellow flowers, lightly spotted, are exceedingly pretty. As a choice border plant, it takes high rank amongst Lilies. It is from the same altitude in California as *L. pardalinum*, and was discovered "in the Potato patch of a settler in boggy soil."

A vigorous spike of *L. Martagon dalmaticum* shows what an excellent border plant it is; the flowers deep purple, faintly spotted. The good old *L. chalconicum* is also amongst them. Its native habitat is Hungary, and always on the tops of the mountains.

A spike of *L. excelsum* was sent to show the vigour of this species, the buds were unopened; but these open when the spike is placed in water. This has been grown in England on spikes 6 feet high, and twenty-four flowers on a spike.

L. philadelphicum, an interesting and distinct species, is well known, and was first grown by Mr. Philip Miller in 1757. The flowers are orange-red, with blackish red spots. Miller considered this and *L. Catesbei* to be "less hardy than some of the other sorts."

L. Kramerii.—This fine species, or hybrid, was also sent—a deeply coloured form of it. Mr. Baker believes it to be a hybrid between *L. speciosum* and *L. japonicum*; but whatever it is, it is a beautiful Lily, and succeeds well in the open border. I was talking about this Lily to Mr. G. F. Wilson the other day, and he says it has been grown with as many as nine flowers on one stem with Mr. McIntosh, at Dunevan. One, two, and three flowers on a stem are more frequent. This has large delicate pink flowers. This and *L. auratum* thrive admirably in the soil of *Rhododendron* beds.

Four more distinct forms of *L. Thunbergianum* show how this useful old species varies not only in the colour, but also in the form of the flowers. By far the best is a new form introduced from Japan, and unnamed. The flowers are well formed, and of a decided scarlet shade.

Pictum is a free-flowering vigorous variety, with reddish-orange coloured flowers; sanguineum is dark coloured, but the form of the flower itself is not good. The darkest variety is *grandiflorum*, but it is a misnomer, as the flowers are not large nor of good form. The variety grown in England has orange-yellow flowers of good substance. Mr. Tubergen's variety corresponds with our *atro-sanguineum*.

The silvery variegated form of *L. longiflorum* is a pretty plant for borders or pot culture. A long healthy spray of *Littonia modesta* Keitii is also sent with the note, "Darker in colour and more numerous flowers than *L. modesta*. Against a very warm and sunny wall a lovely thing!"

The flowers are orange-yellow, and one is produced at the axil of each leaf. It forms a curious tuber as large as a Spanish Chestnut. *Tricyrtis macropoda* is a novel plant for the herbaceous border. It is probably a better garden plant than *T. hirta*, which flowers too late in the autumn to do any good. It has creamy flowers densely spotted.

A handful of *Brodiaea grandiflora* shows most vigorous development. It was named in honour of Mr. J. Brodie, of Brodie, in North Britain. Douglas collected it for the Royal Horticultural Society in dry plains west of the Rocky Mountains, and it blossomed in the gardens of the Society in July, 1828, in the open border in peat soil.

A bunch of *Ixia Galatea* represents the best of the late flowering varieties. It has well formed pure white flowers with a black centre.

A few specimens of a bulbous plant with yellow

* Phil. Trans., lxx., p. 397.

† Observations de Physique, 1782, May, p. 371.

* Mémoire sur la combinaison des différents gaz avec les autres. Arcueil. Mem. de physique, ii., 1809.

flowers, named *Calliprora flava*, are sent. It is a distinct and pretty hardy plant, not differing in any respect from *C. lutea*. It is another of the introductions of Mr. David Douglas from California.

Some of the scapes have a score of flowers upon them. Some trailing growths of *Tropaeolum polyphyllum* and a big handful of *Iris Kämpferi* complete the collection. The Lilies are the most remarkable, and prove how valuable they are as border and pot plants. *J. Douglas.*

CLEMATIS JACKMANI ALBA.

SOME quarter of a century ago I had learned to appreciate the extraordinary value of *Clematis Jackmanni*, and when admiring it the exclamation frequently arose, "What a glorious thing a white Jackman would be!" At that time I had just succeeded in raising the beautiful set of patens varieties—Miss Bateman, Albert Victor, Lady Londesborough, Lord Londesborough, and a host of others, all lovely, and still holding their own, as they are still unsurpassed. I tried all ways I could think of, and at last after—I am afraid to say how many—years I succeeded in getting a cross between *Jackmanni* and white patens. From this number of seedlings no break at all appeared of any importance, except the present subject, but it flowered, and I was delighted, and showed it to one or two people, and told many more; its after history is well known—its hair-breadth escapes, almost total loss, its disappointments, its condemnations. I had planted out a specimen, and watched its opening flowers, when, to my disgust, it produced a nondescript, dirty bluish abortion. I said "Propagate no more!" and for a year or two I crestfallenly admitted to all my friends that *Jackmanni alba* was a disappointment, and should never be sent out. After a time, however, I remembered the parable of the Fig tree, and said "Dig about it, and try again." It was done, and at last, in 1883, it appeared in public in its true form. A good many thousands have now been circulated over the world, and although I have had some very pointed questions put to me respecting these abnormalities, one or two abusive letters, and one case of a Dutchman who refused to pay, I may say that altogether I am quite satisfied with my child; but its habit of producing the nondescript flowers is very curious indeed. The flowers produced from the old wood during the months of May, June, and July, are double or semi-double, solitary, and of a bluish French-grey; while those produced from the young shoots, in August and September, are single and white, in pairs on a long raceme, showing as many as ten pairs and a terminal on a string. This is one of those freaks of Nature which are such sore puzzles to the poor unscientific ones. It appears to me that the union of the blood of patens, a spring-flowering kind, with *Jackmanni*, an autumn type, is complete so far, but that a kind of rivalry, if I may use the term, is set up to see which type is the stronger. As far as my experience has gone, the patens form is never white, and only flowers when the old wood is left growing, but always appears during May, June, and July, while no *Jackmanni* form is ever seen during those months; on the other hand, when the old wood is cut away no patens is ever seen, but *Jackmanni* commences and produces a mass of flowers on the shoots of the year during August, September, and October, as true *Jackmanni* does.

I have one other case, perhaps equally curious, though different; the kind named *Proteus* produces large double flowers about June; it then rests a month or so, and then commences to flower again, producing its second crop of flowers quite single, but of the same colour.

I wish some of the thousands who have grown *Jackmanni alba* would give their experience, because it seems to me a very interesting problem, and it would be well to know if the plant has perpetrated any further freaks. As far as I know, the purple *Jackmanni* never flowers in the abnormal way just described with regard to alba, whether allowed to flower on old or young wood, though in both cases

(purple and white) the four or six parted flowers are produced on plants more or less robust. If very strong, the first burst of flowers will, many of them, be six-parted in both kinds.

As regards the origin of *C. Jackmanni*, all I can say is that no *Clematis* approaching the character of *Jackmanni* ever came under my notice through Mr. Fortune, either from China or Japan, as far as I can remember. Fortunei, Standishii, lanuginosa, and lanuginosa pallida, and, lastly, John Gould Veitch, were all Fortune's importations. M. Lavallée's notion, that *C. Jackmanni* is the *C. hakonensis*, a native of Japan, is very curious. I myself believe implicitly in *Jackman's* version against it, but there are so many extraordinary things amongst plants, that it is not safe to speak positively. There is, for instance, the remarkable *Cytisus Adami*, whose story need not, perhaps, be repeated here.

SPIRÆA NOBLEANA.—Then in my own case I grew *Spiræa Douglasii* (North American) and *Spiræa callosa* (China), side by side. The plants seeded and fell on the ground, producing a crop of seedlings for yards round. The young plants were grown on, and a large number produced a form about midway between the two species. Dr. Lindley named it *S. Nobleana*; that was strange, but the most remarkable thing remains to be told. The same plant (identically the same) was raised the same year by the late Robert Donald, of Woking, and M. Lierval, of Paris; not only that, but Dr. Lindley told me he had dried specimens from North America agreeing exactly botanically with my *Spiræa*. I myself saw the plants growing in Mr. Donald's and M. Lierval's grounds. *Charles Noble, Bagshot.*

FUNKIAS.

SEVERAL of these are highly ornamental on account of their foliage, and there are few things that give a more tropical appearance to certain parts of a garden than they do when judiciously placed, as, though not of large size, they are of bold contour, and very striking and effective in the rich hue of the leaves. One of the finest in this respect is *F. Sieboldi*, which is the largest of the species, plants of it in suitable soils or situations attaining a height of 3 feet, the stems being stout and strong, and the foliage somewhat heart-shaped, and from a foot to 15 inches across, the colour being of a peculiar blue-green with a metallic hue, which renders it very distinct. Not only is this *Funkia* a striking object as regards its leafage, but the flowers are effective, as they are Lily-like in appearance, and are borne on tall spikes, where they show off in fine contrast to the foliage below.

There is another species, *F. Fortunei*, which resembles the one just referred to, but its leaves are of a stouter texture and more glaucous in hue. The next most noteworthy *Funkia* in point of foliage is *F. ovata*, the leaves of which are large and broad, and the habit of the plant strong and robust. *F. subcordata* is another fine species which has big heart-shaped leaves, less ribbed than those of *F. Sieboldi*, and not nearly so glaucous, the flowers being creamy white, and borne on shorter stems than the others. *F. grandiflora* (fig. 17, p. 153) produces the finest blooms, which are borne in tufts on the top of tall spikes, and when fully expanded make quite a show. *F. lancifolia* has, as its name implies, lance-shaped leaves, and there are many beautiful and interesting varieties of this well-known species that are prized for the rich markings of their foliage, one being *F. lancifolia albo-marginata*, which has an edging of white round the leaves; and *univittata*, which has the midrib marked with the same colours; *undulata* variegata is variegated, more or less, all over the surface. These last-mentioned look exceedingly well when grown in the herbaceous border, but they are more particularly adapted for edging large beds, where they associate well with other foliage, or help to tone down and form a suitable setting for gay

flowers. The four first-named are of great value in the subtropical garden or hardy fernery, where much may be made of them either in masses or single clumps, in either of which ways they always command admiration. Although *Funkias* will do in almost any soil or situation, that which suits those now being treated of is a partially shaded position, where there is plenty of depth of loose rich soil, and an abundant supply of moisture, as then the plants can send their fleshy roots down, and the foliage becomes more rich and handsome from the extra feeding it gets. The way to propagate or increase *Funkias* is by division, which may be carried out almost at any time, but is best done in the spring, just when the plants are beginning to start, a period when they may be taken up, and cut through, and divided into as many pieces as there are crowns, and each one will grow. *J. S.*

REPORTS OF THE POTATO CROP UP TO JULY 20.

SCOTLAND.

ABERDEENSHIRE.—Potatoes are late, but there is no indication of disease. There are complaints in the fields of the crop not coming regularly, but should we now get warm weather appearances are in favour of a good crop. New Potatoes are not general, but with me Sharp's Victor still bears the palm as the first. *R. Farquhar, Fyvie Castle, Fyvie.*

ABERDEENSHIRE.—Potatoes, like most other vegetables, are very late, owing to the backwardness of the season, and the late frost cut down all the earlier sorts after they were 6 inches high. The general crop and field crops are now—since the copious rains of late—making a fairly good appearance, and up to this date there seems no appearance of disease. *J. F. Smith, Dunceath Gardens.*

AYRSHIRE.—Potatoes look well in fields about here, and garden crops are good and clean. No signs of disease as yet. Dry warm weather very much needed now, the night temperature for the last fortnight being very low—seldom above 40°. *W. Priest, Eglinton Gardens, Irvine.*

EAST LoTHIAN.—Potatoes in the gardens are all looking healthy and promising, in the meantime; Old Ashleaf and Myatt's Prolific are of a fair size and good quality. We were exactly fourteen days later to begin using them this year than in 1887. Field Potatoes are all looking well at the present time, although late. But really the prospects of the farmer and the gardener this season are not very bright in this district at the present time. *L. Dow, Newbyth Gardens, Prestonkirk.*

FORFARSHIRE.—Potatoes are growing most luxuriantly, with every prospect of a good crop. It was far too good last season, and there have been far too many for folk and cattle to consume; in consequence some long Potato pits are yet untouched, as the prices would not pay the labour of lifting. *J. Mitchell, Panmure Gardens, Carnoustie.*

MID-LoTHIAN.—Potatoes, like all other crops, are fully a fortnight later than in an average season, but they are very healthy, and with the rain of the past fortnight they have grown vigorously, so that there is every appearance of a fine crop in the autumn, if we have an average dry and warm season to bring them to maturity. Early varieties are turning out well, although a little soft from the heavy rainfall. There are no signs of disease yet; but it has seldom appeared of late years in this district till the end of July, and for the last few years the attack has been slight. A succession of dry autumns has done much to lessen its virulence, and with another dry autumn the probability is that we shall hear little about it. *M. Dunn, Dalkeith Gardens, Dalkeith.*

ENGLAND—NORTHERN COUNTIES.

NORTHUMBERLAND.—Potatoes look well, but we have not yet lifted any. Planting could not be done before April, and since then the weather has been exceptionally wet and cold. On June 14 we had a



FIG. 17.—*LUNELIA GRANDIFLORA*: FLOWERS WHITE, POLLEN GRAIN MAGN. 320 DIAM. (SEE P. 152.)

severe hailstorm which injured the leaves, and I cannot say what kind of a crop we shall have. If the weather continues so cold as lately, we shall have no French Beans or Scarlet Runners, nor Vegetable Marrows—outside. *G. Harris, The Castle Gardens, Alnwick.*

— It is yet too early to speak with any certainty as to the Potato crop, owing to the very late season. Early kinds are lifting splendidly. The weight is below the average, but the tubers are of excellent

quality. Scotch Regents and Champions look well in the fields. I have not yet heard of any disease. *D. Inglis, Howick Hall, Lesbury.*

DURHAM.—In our district Potatoes are very backward, and the early varieties now being lifted turn out small in size but clean in the skin. The crop is fully three weeks later than usual, from absence of warmth. Late crops are the same, although now growing fast, and as yet there is no trace of disease. The haulm of field Potatoes has covered very little

of the ground. *J. Hunter, Lambton Gardens, Fence Houses.*

YORKSHIRE.—The Potato crops about here are very promising, but we have found some disease among the early kinds. The late crops in the fields look very promising, and will give large returns. *J. Shaw, Nonington, Bolton Percy.*

— In this district the Potato crops never looked better than they do now. No symptoms of disease so far, but I fear the continuance of wet weather we

have experienced will do much to favour its chances. It generally shows itself here about the end of July or first week in August. *W. Chuck, Brodsworth Hall, Doncaster.*

— The Potato crop is likely to be a good one, but quite three weeks later than usual. Early sorts are scarce as yet. We had more than our usual quantity of rain in June, consequently the tops are very strong. We now want warm weather to complete the crops. *W. Culverwell, Thorpe Perrow, Bedale.*

— Early Potatoes a good crop—clear of disease. Late crops are healthy and promising, but the excessive rainfall—amounting to 4 inches already for the month of July—with thermometer at night down to 38° and 40°, I fear, must have a serious effect on them. *R. C. Kingston, Brantingham Thorpe Gardens, Brough.*

LANCASHIRE.—Potatoes, like everything else, are late, and to provide a supply at the usual time have had to be dug up at considerable sacrifice. It is yet too early to say anything of the disease, but the conditions calculated to generate it have been most favourable the past few days. *W. P. Roberts, Cuerdon Hall, Preston.*

EASTERN COUNTIES.

LINCOLNSHIRE.—The early Potatoes turn out well in this district, but somewhat later than previous years, owing to the prolonged cold weather. Early Rose and Mona's Pride are two good sorts about here, and are very clean and free from scab. As yet there is no sign of disease. The field and late crops are looking remarkably well. The heavy fall of rain was much wanted, and seems to have come at the right time. Magnum Bonums are a leading late sort here. *T. Rowlands, Bardney Manor, Lincoln.*

— Potato crops with us are looking very well. No disease has made its appearance as yet, and early crops are turning out well, but they are later than usual. *D. Lumsden, Bloxham Hall Gardens, Sleaford.*

NORFOLK.—Potatoes are looking well. The yield at present is good in places. Late sorts at present are running very much to haulm and the disease is making its appearance in places. *J. Forder, Hillingdon Hall, King's Lynn.*

— In this neighbourhood the crop is the best we have had for some years. All kinds have turned out well up to the present, and we have not seen any indication of disease. *F. Lee, Lynford Hall, Mundford.*

SUFFOLK.—Potatoes look remarkably well in this district, and bid fair to produce a most abundant crop, as the ground has lately had a thorough soaking, which will greatly assist the tubers in forming and swelling, and will render the land moist enough to carry them through. The only thing now to fear is the Peronospora, but as yet I have not seen or heard of a trace of it here or elsewhere. *J. Sheppard, Woolverston Park, Ipswich.*

— Early sorts are good in crop and quality; late kinds, where grown in open positions and on porous subsoils, look, at present, healthy and promising. In some low-lying damp spots blotched leaves are already prevalent, showing very like the disease. A return to bright dry weather is much to be desired. *J. Wallis, Orwell Park, Ipswich.*

— The Potato crops are clean and vigorous; they were generally cut down by the frosts about the middle of May, and came up later than usual. Tops have made extraordinary growth since the thunderstorms in July. Tubers watery, but free from disease. With dry warm weather Potatoes promise a yield above the average. *D. T. Fish, Hardwicke Gardens, Bury St. Edmunds.*

ESSEX.—Potatoes promise well so far. They were long in forming tubers. We could not dig from the early borders until the first week in July. We began with the old variety of Ashleaf, and are now digging Myatt's. We grew Sutton's No. 36 last year, and found it so good in crop and quality that we planted a lot of it this year; the Village Blacksmith was also of excellent quality. We have those two and Victoria for the general crop, and their appearance is all that can be desired; there is a lot

of Myatt's in the field with them, which are also excellent. *J. Douglas, Great Gearies, Ilford.*

— As a result of past rains, there exists around here an exceedingly robust haulm, the bloom upon certain varieties being very abundant and pretty to behold. Early varieties, both kidneys and rounds, taper but very slowly from want of heat. I note that young kidney Potatoes newly dug prove firmer when cooked than is customary during drier, and what are considered more favourable seasons. *W. Earley, Double House, Ilford.*

— Potatoes are looking wonderfully well—in fact, almost too strong. We have only lifted Ashleaf and Beauty of Hebron as yet, both of which have turned out well. I have not seen any sign of disease, nor heard of it. *A. Ocock, Havering Park, Romford.*

— The Potato crop is looking magnificent, and judging from what is being lifted daily, the produce promises to be the most abundant we have had for years. No signs of disease at present. *W. F. Bowman, Highlands, Chelmsford.*

MIDLAND COUNTIES.

BEDS.—The Potato crops are looking well at present, but the disease is making its appearance on the cold heavy land. A dry time would now be very beneficial to ripen the tubers. *G. Ford, Wrest Park, Ampthill.*

— The Potato crop promises well. The tubers are large and excellent in quality. With plenty of sunshine the crop would be larger and better than we have had for many years. On the other hand, if the weather continues wet the blight will spoil it utterly. I have heard of the disease being observed in low-lying districts hereabouts, although I have not seen it myself. *W. M. Baillie, Luton Hoo Park, Luton.*

OXFORDSHIRE.—The quality of the tuber at present is not by any means in proportion to the haulm, which this season is unusually strong and healthy, showing a marked contrast to last year. Myatt's from the open borders are fairly good, and Early Rose—a kind much grown in this neighbourhood by the cottagers—are being dug as wanted, and in most cases are of good size, but immature. During the last week I have heard reports of disease from the heavy land in this district. In one case three or four bad to a root. On the lighter and drier parts the crop could not look better, and with favourable weather they promise an abundant yield. *G. Stanton, Park Place Gardens, Henley-on-Thames.*

BUCKS.—Potatoes are looking well at the present time. No disease visible on the haulm, neither have we found any diseased tubers yet, and the growth is all that can be desired. If favourable conditions prevail after now we may fairly anticipate having a bountiful yield. *G. T. Miles, Wycombe Abbey, High Wycombe.*

— This crop is looking remarkably well. No appearance of disease of any kind. Veitch's and Myatt's Ashleaf are our best earlies; for second early we find Snowdrop a fine variety; it cooks very white, and is always good, with very few small tubers. For main crop we grow M.P., which has been good here for two years past. *J. Smith, Mentmore, Leighton Buzzard.*

— The Potato crops are very late, but look well, and with dry hot weather the yield would no doubt be a good one. We are now lifting good crops of Veitch's Ashleaf and Beauty of Hebron. Later varieties not yet developed. Have seen no disease as yet, but it is reported in the neighbourhood. *C. Herrin, Dropmore, Maidenhead.*

HERTS.—Early kinds are generally very late this season, and the first liftings were very light crops of poor tubers. Early and second early crops now being lifted are turning out well—not large, but good crops of clean tubers, Snowflake, which we grow largely, being the best. Late crops are looking remarkably well in the fields everywhere, and of which there are several hundred acres grown in this district. Perhaps they are making a little too much haulm, sunshine being sadly needed just now for

them as a counter-action to the over-sodden growth. Disease is reported in a place or two, but I have not seen any signs of it myself. *J. Kipling, Knebworth Park, Knebworth.*

SOUTHERN COUNTIES.

BERKS.—Potatoes look very promising at present, but unless we soon have some warm sunshine and a few weeks dry weather, I fear for the crop on our rather heavy soil. The quality as yet is very inferior, American Earlies in particular being very watery when cooked. The best are the different varieties of Ashleaf.—Midsummer Kidney and Sutton's Ring-leader are also good. *W. Pope, Highclere Gardens, Newbury.*

— I am out of the Potato world. I do not like the monsters that the American varieties produce for us I am personally anxious for the disease to come, as I have some seedlings with which I want to prove as to resistance. Potatoes in this neighbourhood are too gross in the haulm. I hear of some rotten in damp clay soil—I do not like to dub it "the disease." I am still fighting with Solamum Fendleri and S. tuberosum. I have placed cuttings of the haulms of the latter to give me late flowers in the open ground to try and come in with Fendleri. *Robert Fenn, Sulhamstead, Reading.*

— Potatoes are looking well, and the crop is enormous on our Ashleaf Kidneys, the haulm on all varieties looking healthy, with a promise of an excellent crop, and Peas of all kinds have been very good and plentiful up to this period, although they filled slowly. Our rainfall, from July 1 to the 18th included, has been 3½ inches; out of that time we have had seven sunny days—all others more or less overcast, cloudy and cold, with rain, hail, and thunder. *T. Jones, Frogmore, Windsor.*

— A remarkably fine crop of tubers of uniform size. The yield, so far, is twice as good as that of last year. The field crops have a great number blank, some varieties being worse than others. *N. Sinclair, Easthampstead Park Gardens, Wokingham.*

MIDDLESEX.—I have delayed my report upon the Potato crops because small rumours have come to hand of disease appearances, but so far none seem to be serious, or, indeed, definite; amongst some of the earlier planted of the Rose family there may be found on very wet soils tops turning yellow or brown, or literally decaying; but that appearance seems to be as much due to the action of continuous cold and heavy rains upon a tropical plant, and especially upon some of the less robust forms, as to any other cause. With respect to the Potato crop generally, it never looked better than now, no matter whether the plots be of a few rods or of 20 acres. At the first the plants came through unevenly, but the moist condition of the soil soon caused amendment. Did warm weather ensue and the disease remain absent, we should have one of the grandest crops of Potatoes on record. Of scores of kinds all look well, and some very fine samples ought to be lifted during September. *A. Dean, Bedford.* [Mr. Dean again writes, "Disease has now appeared." Ed.]

— Early Potatoes are good, and an average crop. Veitch's early Ashleaf, Covent Garden Perfection, and Myatt's have been very good, and free from disease. Late kinds look promising; Sutton's Seedling is remarkably good, and will, I think, prove a great favourite; Magnum Bonum, Beauty of Hebron, and other heavy cropping varieties look well, and do not appear, so far, to have suffered from the low temperature and excessive moisture we have had all through this month (July); we have seen no disease. *G. W. Wythes, Syon Gardens, Brentford.*

SURREY.—The early Potatoes are very fine, and capital in flavour; all other succession and late crops look very promising, but owing to the season being so late, and the continuous rains, it would be difficult to express a safe opinion on the amount of the crop at lifting time. *A. Evans, Lythe Hill, Haslemere.*

— Early Potatoes are the finest crop we have had for some years, and of excellent quality. Late varieties look remarkably well, and so far no ap-

pearance of blight. *J. Burnett, The Deepden Gardens, Dorking.*

KENT.—Potatoes look extremely well, but almost too much haulm on main crops. Early sorts are turning out well in quantity when lifted, but exceedingly soft, especially Early Rose, and some of the larger kidney sorts. I have heard rumours of blight already, and am afraid it will become general should this wet weather last. *Wm. Craik, Hothfield Place, Ashford.*

—Potatoes are looking wonderfully well, and if dry hot weather should set in the crop will be immense. With the present weather every one is swimming with the greatest anxiety. *H. Cannell, Swanley.*

—Potatoes are looking very well in this neighbourhood, both in the cottagers' small patches and in larger breadths. The tubers so far are sound and good, but late. With a rise in the average temperature and dry weather the crop is likely to be a tolerably heavy one. *G. A. Don, Bedgebury Gardens, Hawkhurst.*

SUSSEX.—We grow several novelties each year, weeding out those that do not satisfy us. Midsummer Kidney and Chiswick Favourite are this year our early sorts, but these are not up to our last year's standard, and the crop is fully a fortnight late. This is not surprising, as the last six weeks have been cold and sunless—just the weather to favour the Potato blight, although none as yet has been observed. I learn to-day (July 9) that some cottagers close by have had the disease in the tubers very badly. *H. R. Holmes, Ashburnham Place, Battle.*

—Potatoes are everywhere looking unusually well. Tubers from the open ground are fine; no blight has been observed as yet (July 10), and all garden varieties are looking most promising. As to later crops, it is rather early to know much about them; one thing, we want more heat. Vicar of Laleham, The Dean, White Elephant, Queen of the Valley, Beauty of Hebron, Prizetaker, Reading Russet, are all looking splendidly, and, to judge from their tops, I shall get a good crop, if the blight keeps off. All other kinds of root crops are looking well, as also Peas and other vegetables. This will prove to be one of the best seasons we have had for some time for all kinds of vegetables. *S. Ford, Leonardslee, Horsham.*

HANTS.—Potatoes are irregular in yield and the quality poor, the tubers being very soapy. The Midsummer Kidney is the best so far; even Myatt's Prolific this season is bad. Late varieties promise well. *E. Molyneux, Swanmore Park, Bishop's Waltham.*

HANTS.—The Potato crops were never better, and at present (July 18) there is no appearance of the murrain. All are late, by reason of the extraordinary cold and wet state of the weather. The first to be ready for use was Sutton's or Fenn's Early Regent—the best flavoured and heaviest cropping early Potato in commerce. It is much superior to the several types of Ashleaf, and that much over-rated but popular market variety, Beauty of Hebron, is not worthy to be mentioned in the same connection. Vegetable crops are generally good. Early spring sown Cabbage, Cauliflower, and Peas I have never known to do so well. French and Runner Beans are late. We shall not gather in the open air till quite the end of the month. *W. Wildsmith, Heckfield Place Gardens, Winchfield.*

WILTS.—The crops of early and late varieties are very promising, and should we now get a spell of fine weather the produce will be plentiful and good; otherwise disease is sure to attack the crop. *H. W. Ward, Longford Castle, Salisbury.*

WESTERN COUNTIES.

CHESHIRE.—The early kinds of Potatoes are of good quality and size, Ashleaf being the best. Sutton's new kinds are looking wonderfully well, including Sutton's Seedling, Best of All, Satisfaction, and Masterpiece, which all turned out last year a fine crop of best quality, and which cooked well.

Many Potatoes are grown in this locality for market, viz., Myatt's Kidney and Sutton's Early Regent for earlies, Imperators and Magnums for late crops. Sutton's new kinds are being planted, but not in sufficient quantities for market purposes. As yet all the Potato crops are looking well, and I have not seen any disease. *J. Atkins, Tutton Gardens, Knutsford.*

STAFFORDSHIRE.—Early Potatoes in this district are rather later than usual, and what we have lifted at present are only a medium crop, and poor in quality owing to so much rain of late. Late ones are looking well so far, and with fine weather we should have good crops. *J. Wallis, Keele Hall Gardens, Newcastle-under-Lyne.*

SALOP.—Potato crops look remarkably promising; but the earlies turn out small in size and are late. Hundreds of tons of old ones are unsold in this district, chiefly of Magnum Bonum—one that is mostly planted hereabouts. Imperator seems to be growing into favour. Personally I prefer the Scotch Champion of all others for flavour, especially when roasted. *A. Kemp, Broadway, Shifnal.*

WORCESTER.—So far nothing better could be wished, for the crop of the early varieties is good, and the tubers well flavoured; the second earlies, such as Sutton's Seedling, Cosmopolitan, and others are very promising. We lifted some of the seedling for trial; they are beautifully white, of excellent size and shape, and, bar disease, will give a heavy yield. Late varieties all look remarkably well in the haulm, notably Sutton's Abundance and Vicar of Laleham. Magnum Bonum and Scotch Champion are grown on the home farm, and look equally promising. *W. Child, Croome Court, Severn Stoke.*

—Potatoes give great promise, but the protracted showery weather, with thunder, makes one fear an attack of disease. Early varieties are turning out excellently; Chancellor is one that ought to be better known for field culture, as it is a heavy cropper, and of the best quality. *W. Crump, Madresfield Court, Malvern.*

HEREFORDSHIRE.—Potato seed selected from prematurely ripened tubers did not come out of the ground evenly, but most of them have started, and the haulm at present looks well. I have noticed a little curl in gardens, but as yet—although the absence of sun and the low temperature have been favourable to the development of fungoid growth—I have not detected disease. I do not grow many sorts, but confine myself to those which do well upon our soil, eat and keep well throughout the season. We start with Mona's Pride, Veitch's and Myatt's Ashleaf, follow on with Covent Garden Market and Lady Paget—two grand second earlies, which keep good until May in the succeeding year, do not show their eyes, consequently are free from a particle of waste—no trifling matter in a gentleman's kitchen. My main crop varieties in the field are Magnum Bonum, Reading Hero, Reading Russet, Carter's Cosmopolitan, Lapstone, and Imperator. These varieties look well, and, having covered the ridges, a change to dry weather after these fine rains should result in heavy crops of tubers. *W. Coleman, Eastnor Castle Gardens, Ledbury.*

—Potato crops, of both early and late varieties, are looking remarkably well. The early varieties, owing to the cold spring, were a long time coming through the ground, and when through they had the drought to contend against through the month of May, but after the rains came they quickly made up for lost time. We are now digging the Early Hammersmith variety, the yield of which is fairly good, the tubers well grown, of fair size, and nice and firm when cooked. *A. Ward, Stoke Edith Park.*

GLOUCESTERSHIRE.—Potatoes of early varieties are digging and the late ones are looking well. Persons who were not careful to select good matured seed have bare places in their Potato rows. I have not heard one instance where the haulm was damaged by the spring frosts, and there is a possibility of late ones being dug earlier this season. Beauty of Hebron is the one we rely upon to come in before the late

crops, and Scotch Champion for field culture. *A. Chapman, Weston Birt, Gloucester.*

MONMOUTH.—Potatoes of the Ashleaf type, although later than usual, have nevertheless produced a prolific crop, the tubers being both numerous and large, and the flavour is good notwithstanding the wet and cold character of the season. Veitch's Ashleaf is a valuable variety, and we grow many of it. Second earlies and late varieties look well, their haulm being robust and foliage well developed. Field crops generally look promising, except those planted upon very tenacious soil. I have failed to find any trace of disease, but hear that it has been observed in this district. *T. Coomber, The Hendre.*

SOUTH-WESTERN COUNTIES.

SOMERSET.—Potatoes started evenly and strongly, but are now developing far too much haulm. The Ashleaf and other early English varieties have been plentiful and good in quality, but the American introductions are very inferior, especially as regards quality. Disease is also prevalent among the latter, and some of the early English varieties are slightly affected with it, and already the chances of an extra heavy crop is marred. *W. Iggulden, Marston House Gardens, Frome.*

—The Potatoes are looking wonderfully well throughout the county of Somerset, but there is rather too much haulm for a good crop to be general or likely, and the disease has appeared in some places. *W. Hallett, Cossington House, Bridgewater.*

DEVONSHIRE.—Potatoes are very fine, and excellent in flavour; these remarks refer to all early kinds grown here and in the district, and, judging from appearances, the later kinds will be very fine and plentiful. To-day I saw indications of disease in a small garden near the river. *G. Baker, Membland, Plympton.*

—Potatoes have, up to this date, in their tops shown unusual vigour, but fears may well be felt for their ultimate success, by reason of the excessive rainfall and low temperature, heavy fogs, &c., which have marked the past three or four weeks. Spots of the disease are showing daily in the leaves and stems of the plants, which will undoubtedly increase rapidly unless dry, sunny weather comes very soon. *James Easton, Wear House, near Exeter.*

—Potatoes have all done remarkably well. Disease made its appearance in the tubers of Beauty of Hebron quite a fortnight ago. Sutton's Magnum Bonum still retains its reputation as being the best late Potato, and free from disease. *D. C. Powell, Powderham Castle, Kenton, Exeter.*

CORNWALL.—Both early and late varieties have grown very strongly. Traces of disease appeared in the first few days of July. Such sorts as Early Rose, Beauty of Hebron, &c., have now fully half of the foliage destroyed. I have found many diseased tubers among those we are lifting for use. None are yet fit for storing. *J. Murton, Pencalinnick, Truro.*

WALES.

PEMBERSHIRE.—The early varieties of Potatoes are a good crop, but much later than usual; the second earlies are a very heavy crop, and the late crops look very promising, although I have to report the disease having appeared here about the 5th ult. It had very severely attacked a bed of Ashleaves in a warm part of the garden. *G. Griffin, Slebeck Park, Haverfordwest.*

DENBIGHSHIRE.—All varieties look healthy and strong. The early one is a good crop, but rather late. Late crops give excellent promise, and hitherto there is no sign of disease. Early Rose and Sharp's Victor yield heavy crops; Ashleaf varieties fair, and of fair quality. The Potato crop in fields over North Wales looks a healthy, regular, and even crop. The late rains, foggy, and warm sultry atmosphere will now try the stamina of the Potato to resist the disease. *P. Middleton, Wynnstay Gardens, Ruabon.*

—Earlies are a fair average crop, and of fair quality; they were rather later than usual, owing to the long continued cold weather during the months

of May and June. Late crops in fields and gardens have a promising look, and if the disease should not appear there will be a full crop. *J. Loudon, The Quinta Chirk.*

IRELAND.

ARMAGH.—The Potato crop is looking remarkably well about here, with no disease apparent at present. Wet weather. *T. Sheasby, Castle Dillon.*

KILKENNY.—Early varieties are turning out a good crop, but owing to the incessant rains and want of sunshine, they are rather deficient in quality. Later sorts in fields are looking well, but want fine weather to mature the tubers. No signs of disease in the crop in this district up to the present. *W. Gray, Woodstock, Inistioge.*

DOWN.—Early Potatoes are turning out a good crop of fair quality; late varieties are now in full growth, and are looking well. No disease up to the present time. *J. Taylor, Mount Stewart.*

CHANNEL ISLANDS.

SCILLY.—The early Potato crops were very late this season; digging in the open did not begin till the middle of May, by reason of the long prevalence of bitter cold east winds. Large quantities are grown on the island for the early markets, mostly Myatt's Ashleaf. The crop was, however, fairly good, and average prices realised. The crop of late kinds for winter use so far has looked very promising, but this week the disease is spreading fast. *G. D. Vallance, Trescow Abbey, Scilly.*

JERSEY.—Potatoes, as all know, are largely grown in these islands for the English markets. Last year it was a very paying business; the present season has quite reversed the order of things, and we question whether the crop will leave any balance at all. Two or three facts explain the whole position:—1st, unusual lateness of spring and early summer; 2nd, large quantities of old Potatoes being still held in England; 3rd, increased number of sources from which early supplies are now put on the English markets. In a general way it may be said the palmy days for Potato culture are past for these islands. Early crops have been good yields, and the late varieties are promising very well indeed. *Chas. Smith & Son, Caledonia Nursery, St. Heliers.*

—There is an abundant crop of Potatoes this season; the haulm, owing to the continuous rain, is strong, and the tubers large; the prices are low and unremunerative. *W. B. Saunders, St. Saviours.*

THE SUPPLEMENT.

Our supplementary illustrations this week represent two very dissimilar plants, but equally worthy the attention of the amateur who has the means of growing them

RHODODENDRON ARGENTUM.

(for a photograph of which we are indebted to Mr. R. T. Newall, of Ferndene, Gateshead) is one of the many noble trees for which our gardens are indebted to Sir Joseph Hooker's memorable journey in Sikkim. The leaves are often a foot long, with their under surface of a silvery-white hue, so that even when out of flower the tree is very attractive. The flowers are white with a rich purple spot at the base.

DAHLIA IMPERIALIS

is one of those impracticable subjects which requires a house as big as the Palm stove at Kew to do justice to its merits. We remember on one occasion to have seen the difficulty as to space got over by laying the plant down when in bloom nearly parallel with the floor of the house; Consul Crawford of Oporto, being a resident in a warm-temperate, or almost subtropical climate, is able to adopt a better way, and the illustration we give (and for the opportunity of preparing which we are indebted to him) shows the success of his procedure.

Dahlia imperialis grows naturally in Mexico,

where it was found by Roezl, and first made known in the *Gartenflora* for 1863, then edited by our eminent friend, Dr. von Regel. The plant attains a height of 12–14 feet, and bears panicles of drooping, bell-shaped flowers, of a white or pale lilac colour. One of Mr. Bateman's sparkling "lecturesses" at the Royal Horticultural Society in 1870 was devoted to this plant, and to this zealous horticulturist and fluent exponent we are indebted for the introduction of this plant into this country. Mr. Bateman procured some tubers in the South of France, and bestowed them on the Royal Horticultural Society, so that Chiswick had the honour of being the first establishment (as we believe) in which this fine plant expanded its blooms in this country.

THE APIARY.

THE season may practically be said to be at end generally, and a disastrous end it is. A late, cold spring, followed by a wet and cold summer, is disheartening to the last degree, and though accustomed, as a rule, to look on the bright side of things, we cannot do so this year. Most hives, if not all, will most likely have to be fed up to weight for winter. About here hives are pretty full of bees, but of honey there is none. Many hives have already killed their drones, and some are even now casting out worker brood. Every bee-keeper knows what that means, and many have already begun to feed.

The only thing that remains is to hope that 1889 will be better than 1888. It is not too late to make artificial swarms while drones are about, but it had better be done very soon. As hives are mostly pretty well off for bees this can easily be done, but feeding must then be the order of the day to build the stocks up for another year.

Bees from Port Mahon, Minorca, have at last been successfully introduced into the apiary of Mr. Abbott, at Southall. Attempts have been made before, but have failed sometimes from postal regulations and sometimes from other causes. Sometimes the boxes have been opened by the postal authorities to see the contents, and when found to contain live bees have been hastily closed and the queen jammed to death. Mr. Andrew has sent these bees to many bee-keepers as a present. He promised us one, and no doubt we shall receive it in due course. These bees are said to be hardy, gentle, and prolific—good qualities, as every one will allow. To show how bee-keeping seems to be taking possession of the mind of the whole world, Spain (which cannot be called foremost in modern science) has issued a monthly periodical on bees called *Revista Apicola*, and Mr. Cowan's book has also been translated into the Spanish language. This work has been translated into nearly every European language, and the interchange of ideas thus circulated must soon make bee-keeping a prodigious industry. *Bee.*

FORESTRY IN GUIANA.

WHITE CEDAR.—Those who have been much on the savannah aback of sugar estates are acquainted with the tree locally called White Cedar, belonging to the botanical order Bignoniaceae and the genus *Tabebuia*. It is found scattered here and there over the less wet parts of the savannah, and wherever a copse of woodland is found on drier ground it is more or less prevalent; and in the forests on the banks of the rivers that intersect the same region it is plentiful. The largest trees attain a height of 50 to 70 feet, and the trunk measures from 15 to 18 or 21 inches. The wood is more easily worked than is deal, and is serviceable for all kinds of indoor work in building. It is also useful as a furniture wood, and where lightness of material is required might be largely used. The grain is free, and it takes an excellent polish. Inquiries have been made for the timber for export, to be employed as match wood, for which purpose its lightness and free grain particularly adapt it. Resi-

dents on the rivers who use it in house building and for other purposes, and who are well acquainted with its qualities and merits, say that for use in building one of the principal of its recommendations is that it is never attacked by wood ants. If this be really so, it is a very great merit indeed, in a country like this where termites so much abound, and are so destructive to wood. The leaves are simple, about a span long, the flowers white, of the size and form of the *Bignonia* so common on fences and trees about Georgetown, and they are succeeded by finger-shaped pods that are densely full of flaky membrane-winged seeds. From specimens gathered by the writer a few months ago at Hoorebea it has been figured in Hooker's *Icones Plantarum*, vol. viii., part 2, pl. 1738, and named by Mr. Baker *Tabebuia longipes*, proving another of the many instances of very common plants that have awaited this late day to be scientifically made known. There are several species of *Tabebuia* in Guiana. Schomburgk, in the list in his "Reise in British Guiana," gives six:—*T. fluviatilis*, DC.; *T. latifolia*, DC.; *T. macrophylla*, Kl.; *T. ovata*, Kl.; *T. rufinervis*, DC.; and *T. triphylla*, DC., all of which are represented by specimens in the Kew Herbarium, where also is another under the name of *T. toxophora*. Among the plants gathered by Mr. Im Thurn at Roraima was a new species, with three-foliate leaves and large white flowers, apparently of shrubby habit. This is named *T. roraimae*, Oliv., and is figured in the *Transactions of the Linnean Society*, series 2, Bot., vol. ii., pl. 45. A plant that I gathered on the Kaieteur savannah (Nos. 830 and 1064) has obtuse-rounded leaves and fewer flowers than the White Cedar—features probably thus modified from the normal state of the latter by the poverty of the bare sandy savannah where it grows. *T. fluviatilis*, DC., is a five-foliate species, with clusters of white flowers, which grows in the form of a spreading bush, with its branches floating; it is very common on the banks of the rivers. This and the white Cedar I have introduced to Georgetown, where both are easily cultivated. *Demerara Argosy.*

PLANTS AND THEIR CULTURE.

SOUTH AFRICAN AND OTHER BULBOUS PLANTS.—Considering the large number of this section of beautiful subjects, it is surprising how few are to be found in gardens, and, what is more, these are usually anything but representative of the genera. Probably the lack of success in growing the plants arises from treating them with other plants in a mixed collection. Most of the species possess but a small spread of foliage, and are therefore easily robbed of their proper share of light and air by their stronger growing neighbours; and unless special care be taken to guard against this evil, immature growths result, with the natural concomitant, lesser sized roots. It will, therefore, be seen that these bulbous plants should have either a special house or place to themselves. Select a position which affords abundance of light and air, both being conditions of first importance; indeed, even when in a resting state they are benefited by having a moderate supply, but in the growing season it is indispensable to the proper perfecting of their growth. Unripened growths not only fail in flowering well, but are more susceptible to disease, but sometimes the latter condition is brought about by attempting to get two seasons' growth in one year—or, rather, by keeping them more or less excited all the year through; this practice, unless great care is exercised, soon results in a debilitated condition, from which it is difficult to restore them. They have a period of growth, during which they should receive every encouragement until it is completed, and avoiding that kind of ripening which is brought about by suddenly withholding water; as, although the required quantity will gradually become less, yet the supply should always be sufficient to prevent flagging and ripening prematurely, which would prevent much of the elaborated matter of the leaves from being transferred to the storage cells of the roots. Although many of these South African and Australian bulbs have been for years in this country yet they do not readily adapt themselves to our seasons of growth; indeed, it is a matter of common knowledge that our autumn is concurrent with the spring-time of their native homes, and it is surprising

how pertinaciously these bulbous plants keep to their original seasons. Of course I do not mean to say that they cannot be forced out of their natural season, but if it is done it requires a considerable amount of skill and care to do it successfully. But even then, if the forcing is discontinued, they soon return to the normal time of starting, which is about August and September, consequently the present time would be most fitting to give the stock a general overhaul; besides, fresh importations of bulbs are now arriving, and could be conveniently incorporated with the collection.

In examining the collection, if the drainage is good and the bulbs not overcrowded, they need not necessarily be completely shaken out—merely remove the loose and inert soil from the pots, and top-dress with some light rich fibry loam to which has been added a mild and pulverised manure, or a pinch of some prepared fertiliser may be put on the surface of the old soil, and covered with the new soil. If the loam employed be inclined to be heavy some fibrous peat would be beneficial. In potting use rather deep pots, but not larger than would be fairly well filled with roots. If the pots are too large the soil is apt to get water-logged and soured—conditions very unfavourable to the welfare of any plants. The pots should be stood on or plunged in some moisture-holding material, and no more water given than is actually necessary to keep the soil in a moderately moist condition until the plants are fairly under weigh, and the pots well filled with roots. Most of these bulbs require the temperature of a greenhouse—some more so than others, such as those from the latitude of Natal; while those from the Cape do best in cold frames, viz., *Babianias*, *Ixias*, *Sparaxis*, *Anomathecas*, *Trichonemas*, *Ornithogalum thyrsoides*, the Australian *Calostemmas*, and such-like, may be instanced. Then there is a set which, while growing well in a cool temperature, yet like more head-room, of which section are *Watsonias*, *Antholyzas*, *Moraeas*, *Gla-diolus*, and *Albucas*. For the first group, 6-inch pots should be the maximum size used, but in the second group double that size may be used with advantage, provided there are plenty of bulbs to well fill the pots.

There is yet another group, which comprises the more strictly speaking greenhouse bulbs requiring something near to our summer temperature all the year round. And it is in this group that the most striking and beautiful subjects are found, whether it be the huge elephantine leaves and brilliant flowers of the *Hæmanthus*, or the dwarf prettily marked foliage and flower-spikes of the genus *Lachenalia*—the tall inflorescence that arises from the great bulbs of such as *Brunsvigia Josephineæ*—the curious brush-like scape from the *Eucomis*, the showy flowering *Nerines*, as seen in *Nerine (Fothergilli) curvifolia* and *sarniensis*, the "Guernsey Lily," the elegant genus *Cyrtanthus*, and the terrestrial *Orchids*, *Lissochilus*, with their stately flower-spikes, are all distinct enough to be included in any one collection. A mild airy temperature, from 50° to 60°, during the winter and growing season, should be maintained. In summer, when they are at rest, with full exposure to the sun, protecting the bulbs from heavy rains, they may be stood out-of-doors until the nights become too cool for them, or they show signs of again starting into growth. *F. Ross, Pendell Court.*

THE FLOWER GARDEN.

HARDY wall plants and climbers require close attention now, and ought to be looked over once a week at least. In training the plants avoid overcrowding, and cut out all weak and spindly growths as well as dead flowers, and in doing so keep a sharp look-out for insects and mildew. Examine such plants as were planted last autumn, and see that they do not suffer from dryness at the roots, for notwithstanding all the rain we have had recently it is quite possible for plants in certain positions to need watering by hand, and on that point it is as well not to be deluded by the state of the weather at any time between now and the end of the growing season.

Mixed beds and borders of hardy perennials have been particularly interesting and attractive this summer, as, in spite of the unpropitious weather experienced, their flowering has been profuse. Unremitting attention is required just now to keep them in good order. Where seed is not wanted the flower-stems should be cut off from the plants as soon as the blooming is over, but do not treat all things alike by cutting

the stems off at the base or within 2 or 3 inches of the ground. To adopt that practice with some species is tantamount to taking half the plant's life away, and giving it an unsightly appearance for the remainder of the season. For instance double flowered *Pvethrums* ought not to be cut nearer to their crowns than from 12 to 15 inches, for the radical leaves are so few that it is only the stem leaves that give the plants anything like a presentable look till they die down in the autumn; not only that, but when the stems are cut close to the ground, it is impossible for the crowns to get properly matured for the succeeding year. *Delphiniums* may be left 2 feet long, *Aquilegias* and other plants that produce an abundance of radical or bottom leaves should have the stems cut down to the same level as the leaves. Attend to late flowering species such as the *Michaelmas Daisies*, *Chrysanthemum lacustre*, *Pvethrum uliginosum*, *Solidago canadense*, &c., which should be kept securely tied to stout stakes to prevent damage in windy weather and from thunderstorms. Keep the borders free from weeds, and do not trample on the soil in its present state any more than is absolutely necessary.

Dahlias should have the leaders tied to their supports as fast as growth is made, and at the same time cut out any weak and spindly shoots that may be growing out near the base of the plants. From this time onwards earwigs will be a great pest among these; a good method of trapping them is by placing at intervals beanstalks cut into 6-inch lengths and placed among the branches; these should be examined every morning. Small flower-pots with a little dry moss or hay inside, and placed on the top of the stakes, may also be used.

Pinks.—Cuttings of these that were put in pots and placed in a little peat as recommended last month are now rooted, and should be transferred to cold frames to harden off preparatory to planting out in beds at a later period. It is not yet too late to put in cuttings, but their propagation, if a stock of young plants is desired, ought not to be further delayed, and they should have the benefit of a mild bottom-heat. *J. Horsfield, Heytesbury.*

THE HARDY FRUIT GARDEN.

WALL TREES.—All Pear, Plum and Cherry trees once more demand attention in the way of stopping and training of the shoots. The recent wet, unless weather has caused the trees to make a quantity of weak, sappy growth without any of the young wood becoming ripened, therefore leave no more young wood than is absolutely required, spurring back the breastwood and giving the shoots that are retained, and also the buds on the fruiting spurs, every chance of becoming properly matured, by admitting plenty of light and air. Tack or tie in the young shoots. The young growths on Morello Cherries require tacking in, after which—if not already done—they should be netted to protect the fruit from the birds. Apricots will also want looking over and pinching in. With us the trees have lost but few branches this season by suddenly dying off, the Moor Park being a notable example, because it is a notorious fact that that variety is always the worst to do so.

General Work.—As soon as the nets can be removed from the Strawberry beds they may be transferred to the Currant and Gooseberry bushes, to protect the fruit which is required for late use. If they are not wanted they should be well dried and stored away. Before putting the nets over the bushes hand-weed the ground under and between them, for it is useless to attempt to hoe unless the weather changes. Old Strawberry plants which have done bearing, and which are not considered worth retaining, should be grubbed up, and the ground cleared. The same site may be manured, dug, and planted again if desired, but it is always better to have a change of ground. As the layered runners are now ready for setting out, preparations should at once be made, and the ground manured, dug, and allowed a few days in which to settle before the planting is done.

In selecting a site for Strawberries, it is always best to choose a piece of ground where the soil is of rather a heavy nature, but not too wet; but if such cannot be had, and the soil is of a light nature, the same can be made much more adapted for the purpose by applying a heavy dressing of good sound loam, which should be dug in, and well incorporated with the soil. For light soils a dressing of loam is far preferable to the application of large quantities

of manure. Soils of rather a heavy nature should be liberally, but not too heavily, manured, and even then a light dressing of loam is beneficial, especially if the staple soil is of rather a scanty nature.

Look over autumn fruiting Raspberries, and keep the canes tied to the wires, removing all suckers as soon as they appear above the ground. This latter detail must be well attended to, as the suckers rot the fruiting-caness.

The summer fruiting varieties should have the old canes cut away as soon as the fruit is gathered; and if not already done, the young canes should be reduced in number, leaving about eight or ten, which can again be thinned to the requisite number next spring. *A. Ward, Stoke Edith Gardens, Hereford.*

THE KITCHEN GARDEN.

SPINACH.—A good-sized plot of this should now be sown for the winter supply; the prickly variety is the best for this purpose: it prefers a light warm soil in the winter, and a south border or similarly sheltered position should be given to it if possible, as a much heavier yield may be got by this means. If the soil is heavy and cold a good dressing of leaf-soil or charred refuse should be forked in previous to the sowing: it is best thinly sown in rows 18 inches apart, the young plants to be afterwards thinned to 4 inches apart.

Carrots.—A small bed of the Shorthorn varieties may now be sown on a warm border for use early in the spring before the forced ones are ready; the soil for these should be rather firm, or they will be drawn out by the frost in the winter; a good dressing of half-rotten leaf-mould between the rows about the middle of October will be of assistance in preventing this.

Tripoli Onions.—These generally succeed best if sown in beds in the autumn and transplanted to their summer quarters early in the spring; a good position and rather light soil should be given them now. The red-skinned varieties are the best in constitution, and are not so liable as the white kinds to be attacked by blight in the spring. In very cold and wet districts, where it is a difficult matter to get the White Spanish and similar varieties harvested by spring sowing, it is advisable to sow them in the autumn instead; they are equally as hardy as the Tripoli varieties, and are by this means ready to harvest several weeks sooner than if sown in the spring.

Earthing Celery.—This is best done in three times at intervals of a fortnight, and when the plants are perfectly dry. The main crop should soon be ready for the first earthing; all small leaves and shoots should first be pulled away, and the tops drawn lightly together with a piece of matting just under the green leaves; this must not be tied low enough or in any position that will cripple the growth of the young heart of the plant, as it should remain on until after the second earthing. If worms and slugs are likely to be troublesome a good dressing of lime should be given before any soil is placed around the stems. If any more water or liquid manure is likely to be required it should be given a day or two before commencing to earth. If any heads are required for show it is well to wrap them round with brown paper before any soil is heaped against them. As a further preventive against discoloration by insects, &c., care must be used not to earth too deeply the first time; the young leaves should be able to continue their growth freely, the soil should be broken up small with the spade and pressed around the stems, the great point to aim at in order to have it well blanched and of good flavour being to exclude the air from the stems as much as possible, and this applies more especially to the later earthings. *W. H. Divers, Ketton Hall, Stamford.*

TRADE NOTICES.

MESSRS. W. & J. BROWN, nurserymen, &c., Stamford, have purchased Mr. J. House's Eastgate Nursery, Peterborough, for £2000.

Mr. Robertson Munro, of the Abercorn Nurseries, Edinburgh, has taken into partnership Mr. R. B. Ferguson, late manager to the Lawson Seed and Nursery Company, and the business will now be carried on under the style and title of Munro & Ferguson.

Advertisers are specially requested to note, that, under no circumstances whatever, can any particular position in the paper be guaranteed for advertisements occupying less space than an entire column.

Now ready, in cloth, 11s. 6d.

THE GARDENERS' CHRONICLE,
Vol. III., Third Series, JAN. to JUNE, 1888.
W. RICHARDS, 41, Wellington Street, Strand, W.C.

APPOINTMENTS FOR THE ENSUING WEEK.

MEETINGS.

MONDAY,	Aug. 13—Ghent Chambre Syndicale.
TUESDAY,	Aug. 14 { Royal Horticultural Society; Fruit and Floral Committees.

SHOWS.

TUESDAY,	Aug. 14—Claycross.
WEDNESDAY,	Aug. 15—Reading and St. Albans.
THURSDAY,	Aug. 16 { Maidenhead, Ludlow, Aberdare, and Abingdon.
FRIDAY,	Aug. 17 { Devon and Exeter, and Chesham (two days).
SATURDAY,	Aug. 18 { National Co-operative, at the Crystal Palace. National Carnation and Picotee (Northern Section), at Manchester.

SALES.

MONDAY,	Aug. 13 { Trade Sale of Dutch Bulbs, at Protheroe & Morris' Rooms.
TUESDAY,	Aug. 14 { Imported and Established Orchids, at Protheroe & Morris' Rooms.
THURSDAY,	Aug. 16 { Trade Sale of Dutch Bulbs, at Protheroe & Morris' Rooms.
FRIDAY,	Aug. 17 { Second Portion of the Collection of Orchids formed by F. A. Philbrick, Esq., Q.C., at Protheroe & Morris' Rooms.
SATURDAY,	Aug. 18 { Trade Sale of Dutch Bulbs, at Protheroe & Morris' Rooms.

WE greatly fear that the weather of the last week will falsify much of the bright prospect that otherwise might have been indulged in from a perusal of our reports on the Potato crop. The dreaded disease, having been dormant for the last few years, bids fair to reassert itself this autumn with considerable severity. Should it be so, though it may seem hard to say so, we shall have in large measure ourselves to blame for it. Time was when we knew nothing for certain about the nature of the disease, and could only bemoan the results. At this period of profound ignorance theories innumerable were framed by those least competent to do so, and what was singular, by those usually most contemptuous of theories, and most addicted to proclaim the superior virtue of a peck of facts over a ton of theory. Times are changed. We do know now a great deal about the cause and nature of the disease—by no means all we should like to know—but at any rate we do not hear much now of wild theories, and cultivators have learned to accept as true what the microscopists have taught them,—that the disease is really due to the destructive action of a parasitic fungus. Some points in the life-history of the fungus are still matters of dispute, others are wholly unknown; but in any case we know enough to see that far greater good may be anticipated from measures of prevention than from any directly curative agency. Our reports show that the early varieties had up to the date of report almost entirely escaped. That is one hint, but we cannot grow all early Potatoes, and we shall have to wait some time before a truly resistant late variety is raised. We do not say it cannot be done, on the contrary we believe it can be accomplished, and that just as some Roses or some varieties of Peaches are far more seriously affected

with mildew than others, so certain Potatoes are much more subject to the disease than others—or rather, we should say, that where all are liable some suffer much more severely than others. It is for our cultivators carefully to note and record these facts—facts which the SUTTONS and CARTERS and other experimenters will to a certainty avail themselves of even more fully than they have hitherto done. Then, again, the present season gives an opportunity of testing the efficacy of the high moulding system advocated by JENSEN as a preventative. For two or three years a sub-committee of the Scientific Committee of the Royal Horticultural Society made elaborate experiments, and some of the members drew up still more elaborate reports on the experiments made at Chiswick. We do not say those reports were valueless, but at any rate they failed in their object—just because the fungus, though always present, did not spread much in those years. Moreover, as carried out, the cost of the protection would far have outweighed any advantage that might have been attained. Ample preparations were made for a state of siege; *sorties* were devised, and every preparation made to repel the invader, but the scouts had nothing to do, and the defenders had their labour for nothing. Prolonged experiments of this kind, undertaken by observers with no personal interests of their own to serve, could not be expected to be continued; the wonder is they went on so long; but the Royal Horticultural Society has always managed to secure somehow or other a willing band of assistants to do work for which other people would have to pay, and pay handsomely. At any rate, the sub-committee ceased their labours, and now the enemy so long waited for, and hopefully from one point of view, has put in an appearance. It is too late this season, even if it were otherwise possible, to repeat the elaborate precautions heretofore adopted at Chiswick, but a trial of the Jensenian plan on a small scale might be attempted without difficulty, and might still lead to valuable results, as although the haulms might be affected, the high moulding and bending the haulm might still preserve the tuber more or less.

Apart altogether from these measures, cultivators might accomplish much by doing their best to destroy affected haulm and tubers. We know that as a rule they do nothing of the kind—the haulm lies about in the fields, or finds its way to the manure heap to propagate the fungus in about the most favourable conditions possible; fowls and pigs eat the diseased tubers; growers send their produce to market with diseased haulm as packing at the top of the barrels, and consequently scatter the spores broadcast. People who do these things without an effort to prevent them, deserve to be considered enemies of the human race.

What may not be practicable on a large scale is easily effected on a small one; gardeners, and still more cottagers with small patches, should destroy affected haulm and tubers immediately, and not allow them to remain on the ground between other and healthy rows, day after day, as they do. They could not hope by such means to stamp out the disease entirely, but they would gain time, and save many a bushel which would otherwise be destroyed.

The application of sulphate of copper mixed with lime to the haulm and foliage in fine powder with a distributor would also be of service, but probably the cost would outweigh the advantage, if tried on a large scale. But whether or no, to allow the disease to spread, or rather to spread it ourselves, as we do, without making any effort to stay it, is a crime for which not only those

most responsible, but a still larger number of innocent victims have to suffer. Lastly, we may refer our readers to the account given of the Jensen plan in our columns on April 5, 1884.

NATIONAL CONFERENCE ON APPLES AND PEARS.—We have received the following for publication:—

"In consequence of the great success of the Apple Congress in 1883, and the Pear Conference in 1885, and in order to bring up the reports then published to the present date, the Council of the Royal Horticultural Society has decided to hold another Conference on Apples and Pears in the gardens at Chiswick, from October 16 to 20 next.

"In the present Conference it is proposed to invite the exhibition of such varieties only as find favour, or may be considered thoroughly worthy of cultivation.

"One object of this Conference is to illustrate by facts and examples the present state and future prospects of commercial fruit culture in this country. It is consequently desired that contributors should endeavour as far as possible to furnish samples of fruits that are in favour in the markets of their several localities.

"All fruit growers are invited to exhibit, and the more widely the collections are procured (within the limits of the schedule), the greater the interest the exhibition will create.

"It is very desirable that every collection should be accompanied with as much information as possible with regard to soil, exposure, and physical condition of the districts in which they have been grown; for which purpose the accompanying forms are enclosed.

"All fruits exhibited should be distinctly labelled with the name or names under which they may be known, and as the specimens sent are strictly for examination, they must necessarily be at the disposal of the committee if required.

"Persons willing to contribute papers bearing upon the subjects in hand are requested to communicate with Mr. BARRON at an early date, stating the particular subject they are prepared to treat of. Arrangements for reading or publishing papers will be made by the committee.

"All packages should be addressed to Mr. A. F. BARRON, Royal Horticultural Gardens, Chiswick, and must be delivered on or before Monday, October 15. Exhibitors staging their own fruit may do so on the 15th, or on the morning of the 16th, to be ready for the inspection of the committee. Notice of intention to exhibit must be given to Mr. BARRON not later than Wednesday, October 10, stating the class or classes in which it is intended to exhibit, or the amount of space that will be required.

"All exhibitors will be admitted to the Gardens, free; and will receive a certain number of tickets according to the extent of their exhibits.

"It is recommended that heavy packages be sent by goods train.

"APPLES.

"Not more than five large or nine small fruits to form a dish.

"1. Fifty varieties of Apples most worthy of cultivation.

"2. Twenty-four varieties of Apples best adapted to the exhibitor's district.

"3. Twelve varieties of Apples, do.

"4. Six varieties of Apples, do.

"5. Twelve varieties of dessert Apples.

"6. Twelve varieties of culinary Apples.

"7. Six varieties of dessert Apples.

"8. Six varieties of culinary Apples.

"9. Apples from cordon, bush, or pyramid trees (not to exceed twelve varieties).

"10. Apples from standards in orchards (not to exceed twelve varieties).

"11. Apples (not exceeding twelve varieties) grown on special stocks, of which particulars must be given.

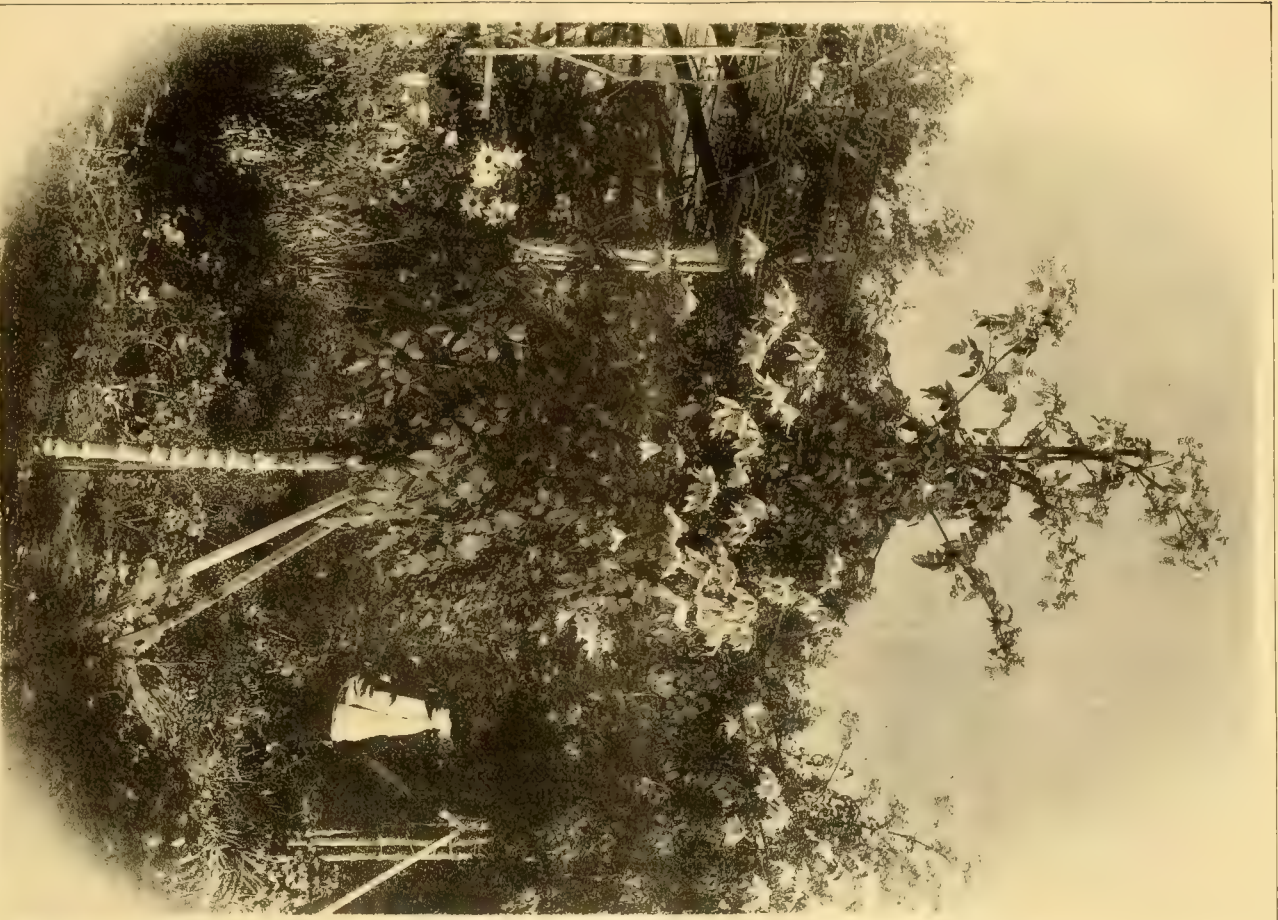
"12. Apples as grown and sent to market, one peck of each (not to exceed twelve varieties).

"13. New, recently introduced, or little known varieties of merit.

PEARS.

"Not more than five large or nine small fruits to form a dish.

"1. Thirty-six varieties of Pears most worthy of cultivation.



DAHLIA IMPERIALIS.

FROM THE GARDEN OF ROBERT J. LAWRENCE, CHURCH



RHODODENDRUM ARGENTUM.

FROM THE GARDEN OF W. NEWELL

THE PHOTOGRAPH BY J. W. B. & SONS, NEW YORK, N.Y.

- "2. Twenty-four varieties of Pears best adapted to the exhibitor's district.
 "3. Twelve varieties of dessert Pears, do.
 "4. Six varieties of dessert Pears, do.
 "5. Three to six varieties of culinary Pears.
 "6. Pears from trees on walls (not to exceed eighteen varieties) stocks to be specified.
 "7. Pears from pyramids, bushes, or open cordons (not to exceed eighteen varieties) stocks to be specified.
 "8. Pears from standard trees (not to exceed six varieties).
 "9. Pears as grown and sent to market, 1 peck of each (not to exceed six varieties).
 "10. New, recently introduced, or little known varieties of merit.
 "N.B.—Staging must be completed before 12 o'clock on Tuesday, October 16. All fruit must be removed on Saturday evening, October 20, or on Monday, October 22."

THE ROYAL HORTICULTURAL SOCIETY:

TOMATOES AT CHISWICK.—One of the most interesting, and at the same time singularly excellent examples of Tomato culture under glass, may now be seen in the large span-house in Chiswick Gardens, which was formerly devoted to Roses, &c. The plants comprise several hundreds in number, are all planted out, and include but few kinds, large blocks of each being grown to show general character. Not only is the culture, which includes absolute restriction to single stems, of the best, but the fruit production is truly marvellous; indeed, better examples of culture and fruiting have never been seen. The plants range from 4 feet to 8 feet in height, the taller growers chiefly being planted at the sides of the house, to run up the wires beneath the roof. In every case, no matter what the kind, the plants are fruiting literally from the ground, many fruits being already ripe. That some of the bloom, being late, refused to set, is due to the miserable weather we have experienced; but still some kinds, and specially a wonderfully prolific form, Horsford's Prelude, seem to have been unaffected. This variety runs tall, and fruits wonderfully, the fruits are handsome and of medium size, just such as would be most acceptable at table, although not large enough for exhibition. Also tall, and a wonderful cropper, is a distinct variety from Bath. Details of the varieties will be of more value later, but all interested in Tomato culture should see this remarkable show—a display of which the Royal Horticultural Society and its Superintendent may well be proud, for none better can be seen in the kingdom.

DISSOCIATION OF HYBRID CHARACTERS.—

One of the most interesting cases of this kind is that narrated by Mr. NOBLE in another column with reference to the white Jackman Clematis. It is so seldom that a rational explanation can be given of these so-called "freaks of Nature" (as if Nature the orderly, the methodical, ever indulged in caprice!) that such history as Mr. NOBLE is able to give us should be received with acclamation. He tells us that he has received one or two abusive letters, and that one Dutchman refused to pay. What sort of people are these? Why that little bit of authentic history that Mr. NOBLE tells is worth all the money the Dutchman declined to pay—ten times over. So far from being abused, Mr. NOBLE deserves the thanks of the community for a fine introduction, and the warmest thanks of the more appreciative for this solid help to the elucidation of a very obscure point in vegetable physiology.

THE RIVIERA.—We learn from our correspondents that the summer in the South is as exceptional as it is here, everything being about a month behindhand, owing to cool winds and low temperature. In July, near Mentone, the thermometer never once marked 70°, while at Antibes the mean temperature for July was only a little over 20° C. (68° F.), instead of 24° or 25° C. (77° F.).

DAFFODILS.—To show what manuring will do on light soil Mr. JENKINS (COLLINS, GABRIEL & Co.) has just shown us bulbs of the Tenby Daffodil weighing

about a quarter of an ounce, and others from the same original sample increased to 1½ ounce; and parent bulbs of Emperor with four and five offsets weighing collectively 12½ ounces. The bulbs are not merely large but of excellent substance and quality. The bulbs in question are grown in light soil to which a good proportion of dried cow-manure is added.

DELPHINIUMS.—From Mr. C. IRVINE, nurseryman, of Jedburgh, N.B., we have received (as briefly stated last week) some magnificent spikes of seedling Delphiniums, 25 to 26 inches in length, 8 to 9 inches in circumference, and one as much as 12 inches. The individual flowers were densely packed, and each large and of good form, of all shades of blue, from the palest cobalt to the deepest purple, tinged in many cases with a lilac sheen; in others the effect was heightened by the central petals forming a white eye.

ARAUCARIA BRASILIENSIS.—It appears that the tree whose portrait we gave some time since is growing in Jamaica, and not in Barbados, as we had supposed. Our photograph came from the late General MUNRO when he was commanding the troops in the West Indies, and we must have mistaken his statement. The tree in question is well known in Jamaica where it is called the Jerusalem Candlestick. It was planted by WILES, who was botanist on the *Bounty*.

THE "KEI APPLE."—This, the fruit of a Bixaceous shrub named *Aberia caffra*, has ripened in the garden of Mr. HANBURY, La Mortola, Ventimiglia, and to whom we are indebted for the opportunity of seeing it. The fruit is of the size of a small Plum, spherical, downy, and apricot-yellow externally, pulpy within, with numerous ascending but inverted seeds, not unlike those of the Grape, but larger. The perfume is rich and heavy, but gives no indication of the flavour of the yellow pulp, which is as acid as that of a Lemon. The shrub is a native of the eastern districts of the Cape Colony and of Caffraria, where it is often used in the construction of fences, for which its spines render it well adapted. M. NAUDIN tells us that the tree is naturalised in various parts of Provence, but rarely produces fruit, owing to the flowers being unisexual. The late Dr. ANDERSON observed that a bush in the Botanic Gardens, Calcutta, produced ripe fruits, and, what is more remarkable, perfect seeds, although careful search failed to detect any trace of male flowers. The seeds from Mr. HANBURY's plant are perfect, the embryo being erect, embedded in perisperm, with two large flat appressed cotyledons and an inferior radicle. Male plants grow in proximity to the female ones.

THE TUBEROUS BEGONIA.—The proprietors of the *Gardening World* have determined on the issue of a series of manuals on various horticultural subjects. Their first venture is before us in the shape of a handbook on *The Tuberous Begonia: its History and Cultivation*. This is an excellent and appropriate subject for a beginning, and as far as we can tell from a cursory glance, it is well handled. We hope shortly to notice the work at greater length, but in the meantime we have no hesitation in recommending it to our readers. It may be had from the *Gardening World* Office, Catherine Street, Strand.

BOTANY OF SOCOTRA.—Professor BALFOUR's detailed account of the botany of Socotra has been published by the Royal Society of Edinburgh, and forms a bulky quarto of 446 pages and 100 lithographed plates. The preface contains a brief history and proceedings of the expedition, which lasted for forty-eight days only, but which was soon followed up by a second expedition by Dr. REEBECK and Dr. SCHWEINFURTH, and others. The plants collected by Dr. SCHWEINFURTH on this occasion were generously made over to Professor BALFOUR for use in the present work. The introductory chapter contains an account of the geographical and geological features of the island. The

low ground has approximately the same flora as that of the Sahara and Punjab. In the valleys in the higher ground tropical vegetation occurs. The higher altitudes have a strange and peculiar vegetation of arborescent Composites, aromatic *Helichrysums*, and other quaint types. The total number of plants is given at 828, of which 575 are flowering plants, no fewer than 206 being endemic. The most showy plants are *Adenium multiflorum*, *Begonia socotrana*, now well known in gardens, and made already the starting point of various hybrids; *Crinum Balfourii*, *Exacum cœruleum*, &c. A Cucurbitaceous tree, *Dendrosicyos socotrana* is one of the wonders of the island; *Cocculus Balfourii* is also an erect shrub instead of a loose climber, like most of its congeners. *Punica protopunica* is remarkable for having only one row of carpels, and as being the wild representative of the common Pomegranate. The dragon's blood used in varnish making is the produce of *Dracena cinnabari*, nearly allied to *D. draco*. Frankincense and myrrh are also found, while socotrine aloes is yielded by *Aloe Perryi*, a species of *Buxus*. *B. Hildebrandi* may prove important as a source of Boxwood. The whole work is a striking proof of what may be accomplished by well-directed energy and instructed zeal in the course of a few weeks' exploration. The exploration and its record, as here given, are alike creditable to British science and to its representative, Professor BALFOUR.

PENANG.—We have before us Mr. CURTIS' Report on the Forest Department for the year 1887. Among the promising experiments mentioned in it, the culture of Patchouli is one of the most hopeful. An interesting account is given of a visit to the hill-dwelling of the Resident, Sir HUGH LOW, which is placed at a height of 4200 feet, and but for the excessive rainfall would be a delightful residence. The Resident has collected a number of European garden plants, which do fairly well.

TRINIDAD BOTANIC GARDENS.—Mr. HART'S report for 1887 gives a summary of the history and present condition of the garden, its library, and offices. Such a report is specially valuable at home, while the practical details as to the cultivation and preparation of various fibres, food plants, drugs, &c. must be of great importance in the colony itself. The meteorological data also will be of use to home cultivators. The report is in every way creditable to the Superintendent, and affords promise of great future benefit to the colony, as well as to botany and horticulture. In connection with Trinidad we may also mention the publication of a *Bulletin*, of which No. 5 is devoted to Coffee, the report being based upon a treatise of Mr. W. SABONADIÈRE, of Ceylon. Trinidad has the means of producing Coffee equal to that grown in any other part of the world.

PETER LAWSON & SON, LIMITED.—From a report and balance-sheet just to hand we see that the surplus for the year is £1341 17s. 7d., leaving the sum of £3244 8s. 1d. as the total balance, out of which the directors propose paying a dividend of 7½ per cent. free of income-tax, carrying forward the balance (£2631 18s. 1d.) to next year's account.

LITERARY.—A new autumn edition of *Walks in Epping Forest*, by PERCY LINDLEY, describing portions less known to pedestrians, is in preparation. Professor BOULGER has contributed some notes upon the recent extensive tree-felling and "forestry" operations in Epping Forest to the same issue.

PUBLICATIONS RECEIVED.—*The Tuberous Begonia* (*Gardening World* series). Edited by B. WYNNE, F.R.H.S. (London: *Gardening World* Office, 17, Catherine Street, Strand, W.C.)—*The Fodder Grasses of Northern India*. By T. F. DUTHIE, B.A., F.L.S. Also *Illustrations of the Fodder Grasses of the Plains of North-Western India*, Part II. (Rorkee, India, Thomason Civil Engineering College Press.)—*Notes on Forest Management in Germany*. By Sir D. BRANDIS, K.C.I.E., F.R.S. (London: India Office, Whitehall, S.W.)—*A Practical Decimal System for Great Britain and her Colonies*. By R. T. ROADE; 113th thousand. (London: EFFINGHAM WILSON, Royal Exchange, E.C.)—*Notes on the Cultivation of Dutch and Cape Bulbs, &c.* By ANT. ROOZEN & SON. (Haarlem, Holland: ANT. ROOZEN & SON, Oudeveer.)

NOTES FROM EDGE HALL.

A FEW notes on plants now or lately in flower here may be of interest to some readers, especially as the hot dry summer of last year, and the drenching wet of July, have produced some remarkable effects. Himalayan plants do well in a wet summer; dry sunshine and parching winds always distress their flowers so in English gardens that I am accustomed to ask whether the mountain air of Nepal and Sik-kim is not constantly saturated with wet. I take *Mecconopsis Wallichii* and *Cyananthus lobatus* as typical plants of the Himalayan climate. Both are better than ever this year; the flowers of the *Mecconopsis* expand widely and healthily without the usual difficulty caused by the adhesion of the sepals to the petals, and the flowers last well; but the anthers seem to make no pollen; consequently I can never get good seed, and am dependent for plants on the generosity of friends; but all of them now make the same complaint, that no fertile seed is to be had. *Cyananthus lobatus* is an excellent rock plant, and always does well here in suitable places, just out of the direct rays of the sun. This year it has surpassed itself. There is no shyness about it. It keeps its multitude of beautiful blue flowers wide open day and night, whether it rains or not, but in wet weather the calyx fills with water and no seed is ripened. It is increased best by spring cuttings when the shoots are 2 inches long. *Codonopsis ovata*, another Himalayan, has less merit, but if it would show the beautiful interior of its hanging balls, and smell less foxy, it would be more attractive. The luxuriant growth of the *Androsaces* is everywhere attracting attention, especially *A. sarmentosa* which in many spots here presents a square yard of crowded large leafy rosettes. These, if their growth is not soon checked by planting them singly in a pot and getting them dried off by autumn, will all turn brown and be dead before the end of October. *Onosma tauricum* will do the same even sooner, many of my plants being drowned to death already, but the flowering of it has been very fine and abundant until lately.

Heuchera sanguinea is now a well-known plant: its flowers, which last a long time, give quite a new colour to the herbaceous garden. It is also very easily increased by striking the tufts. I doubt whether it will prove very hardy on cold soils if we get a severe winter after such a summer as this, but it is too good a plant to run the chance of losing by not keeping a stock in a frame. I lately saw a statement that it is the only *Heuchera* worth growing, but this is not so, the light feathery plumes of *H. micrantha*, though in quite a different style, are very ornamental, and one or two other kinds deserve a place in a mixed border, if only for their leaves.

The later-flowering *Gentians* are no worse for the wet: *Asclepiadea* and *Septemfida* are as good as usual. The large medicinal *G. lutea*, of which I have many plants raised from seed at least five years ago, has flowered here this year for the first time. Its associations give it interest, but it has little other merit as a garden plant. A new *Gentian*, *G. Weschnikowi*, sent to me in spring by Professor M. Foster, seems easy to cultivate. It is unlike any *Gentian* I have seen before, having flower-stalks of a curious fasciated appearance, carried up to a height of more than a foot by a series of bifurcations, with blue flowers the size of a harebell, the edges deeply and unevenly lobed. *Gentiana purpurea* is also flowering well. *Campanulas* have been and are very fine, the best of the large kinds being *persicifolia*. In nurseries we are offered all kinds of deformities of this beautiful plant, some having nearly flat flowers, or looking as if the bell had been turned inside out; others are in the shape of a cup and saucer; but the normal form, with the large handsome bell, is the best. Seedlings of this plant, which come up all over the garden, and are easily recognised, should be allowed to flower, as they present great variety of colour, from deep blue to pure white, some of the intermediate shades of lavender

being amongst the best. I should advise the same with seedlings of *C. turbinata*, though these rarely follow the habit of the parent, and degenerate towards the coarse growth of *C. carpatica*, but occasionally a plant of very good habit may be obtained in this way. I have by it a very dwarf plant with pure white flowers, not as large as those of *turbinata*, but very good for all that. I have tried to improve this plant by raising seedlings, but out of three crops not one plant has been worth keeping. Of yellow *Composites* *Coreopsis lanceolata* is perhaps the best, and no other *Coreopsis* out of six I have tried is worth growing in this soil, for I have given them a fair trial, except *C. grandiflora*, which I do not think is in cultivation in England; I always receive *C. lanceolata* under the name, though in leaf the two are quite distinct. Probably *C. grandiflora*, being from very hot parts, would not be hardy. For brilliant golden colour *Heliopsis levis* is quite unsurpassed, though there are good and bad forms of the plant, some being too lanky for gardens. My best were raised from seed selected for me from wild plants in Minnesota.

Senecio japonicus, which has a synonym too long to write, is very showy, and seems to want a wet season to bring it to perfection. In dry weather it sheds its buds; both leaf and flower make it worth growing; it is very fine just now. Two *Sedums* are now especially good; one is *S. kamtschaticum*, perhaps the most showy of all the tribe at this season, and never shabby, the abundant and conspicuous orange flowers being succeeded by dark brown seed-vessels. The other is a scarce plant on rockeries—*S. pulchellum*, and produces large bunches, like inverted bird's feet, of flowers of a soft rose colour; but as it flowers from every point, it perishes if not propagated by breaking off and inserting shoots when young.

I will end these notes with a word about Lilies, all of which have done or are doing well this year, except *L. auratum*, which I have quite given up.

Last summer seems to have caused *L. giganteum* to flower while still young; I have had seven flower-stalks, mostly below the average in size, having from thirteen to eight flowers on each. On the other hand *L. pardalinum* is making some remarkable flowers: I measured a solitary flower to-day—I think on a seedling—which I caught just at the time of its greatest expansion, and which proved to be fully 8 inches across. The flowering of *L. testaceum* is also as good as I ever saw it. This is one of the few Lilies which is better for being meddled with. If the small bulbs which form on the crown of the large bulbs are taken away and planted by themselves they make grand flower-heads in two years, and surpass the old bulbs, which deteriorate if left alone for several years. *L. Humboldti*, a capricious Lily, is making some very fine heads in the open border. The entire absence of red-spider from plants usually liable to it helps to compensate for the wet weather. *C. Wolley Dod*, *Edge Hall, Malpas, July 28*.

VEGETABLES.

LATE BROCCOLI AND EARLY CAULIFLOWER.

It is rather late now to talk or be writing of spring Broccoli, as the season is past for sowing, but it is a good time to compare notes now that the respective kinds have had a fair trial, although it should be borne in mind that sorts which did not turn in till the end of June this year may, and most likely will, do so considerably before that date next season, as everything has been quite a fortnight later than usual.

I have not, as yet, grown Gilbert's *Victoria*, noticed in a recent issue, and highly recommended therein, but I have most of the older varieties, and the best of them with us has been Veitch's *Model*, which does not belie its name, as it is the model of what a nice table Broccoli should be. In growth and habit it is very dwarf and compact, and the

heart is close, white, and slightly conical, and as the leaves fold tightly over, the heads are well protected, and therefore maintain their colour till quite ready to cut.

A Broccoli like this that will come in later will be even more valuable, as there is, unless under very careful management, always an interregnum between the last cuttings and the time when Cauliflower comes on; but with earlier sorts of these, which are now making their appearance, and later Broccoli, we may soon hope to bridge over the space. As the season for sowing spring Cauliflower will soon be here, a few words from some of your correspondents as to the kinds they have found the best will be of much value. My favourites are Veitch's *Pearl* and *Early Erfurt*, and as we cannot accommodate many under handlights, our practice is to pot up a quantity in the autumn in 60-sized pots. This we do by putting a handful of half-decomposed leaves at the bottom of each pot, and then filling up with light rich mould, after which the plants are stood or plunged in cold frames with their heads well up to the glass, and they always have plenty of air during winter to keep them sturdy and strong. In March, as soon as the weather is favourable, they are planted out in a warm sunny situation, and as they receive no check by any disturbance of the ball or roots, they start off to grow at once, and it is very rare that any bolt unless sown before the middle of August. To succeed with these we sow a box in February, and place the same in gentle heat, and prick out the plants, when ready, under glass, and plant in the open in April. *J. S.*

SCARLET RUNNERS FOR MARKET.

I have been much interested in the method by which Messrs. C. Steel & Sons, the well-known market gardeners of Ealing, grow their Scarlet Runners. In the first place, they give them good soil, and a piece of ground which had carried Collards and Curled Scotch Kale, was loosened by means of a stirrer worked by steam, which loosened the ground to the depth of 18 inches without turning it over as a plough does. This was done athwart the ground and longways, it was then harrowed, well manured, and ploughed to turn the manure in. When thoroughly prepared it was planted with Scarlet Runner plants. The Beans had been previously sown in dung pits, two Beans in a 48-sized pot, and when 9 inches or so in height they were planted out in lines, the rows about 4 feet apart, and the twin plants 2 feet apart in the lines. Then three strong stakes were placed to each plant—the stakes are about 4 feet or so in length, and they are tied together at the top. This done the plough was sent along the lines, earthing the plants up on either side. The ground being rich, and the soil moist, the plants soon began to grow rapidly, they have sent up shoots already 2 and 3 feet in length. The plants have bloomed, and still flowering freely, and pods are already formed. It appears to be the practice to pinch out the leading shoots after they have reached a certain height; this causes the plant to make lateral growths, which bloom. The extra cost incurred by clearing the plants in pots, and staking them, appeared to be met by the earlier and larger crops they produce; gathering is done without any danger of injuring the plants, and sun and air can circulate among them better than when nothing else is done, but simply pinching out the leaders. The cold rains have had the effect of causing the older leaves to turn yellow, and slugs and snails have attacked the plants. As a precautionary measure a good dressing of soot has just been given, shaken well over the plants, and on the surface of the ground. If only bright sunny weather were to follow, each group of Beans would present to view a dense pyramid of flower. No particular value appears to be attached to varieties, for the Scarlet, the Painted Lady, and the Giant White types, appear in the rows. The Painted Lady is said to be the earliest, and the Giant White the latest to bear; so there is perhaps an advantage in mixing them together. In another month this plantation, which is fully exposed on all sides, will well repay inspection. *R. D.*

FRUIT REGISTER.

HARDY FRUIT TREES.

THE admirable paper of Mr. F. W. Burbidge (p. 615, vol. iii, 3rd series), is too good to be marred by inaccuracy, however innocently incurred. As it is one of the papers that students of history will refer to, and has therefore a permanent value, I am tempted to offer a correction. "I believe I am right," says Mr. B., "in saying that our English Apples, as taken out by the earlier settlers in America, as also the fruits imported from France by the early colonists of Canada, did not succeed as it was hoped they would do, and it was only after the importation of the hardier varieties from Russia and other parts of Northern Europe, and the rearing of seedlings from these, that the present fine race of Apples in America was produced." Further on the point is made that "the Newtown Pippin does not thrive nor attain the flavour in Europe that it does in New England."

So far as I know—and I think I have been in a position to know—there have been no attempts during the period referred to to introduce hardy varieties of Apples from the North of Europe or from Russia, nor any attempt at all to improve the race of Apples by systematic rearing of seedlings. Within the last ten years Russian Apples have been introduced, but these have not had time to have any influence whatever on the race of Apples popular in America, if they ever will. With the exception of Alexander, Tetoffsky, Duchess of Oldenburg, and Red Astrachan, we have no Russian Apple of any consequence known to cultivators, and these have not been used specially for seedlings. In looking over our list of popular Apples I do not note one that I can suspect of having had a Russian variety enter into their parentage. And the popular varieties certainly have not, but are either "English varieties," that is, varieties imported here from English nurseries, or accidental descendants—varieties that have sprung by accident from self-sown seeds, without the slightest design on the part of any fruit raiser to improve the race.

Let us take Canada, or at least that portion known as Ontario. The most popular Apples there that our pomologists in their technical language would "double star" are Baldwin, Northern Spy, Duchess of Oldenburg, Red Astrachan, Ribston Pippin, and St. Lawrence. The last is believed to be some foreign kind, introduced without a name, or name lost, and a new name given to it in consequence; the next three are Old World introductions, while Northern Spy is an accident found near Rochester; and Baldwin, another accident, found no one knows certainly where, but believed to have had the Spitzenburg for its parent—certainly no Russian kind.

In reference to New England—this is rather a large district, but if we take Massachusetts as a central point in this district we find the "double-starred" varieties are:—Baldwin; Cogswell, an accident found at Griswold, Connecticut, in 1798; Gravenstein, an old Dutch importation; Hubbardston Nonsuch, a very old accident found at Hubbardston, Mass.; Hurst Russett an accident found years ago at Concord, Mass.; Porter, an old accident found at Sherburne, Mass.; Red Astrachan, an ancient, full-blooded Russian; Roxburg Russet, a very old accident from its namesake Roxburg; and Rhode Island Greening, another accident (I do not even know where it was first found); Sweet Bough, a very old accident with an unknown home; Talman Sweet, a Rhode Island accident; and Williams' Favourite, another accident from near Boston.

Then as to the association of Newtown Pippin with New England, it is not grown anywhere there. Indeed it is no more reliable anywhere in America than in Europe. It is grown only in a small part of the State of New York, which is not in New England, and is not "double starred" even there.

I cannot say that, on the whole, the American chance seedlings, which go to make up our great list of varieties, are any harder than the foreign intro-

ductions. There are some that are undoubtedly harder, and more productive, and do better, in general terms, than their European brethren; but this may be expected when we have so many thousands of accidental plants to select from against the few score varieties introduced from the Old World. "Providence is usually on the side of the heaviest battalions," Napoleon used to say.

In Pears we have a few American seedlings that have risen to prominence; but European introductions, like Williams' Bon Chrétien, Duchesse d'Angoulême, Beurré d'Anjou, Winter Nelis, Belle Lucrative, Flemish Beauty, Vicar of Winkfield, and similar familiar Old World favourites rule also here.

I trust my friend will pardon this essay at correction. He has evidently been misled by some flippant writer—a class of which here, as elsewhere, there is always a full crop. *Thomas Meehan, Germantown Nurseries, Philadelphia, U.S.A.*

USEFUL INVENTIONS.

SOCKET RINGS FOR HOT-WATER PIPES.

FROM Messrs. Stanley Morrison & Co. the patentees, 9, Gracechurch Street, London, E.C., we have received samples of moulded rough socket rings



FIG. 18.—INDIARUBBER SOCKET-RING FOR JUNCTION OF HOT-WATER PIPES.

in indiarubber for hot-water pipes, for which the makers claim that they are superior to those at present in use, because they are stouter, being made in one piece, so that there is no joint to allow the water to enter; and that being rough on the surface (not shown in the illustration, fig. 18), they get a good grip on the pipes. It is also stated that by using these rings any man can himself take his pipes to pieces and put them together again, saving both time and labour. This would, of course, necessitate the staying of the pipes in some manner to keep them firm.

HOMERIA COLLINA.

This is a "Cape bulb," better known to our forefathers than to the present generation. Its general appearance is shown in the accompanying illustration (fig. 19), but the size and colour of the flower are subject to variation. In the present instance the flowers were of a bright orange-salmon colour, and although individually of short duration, yet, as they are produced in succession they are very effective in a mass. It is generally grown as a greenhouse plant, but Mr. Davidson, to whom we are indebted for the drawing (fig. 19), found the plant to be quite hardy last winter at the foot of a wall—a situation where, doubtless, many South African, Mexican, or Californian plants would be equally at home if protected from excessive wet.

HOME CORRESPONDENCE.

Correspondents will greatly oblige by sending early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

Photographs or drawings of gardens, or of remarkable plants, trees, &c., are also solicited.

MILNE'S PATENT SADDLE BOILER.—It is in summer time usually that the nurseryman and gardener alike, who intend to make alterations in their heating apparatus, make arrangements accordingly. It need hardly be said that all such work should, where possible, be done at a time when the fires are least needed, and no time is so well fitted as summer and autumn. The large number of boilers now offered by the trade makes the matter of selection of a boiler for any given purpose a difficult one. In a great majority of cases the saddle boilers are decidedly in favour, and, having had an opportunity quite recently of inspecting a new form of saddle boiler, I may be permitted to point to some of the chief improvements in the new-comer. Before doing this it may not be out of place to remark that Mr. Milne, the inventor, is a nurseryman and a practical cultivator, carrying on business at New Hampton, in the county of Middlesex. The peculiarities of Mr. Milne's situation render it necessary to have a powerful boiler compact in form and one which does not require too deep a stokehole in which to set it. Having very extensive ranges of glass devoted to a few specialties for market purposes, heated by boilers of various descriptions, none of which were quite up to Mr. Milne's ideal of perfection, he very practically set to work to try if he could make what he wants for himself. The inventor chose the saddle form of boiler as the basis of his endeavours, the particular form being pierced with side and crown flues, which run through it from front to back. The direction of the flame is regulated as follows:—Passing first through the fire-box it passes through to the boiler; at the back of the boiler the flame is deflected by an iron plate at the summit of the back casting, and traverses the side flues, being then directed by means of another plate at the front of the boiler to the crown flues; again passing through the boiler to the brick flue at the sides, and thence to the chimney. The flue tubes passing through the boiler considerably quicken its power of getting up heat, and at the same time conduce to economy in the use of fuel. The flue tubes in the boiler are readily cleaned by passing a brush through them. The joints of these tubes are caulked from external surfaces at front and back, thus affording special facilities for repairs or renewal, any or all of which may be replaced without taking out the boiler. There are two return and two flow pipes, which facilitate the circulation, the latter being, moreover, materially assisted by the boiler being set with an inclination of 2 inches from front to back. It has the advantage of a terminal-end saddle, in that the fire passes throughout its entire length, acting also on the ends. The horizontally low-placed flues are an acquisition in places where water lies near the surface, as in Mr. Milne's case. In compactness and heating power combined, it is quite remarkable; and as at present made, with waterway backcasting, it is capable of heating from 2500 to 3000 feet of 4-inch piping, and when set is contained in a cube of 4 feet by 4 feet, this allowing ample rise through the long range of glasshouses. The inventor has two of these boilers in operation, affording perfect satisfaction, and which he will have pleasure in showing to any person who may desire to learn further particulars about them. *J.* [Our correspondent kindly accompanied his note by a sketch of the boiler and its flow and return pipes. We know that this form of boiler—a modification of that of the locomotive—has the advantage of quickly getting up heat. The retention of heat is a matter of stoking, which includes, of course, proper attention to dampers and ashpit doors. *ED.*]

HYBRID POTATOS.—The products of the interesting crosses between some of the Potatoes to-day with the original species, *Solanum tuberosum*, which the Messrs. Sutton & Sons carried out at Reading a few years since, may now be seen growing in the London Road Nursery grounds, and for the first time since their production, it would seem as if the disease-resisting properties of these Potatoes were to be tested. The mischance which re-

sulted in *S. tuberosum* being fertilised under the belief that it was *Solanum Maglia*, has since been so far rectified that crosses with the latter species have been effected, and no doubt we shall hear of the results in due course. The top growth from the *tuberosum* hybrids, if such a term in this case be admissible, shows great variety in form and character, pretty much as is found in ordinary seedlings from some crosses. A marked feature, so far, with some of the forms has been remarkable productiveness. The great object in view, however, has been the production, if possible, of disease-resisting strains, and what success in that direction has been achieved will doubtless be learnt in a few weeks should the present cold wet weather continue. It is worthy of note as showing the very earnest aim of Messrs. Sutton to secure any promising aid in the direction named, that out in the trial grounds may be seen a considerable breadth of a Peruvian variety referred to by Mr. Ap-Thomas at the St. Stephen's Hall Potato Conference as having the reputation of being free from disease in its native habitat, and stock of which Mr. Ap-Thomas obtained for the Reading firm. Beyond remarking that the variety has tops resembling our common varieties, but the stems are densely abundant, nothing more is to be said about it just yet. Should the disease really develop a serious form in our Potato crops presently, renewed interest will be created in the Potato and all its belongings. A. D.

CYPRIPEDIUM STONEI.—At the fortnightly meeting of the Royal Horticultural Society, held on July 24 last, a *Cypripedium* was exhibited which is noted in these columns, at p. 108, as follows:—"Cypripedium *Stonei* acropetalum, a flower pressed into the form of a flattened canoe, was shown by Messrs. Seeger & Tropp, of Lordship Lane, East Dulwich. The lateral sepals are here disjoined." Messrs. Seeger & Tropp have been good enough to send me the inflorescence in question for examination, which seems to possess the following peculiarity:—The expanded flower has the two lateral sepals disjoined for three-fourths of their length, instead of being connate, as in the normal condition of the species. I do not, however, detect any other difference in the flower, all the parts of which appear perfectly developed. It appears to me to be rather a monstrous flower than a variety—really a case of dialysis of the lateral sepals as opposed to their normal state. This is the normal condition of things in the Canadian *Cypripedium arietinum*, which differs from every other species of the genus in this peculiarity—a character which has twice caused this plant to be separated as a distinct genus—first, by Rafinesque, as *Criosanthes*, and afterwards by Beck, as *Arietinum*, though the difference appears to be too slight to merit such distinction. But this is a digression. I do not think the character likely to be permanent in the variety of *Cypripedium Stonei* in question, for in an expanding bud, just above the flower, the lateral sepals were in the normal connate condition. Some monstrosities, however, appear to have become fixed, or permanent, as *Uropedium Lindenii*, a monstrous state of *Selenipedium caudatum*; and *Paxtonia rosea*, a similar state of *Spathoglottis plicata*. Cultivation alone can test the permanence or otherwise of these characters. R. A. Rolfe.

WHICH IS THE EARLIEST PEA?—I thought I was giving the information old gardeners would be among the first to appreciate when, taking Ring-leader and Improved Sangster's No. 1 as a well-known type of early Pea, I saw no necessity for going into details over the many other reputed varieties of the same thing about which one was represented to be half an hour earlier than the other, or 3 inches shorter. The changes have been rung upon this type *ad nauseum*, and I imagined it was enough for me to state that certain of them having newer names were really our old friend re-christened; and I still hold the opinion that in the general characteristics of type the group of blue round-seeded varieties I mentioned cannot be differentiated from the general type of Sangster's No. 1. The soil in which the seed Pea was grown, the locality, conditions of weather, &c., may affect some; but let them be grown and the seed saved, and grown again a second year on the same piece of ground, and the general characteristics will be admitted to be identical. I mentioned the Old Scimitar because it is a Pea still largely grown in some parts of the country; and in Messrs. Hurst & Sons' trial ground at Chelmsford I saw what was termed an improved type that seemed to me to present to view this old Pea of my boyhood in a desirable form, bearing long well-filled pods,

and appearing as a good hardy, robust, free cropping type, well adapted for market purposes. But there did manifest itself a tendency to run to a tall form, and I was candid enough to say so. Some conditions under which the seed-plants were grown might have caused this. I may further state that the trial of Peas to which I made reference included many hundred samples; there were from ten to twenty different stocks in some cases of the same leading variety. There seemed to be almost every Pea which has been sent out. I did not think it necessary to go through the whole of them with a view of supplying written descriptions. I was perfectly free to draw my own conclusions, and I did so, apart from any pressure or prejudice. I selected what I thought to be the most useful varieties, and the absence of anything like serious criticism justifies the inference that my conclusions are in the main correct. R. D.

SPARROWS.—Near large towns the common sparrow often becomes a perfect nuisance, for every gardener knows how industriously they will shell his Peas, and one farmer near Tunbridge Wells was so plagued with them in his Wheat fields, as the birds migrated from the town in a body, and took possession of his Wheat that he has this year sown—the bearded Wheat—which I understand puzzles their ingenuity, and is secure from their depredations. It will be understood that I am not blind to the fact that they ease us of many a caterpillar, but then they are in severe weather also fond of buds. Our Gooseberries were sadly disfigured by them till I adopted the plan of throwing soot over the bushes pretty freely in the spring; this kills the moss, and at the same time nourishes the bush; but although I have studied birds and their ways pretty closely for years, I was not prepared to see them feeding their young with Potato blossom—a fact which I witnessed last Sunday. I saw them in flocks in the cottage gardens, apparently divesting the blossoms of their petals, and carrying them to their young; the kind of Potato was a kidney, and was growing in very sandy soil, fully exposed to the sun, and thus probably contained a certain amount of honey—at least, this was the only explanation of the act of the birds which occurred to me. J. Rust, *Eridge Castle*.

THE POTATO CROP EARLY AND LATE IN IRELAND.

This crop is second to no other in importance in this country, and the prospect therefore, is the question after the state of the weather every one asks every one else. This query has been asked with a certain amount of fear and trembling during the past three weeks as all the predisposing agents for the diffusion of the Potato disease were daily present. We had a constant downpour of rain, accompanied pretty frequently by thunder and lightning. Now, what is the result? I grow all the new varieties kindly sent me for trial, by such raisers as Messrs. Carter, Sutton, Laxton, Tait, and a few others in Ireland including one—White Fortyfold—sent me by Mr. Inglis, and as I frequently see, and hear from other districts, this is the result as far as I can learn at the end of the first week in August. Early varieties: The old Ashleaf, especially Myatt's, if it can be obtained pure, I consider still for quality unrivalled and the first to turn in. A heavier cropper and not much behind is Carter's First Crop. This firm sent me this season for trial their Earliest of All. I will only say of this if it maintains its present desirable characteristics it is the coming favourite early variety. Early Hammer-smith, Flourball, Pride of the Market, Snowflake, and Extra Early Vermont come second. Three weeks since I noticed the fungus on the Ashleaf Kidneys; so long as the weather remained dry it made little progress. Rain and storm supervened, and it spread rapidly, with the result that hardly a sound leaf is now noticeable in the experimental plot; and the same is true of the market gardens around the town. Their general early crop is a variety called The Flounder, so far as I know, not generally known out of Ireland. It is a heavy cropper, in shape roundish-flat (if that description is not an Irish bull), and far from superior in quality. One word as to quality. Owing to the absence of sunshine, constant rain, and rapid growth, the quality this year is inferior, and I think you would be safe in recommending only the partial use of some varieties; and if possible, with gravity or other such condiments. From a national point of view early varieties are of limited importance. Late varieties: I mentioned above that the fungus first attacked the Ashleafs, it then spread rapidly to Snowflake, then Pride of the Market, and

Early Rose. In fact, in a wet season the American varieties are the first victims. Last season was very dry, and with no disease. I did not, as I mentioned in the *Gardeners' Chronicle*, see a single diseased tubers in any part of Ireland, so this induced many to grow Roses, Beauty of Hebron, Elephants, and other varieties, such as Fortyfolds, Schoolmasters, and Victorias, known to be susceptible of disease, who would otherwise hesitate to plant them. They will in all probability be heavy losers, as I have come to the conclusion no variety is wholly disease resisting. For instance, I have Magnum Bonum, Sutton's Abundance, Laxton's Reward, Champions, and Scottish Queen, with five other varieties of Laxton's not yet in commerce, all unusually strong vigorous growers, growing in plots side by side with the early varieties above-named. As soon as the early varieties got affected the disease passed in a day or two to those just named, so that now nothing remains sound but the stems. Curious enough, the majority of the same varieties out in the open field are still safe. There is hope so far. W. J. Murphy, *Clonmel*.

HERBACEOUS PLANTS.—Mr. Jenkin's doubts and difficulties seem to have arisen because the term herbaceous is still obstinately adhered to in schedules when all sorts of hardy border plants are invited to be exhibited. Of course many of the plants shown are, as a rule, not strictly herbaceous, according to the technical acceptance of the term, but those using the term in their schedules as a rule, doubtless desire that the appellation should not be too rigidly interpreted, and that it should rather include hardy perennials, and possibly even biennials, also, the object evidently being to obtain examples at shows of really hardy plants, as well as of greenhouse or stove plants. The best wording of such class would, I think, be "hardy border plants," and although it might be said that such wording would admit Roses or other shrubs, yet it would be easy to add, "shrubs and Roses excluded." Still, every body understands so fully what is meant by the term "hardy border plants," that little difficulty is likely to arise from this form of wording. Then there would be no question arise as to the admixture of either perennials or biennials, when the term "herbaceous" is employed all real perennials should be excluded, and yet it is very doubtful whether such be intended in any case. Happily, in garden nomenclature or treatment these diverse terms raise no difficulty, for, whether herbaceous, perennial, biennial, or otherwise, we class them as hardy, and that is enough. One of the gayest of border flowers just now is *Lilium candidum*, which, would doubtless, with other Lilies, be ranked as herbaceous, and yet really it is a perennial, because it is practically evergreen. The whole matter is, after all, but a mere word-splitting, and the compilers of schedules will do well to adopt simpler phraseology, and thus make clear to all that which should be as plain as a pikestaff. A. D.

A LARGE LILIUM AURATUM.—The enclosed is a photo of a *Lilium auratum* bulb which I supplied last autumn to a customer, the Rev. John Irving, Free Church Manse, Innellan, Scotland. He has today sent me a copy, and thinks it is an unusual sight to see so many flowers on a spike. It bears thirty-eight blooms. Each flower averaged 10 inches in diameter, and the whole head was 24 inches in diameter by 22 in height. Altogether the plant, possessed a very compact and elegant appearance. H. Erskine, *Edinburgh*. [It is a large head, but we have seen larger ones; as, for instance, one grown in the gardens of the Right Hon. J. Chamberlain at Birmingham, which bore 119 flowers. See our columns for October 23, 1886. Ed.]

CYCAS REVOLUTA.—The following account of the *Cycas revoluta* which is now in flower in the gardens of John Hutton, Esq., of Solberge, Northallerton, may be interesting:—The plant is about forty years old, the stem being 3 feet high, and 32 inches in circumference, with sixty-seven fronds; the flower or cone is 16 inches in length, and is of a yellow colour, much resembling a very large Pine-apple. This plant is a male, and flowered about fifteen years since, and after flowering the plant gradually went back by losing the fronds one after another until they were nearly all gone, when I found on examining the roots ten large crowns or young plants, which fully accounted for the loss of the leaves. I took them all off, potted them, and plunged them in bottom-heat, and all grew, but the parent plant did not seem to recover

the strain. I placed it as a curiosity in the Orchid-house, where it remained quite dead to all appearance for two years, when, to my surprise, the plant again showed signs of life by pushing several crowns at the top of the plant this time,

A RESUSCITATION.—During a terrific wind storm which occurred a few years since, when many noble trees came to grief, it will be remembered that mention was made of the downfall of some fine Limes forming part of a noble avenue of those trees

saye, with a body of helpers, and a stout winch or two, were obtained, the trees lopped to 30 feet—just one-third their original height—and were again stood erect in their former positions. The story of their replacement has been told before; but it may now be added, that each one has made vigorous growth, fine heads are being formed, and the only cause for regret is that 10 feet more of top had not been left on each tree. *A. D.*

CYTISUS RACEMOSUS.—In my note on *Cytisus racemosus* at p. 63 the following correction should be made:—"Maund, *Botanic Garden*, vol. v., t. 235," should read "Maund, *The Botanist*, &c." The mistake arose through the volume of the Kew copy of the latter work being bound up with the titlepage of the former. I did not detect the error until Mr. Burbidge wrote to point out something had gone wrong, when I discovered what it was. *R. A. R.*

SOCIETIES.

SOUTHAMPTON.

AUGUST 4 AND 6.—The Royal Horticultural Society of Southampton may be congratulated upon a very successful show. The competition was exceedingly keen, while the quality of the exhibits was good. Vegetables, as always is the case at Southampton, were especially a strong feature. Fruit showed somewhat the effects of the late bad weather by a greenness in most of the white Grapes, while most of the black Grapes were of good quality, as also were most other fruits, the quantity not being quite so great as on some previous occasions. Plants were an advance in point of number, while the general good quality was evident throughout.

Plants.—The principal class was that for twelve stove and greenhouse specimens, distinct, £18, £15, and £12, being offered as prizes. Mr. J. Cypher, nurseryman, Cheltenham, succeeded in carrying off 1st honours, with a collection particularly strong in flowering plants, while the foliage, if not of extra large proportions, was good in quality, the best being an exceedingly healthy *Latania borbonica*, *Cordyline indivisa*, *Cycas revoluta*, *Erica Parmentieri*, very full and fresh; *Phanocoma prolifera* Barnesii, and *Allamanda nobilis*. Mr. G. Lock, gr. to W. B. Cleave, Esq., Newcombe House, Crediton, was 2nd, his foliage plants being superior to those of the 1st prize group, but the flowering plants were not so strong a feature. Magnificent were the specimen *Crotons Warreni* and *Williamsi*. Mr. E. Wills, gr. to Mrs. Pearce, The Firs, Bassett, Southampton, was a good 3rd. For the same number of plants, confined to gardeners only, Mr. J. Amys was 1st, staging extra fine *Allamanda Hendersoni*, *Trachelospermum jasminoides*, and a very healthy *Cycas revoluta*; Mr. N. Blandford, gr. to Mrs. Haselfoot, Moorhill, Bitterne, Southampton, was a good 2nd, staging a fresh good plant of *Lasiandra macrantha floribunda* among many other good specimens.

For six stove or greenhouse specimens in bloom Mr. Wills was 1st, the 2nd place being accorded to Mr. H. James, Castle Nursery, Norwood.

For nine miscellaneous specimens, not less than three to be in bloom, Mr. E. Molyneux, gr. to W. H. Myers, Esq., Swanmore Park, Bishop's Waltham, was an easy 1st, staging *Croton Queen Victoria*, good, and a good specimen of *Trachelium caeruleum*; 2nd, Mr. W. Thompson, gr. to Captain Bolland, Blighmount, Millbrook.

For the best miscellaneous group, arranged for effect in 120 square feet, Mr. Wills was an easy 1st, with a bright light tastefully arranged lot; the 2nd prize show from Mr. James being short of flowering plants, though otherwise well disposed.

For a collection of Orchids there was only one exhibitor—Mr. T. Osborne, gr. to H. J. Buchan, Esq., Wilton House, Southampton, who, however, made a good show, the most noteworthy plants being *Oncidium Jonesianum*, *Cattleya Schofieldiana*, *Epidendrum nemorale*, *Cattleya Dowiana*, *Oncidium Lanceanum*, and the new *Cypripedium bellatulum*. The same exhibitor took 1st prize for one specimen Orchid (not a made up one) with *Dendrobium Dearei*, carrying three spikes. With *Calanthe veratrifolia* Mr. Wills was 2nd.

For six Coleus, four *Pelargoniums*, four *Fuchsias*, and four double *Begonias*, Mr. G. Busby, gr. to F. Willan, Esq., Thornhill Park, Bitterne, was a good 1st. The best six stove or greenhouse Ferns—a healthy lot—were from Mr. Wills, who was closely



FIG. 19.—*HOMERIA COLLINA*: 11 FLOWERS ORANGE-SALMON COLOURED. (SEE P. 161.)

instead of, as before, at the roots; but they were not so large. They continued to grow and send out two and three or more leaves to each crown, so I took them all off but one in the centre to form the crown again, which has continued to grow and forms the present beautiful specimen. *J. Nicholson, Northampton.*

in the grounds of Highfield, near Heckfield. The gardener, Mr. Davidson, thought that, although those trees had been thrown flat to the ground, and had, in bringing up huge masses of soil with them, torn asunder almost every root, yet they could be reinstated. Being on the Duke of Wellington's estate, the assistance of Mr. Bell, gardener at Strathfield-

followed by Mr. Amys. Six *Celosias*, naturally trained and freely flowered, were best from Mr. J. R. West, gr. to R. R. Wygram, Esq., Salisbury. Mr. Osborne was 1st for six *Fuchsias*, distinct, showing five plants 7 to 8 feet high; and he also led for a single specimen flowering plant, with *Cypripedium Sedeni*, carrying twenty spikes. Single *Begonias* were well shown by Mr. Blandford, with small plants of good habit and extra large blooms. In a brisk competition for six table plants Mr. E. Molyneux was 1st, Mr. Wills being 2nd.

Mr. W. Rogers, Red Lodge Nursery, Southampton, staged (not for competition) a capital collection of hardy shrubs, consisting of 150 plants of the best kinds; these being effectively arranged at one end of the tent, created a good effect.

Messrs. H. Cannell & Sons, Swanley, Kent, showed a collection of cut blooms of *Begonias*, and also plants of a double white variety named *Octavia*.

Fruit.—The leading prize for a collection of six dishes, distinct (Pine excluded), brought five competitors, all staging well. Mr. H. W. Ward, gr. to the Earl of Radnor, Longford Castle, Salisbury, easily secured 1st honours with Muscat of Alexandria and Black Hamburg Grapes; the former with good bunches, even berries, and fair colour, the latter medium-sized bunches of good quality, extra fine Hero of Lockinge Melon, and Goshawk Peaches. Mr. W. Allen, gr. to Sir G. Russell, Bart., M.P., Swallowfield Park, Reading, was 2nd; Violette Peaches and Lord Napier Nectarine, both being richly coloured, and a capital Melon, were his best dishes. Mr. E. Molyneux was a good 3rd.

For three bunches of black Grapes, Mr. C. Warden, gr. to Sir F. Bathurst, Clarendon Park, Salisbury, was awarded 1st honours among five lots with even clusters of Black Hamburg, good berries and well-coloured; Mr. W. Allen, 2nd, with bunches of good size, but rather loose, the berries good in size and colour; Mr. C. Curtis, gr. to J. T. Dixon, Esq., Hollybank, Hythe, took 3rd with larger bunches, but short of colour, both staging Black Hamburg. With three bunches of Buckland Sweetwater, of good quality, Mr. Molyneux was the only exhibitor of three bunches of white Grapes taking 1st. He again led for black varieties with Madresfield court of good quality.

For one Pine-apple, Mr. G. Lock was 1st, with a good Smooth Cayenne; Mr. Ward being 2nd, with a Queen.

The best scarlet-fleshed Melon came from Mr. J. Evans, showing a small fruit of Reed's Hybrid; and with Turner's Scarlet Gem Messrs. W. & G. Drover, nurserymen, Fareham, were 2nd. For one ditto, green-flesh, Mr. Ward, with Hero of Lockinge was 1st among seven staged; Mr. W. Sanders, with the same variety, was 2nd. For the special prize offered by Messrs. Sutton & Sons, Reading, for their Hero of Lockinge, Mr. Ward was 1st, with a capital fruit; Mr. J. Allen was 2nd.

For one dish of six Peaches, Mr. C. Curtis was 1st, with Royal George, rich in colour; Mr. J. Allen 2nd. And for the same number of Nectarines ten lots were staged; Mr. G. Inglefield, gr. to Sir J. W. Kelk, Bart., Tedworth, Marlborough, was 1st, having finely coloured though small fruit; Mr. E. Molyneux was 2nd, with Pine-apple. Six dishes of fruit, outdoor growth, distinct, from Mr. J. Evans, were 1st—a good even lot.

Cut Flowers.—For twelve bunches of cut flowers, distinct, Mr. J. Evans was 1st, staging a capital lot, consisting of *Lilium Harrisii* and *lancifolium* roseum, *Magnolias*, *Imantophyllum*, and *Eucharis*; Mr. H. James was 2nd.

Mr. Molyneux had the best twelve hardy herbaceous flowers among five lots, showing well *Phlox* Max Kolb, *Rudbeckia laevigata* and *Trachelium coeruleum*; Mr. B. Ladham, nurseryman, Shirley, was 2nd.

The best twenty-four distinct blooms of Roses came from Messrs. Keynes, Williams & Co., The Nurseries, Salisbury, a good lot, having regard to the time of year and the weather; Messrs. Perkins & Son, Coventry, were 2nd.

For twelve blooms, gardeners only, Mr. W. Clements, gr. to Mr. H. J. Gibbs, Foord, near Salisbury, was 1st, closely followed by Mr. Neville, gr. to F. W. Flight, Esq., The Cornstiles, Twyford, Winchester. Carnations, Picotees, and zonal *Pelargoniums*, double and single, were fairly well shown by Messrs. Rebbeck & Busby.

Messrs. Keynes, Williams & Co., staged, "not for competition," several boxes of Roses of good quality; while from Messrs. Pince & Co., came seventy-two blooms of *Rose Niphetos*, and a large number of Carnations and Picotees. Messrs. J. Cheal & Son,

Crawley, Sussex, put up one box of pompon and one of single Dahlias of good quality.

Vegetables made a large show. The principal class was for twelve distinct (two kinds of Potatoes, round and kidney, allowed), which brought forth seven competitors, rendering the contest sharp. Mr. C. J. Waite, gr. to Col. the Hon. W. P. Talbot, Glenhurst, Esher, was placed 1st for a splendid lot, the best dishes being Reading Perfection Tomato, Ne Plus Ultra Runner Bean, Stourbridge Glory Potato, New Intermediate Carrot, Giant White Tripoli Onion, and Webb's Kinver Mammoth Bean; Mr. W. Pope, gr. to the Earl of Carnarvon, Highclere Castle, Newbury, was a good 2nd, staging capital produce, the most noteworthy being White Elephant Onion, the Duchess Pea, and Early Puritan Potato.

For nine varieties there were eight entries, the best coming from Mr. F. J. Cox, gr. to R. King Wyndham, Esq., Corhampton House, Bishop's Waltham, the Turner Hybrid Tomato, White Elephant Onion, and Duke of Albany Pea being the best; an exceedingly close 2nd was Mr. Molyneux.

For the prizes offered by Messrs. Webb & Sons, Mr. C. J. Waite took the lead with produce similar to that in his twelve prize lot; Mr. Pope again followed close.

There were nine exhibitors for four sorts of round, and four sorts of kidney Potatoes, six of each. Mr. R. West having the best, even, clean samples of leading kinds; Mr. Sanders a close 2nd.

For the best nine specimens of Sutton's Reading Perfection Tomato, for which the firm offered special prizes, Mr. Waite was 1st with even, large, and well-ripened fruits; Mr. T. Annells, gr. to T. J. Shenton, Esq., The Glen, Golden Common, Winchester, being a good 2nd.

The best Tomatoes staged were those of Hackwood Park Prolific, from Mr. W. Joy, nurseryman, Shirley. These were of extra good quality. Mr. Waite was 2nd among twelve lots competing.

Table decorations, bouquets, &c., were very fine on the whole, and the entries were numerous.

ST. NEOTS HORTICULTURAL.

AUGUST 6.—This Society held its annual exhibition as usual on Bank Holiday, and was successful in all respects. It took place in a field in the centre of the town, and was attended by great numbers of people. The leading exhibitor of plants was Mr. Redman, gr. to J. H. Goodyames, Esq., Eynesbury; Mr. George Myers, gr. to the Earl of Sandwich, Hinchbrook, Huntingdon; Mr. Smith, gr. to Miss Cheere, Popworth Hall, St. Ives; Mr. R. Carter, gr. to Captain Duncombe, Waresley; Mr. Thomas, gr. to Lord Esme Gordon, St. Neots; Mr. Last, gr. to F. Day, Esq., The Priory, St. Neots; Mr. G. Warboys, gr. to Mrs. Medland, St. Neots, &c. Mr. Redman's contributions greatly helped the show. Messrs. Wood & Ingram, Huntingdon, sent some stands of good blooms of Carnations and Picotees.

Cut Roses were a good feature. The Silver Cup, given by the President, A. J. Thornhill, Esq., Diddington Park, Huntingdon, for twenty-four blooms was won by Mr. E. B. Lindsell, of Huntingdon; Messrs. G. & W. Burch, of Peterborough, being a good 2nd. Mr. Redman had the best stand of twenty-four bunches of cut blooms, showing a very good lot indeed; and bunches of hardy flowers in twelves were a very good feature also. Hardy fruits were very fine. Vegetables, and especially Potatoes, in rare form. Farm produce was very interesting, and the schedule included prizes for song birds and other subjects of interest to country people. Large numbers of visitors came in from the surrounding villages. The success of the Society is mainly due to the acting Secretary, Mr. William Ratchelous.

LIVERPOOL HORTICULTURAL ASSOCIATION.

AUGUST 4.—With few exceptions, and those of the character of Dahlias, Gladioli, &c., that are largely affected by the wetness and lateness of the season, this was a very fine exhibition. It was held in the Sefton Park. Plants (especially the foliage and ornamental ones) were surprisingly fine. Some plants of *Crotons*, and especially of *Queen Victoria*, were large in size, and brilliant in development. All the large plants were arranged on the grass.

Stove and Greenhouse Plants.—Several classes were devoted to these, and there were three entries in that for twelve specimens, six in flower; here Mr. James

Cypher, Cheltenham, scored a victory, having of foliage plants *Crotons Queen Victoria* and *angustifolius*, *Kentias Fosteriana* and *australis*, *Lantana borbonica*, and *Cycas revoluta*, a magnificent *Erica depressa*, *E. Marnockiana*, *Kalosanthes coccinea*, *Phenocoma prolifera* Barnesii, *Statice profusa*, and *Allamanda nobilis*—a very good dozen indeed; 2nd, Mr. A. Nicholson, gr. to W. C. Roberts, Esq., Highfield, Leigh, also with a very fine lot, having large specimens of *Kentia australis*, *Cycas circinalis*, *Lantana borbonica*, *Encephalartos villosus*, *Crotons Queen Victoria* and *angustifolius*, *Dipladenia amabilis* and *profusa*, *Clerodendron Balfourianum*, *Ixora Williamsii*, *Erica jasminiflora*, and *Allamanda cathartica*. Mr. Cypher also had the best six plants in bloom, Mr. A. Nicholson being 2nd.

The best eight plants four in bloom, came from Mr. B. Cornwall, gr. to T. S. Timans, Esq., Cleveley, Allerton, who had a magnificent *Croton Queen Victoria*, fully 8 feet through, grandly grown and coloured; C. Disraeli, *Phenocophorum sechellarum*, and *Gleichenia dichotoma*, *Ixora Dixiana*, *Allamanda Schottii*, *Erica æmula*, and *Anthurium Scherzerianum*. 2nd, Mr. A. R. Cox, gr. to W. H. Watts, Esq., Elen Hall, Waverley. Single specimen stove and greenhouse plants in bloom were also well shown.

Foliage Plants.—These were generally of large size and striking development, and made a fine display placed down the centre of the plant tent. The best eight came from Mr. J. Jellicoe, gr. to F. H. Gossage, Esq., Campfield, Woolton, similar in character to those already named; Mr. Cypher being a close 2nd. Mr. Cornwall had the best six—a very good lot; Mr. Cox being 2nd. Mr. B. Hall was 1st with three fine Palms, and Mr. W. C. Clark 2nd. Single specimens in three classes were also very good.

Orchids were shown in collections of four, and also as single specimens, the plants small but bright. Mr. J. Cypher had the best four; Mr. Henry Tate being 2nd. Mr. McIver had the best single specimens.

Miscellaneous Flowering Plants.—These included greenhouse *Ericas*, Mr. Cypher having the best three; *Fuchsias* in sixes and threes, generally old frames thinly clothed; single and double zonal *Pelargoniums*—good on the whole; Ivy-leaved *Pelargoniums*, large pyramid-trained specimens, needing sun-heat to get them into flower. Tuberous-rooted *Begonias*, very large, finely-grown, and bloomed specimens, of high quality: the best six were shown by Mr. A. R. Cox. *Gloxinias*, comprising some very good plants; *Achimenes*, *Petunias*, double and single, finely grown and flowered plants being the rule; and *Lilium auratum* and the varieties of *speciosum* were very fine.

Exotic Ferns.—The best eight were shown by Mr. Thomas Gowen, Wroseley Hall, Liverpool including good examples of *Davallia Mooreana*, *Dicksonia antarctica*, *Adiantum Lindeni*, *A. assimile*, *Pteris scaberula*, *Gymnogramma peruviana argyrophylla*; 2nd, Mr. Cornwall, with well-grown plants of *Gleichenia dichotoma*, *Microlepia hirta cristata*, *Davallia filijensis plumosa*, *D. tenuifolia Veitchiana*, &c. Mr. H. McIver had the best four, Mr. H. Tate being 2nd. Filmy and Tree Ferns, *Lycopods*, and hardy Ferns, were also good features.

Caladiums and Coleus were represented by medium-sized, well-grown, and bloomed plants, but the varieties were somewhat old.

Groups of Plants Arranged for Effect.—The groups at Liverpool were required to be of circular shape, and they are placed down the middle of one of the tents. The only exhibitor in the class to fill a space of 250 feet was Messrs. R. P. Ker & Sons, of the Aigburth Nurseries, who put up a faultless group, in which their richly coloured *Crotons* were specially attractive, and some plants of *Humea elegans* a fine feature. In that, to fill 150 feet, some very tasteful groups were set up, Mr. R. Cox being 1st, and Mr. Jellicoe 2nd.

Cut Flowers.—Roses were a leading, and a very fine feature. The best forty-eight blooms of Roses came from Messrs. Harkness & Sons, Bedale, who put up a very fine lot indeed, the crimson and scarlet H.P.s being conspicuous for their superb quality. Messrs. A. Dickson & Sons, Newtonards, were 2nd; and Messrs. R. Mack & Sons, Catterick Bridge, 3rd. Messrs. Harkness & Sons had also the eighteen Teas and Noisettes. Mr. T. B. Hall, Rock Ferry, was 1st, with twenty-four varieties; Mr. A. Tate, Woolton, a good 2nd. Mr. Hall also had the best twelve varieties. The best bloom of one dark variety was Ulrich Brunner, in remarkable character, from Messrs. Harkness & Sons; Messrs. A. Dickson & Sons being 2nd, with Marie

Baumann. The best twelve blooms of a light variety were Her Majesty, from Messrs. A. Dickson & Sons; Messrs. Harkness & Sons being 2nd, with Merveille de Lyon. Prizes were also offered for the best arranged box of Roses, Fern fronds being also employed. Mr. T. B. Hall was 1st, and Mr. H. P. Westress 2nd. The best collection of eighteen varieties of stove and greenhouse flowers came from Mr. A. Heine, Manchester; Trentham Gardens supplying a remarkably good 2nd. Hardy flowers, shown in bunches of twenty-four and twelve, were good and numerous. Pansies, Carnations and Picotees, Dahlias, &c., were below the average.

Bouquets and Vases.—Messrs. S. Perkins & Sons, Coventry, had the best two bouquets; Mr. A. Heine being 2nd. The latter had the best in the class for one, and also the best epergne; but the stands in this class were scarcely worthy of Liverpool. Bouquets of wild flowers were a good feature.

Fruit.—Of this there was a satisfactory display, the bunches of Grapes were very fine, but lacked finish owing to the absence of sun-heat. The best collection of eight dishes came from Mr. R. Dawes, gr. to the Hon. Mrs. Meynell-Ingram, Temple Newsum, Leeds, who had Madresfield Court and White Muscat Grapes, Royal George Peaches, Lord Napier Nectarines, Figs, Strawberries, &c.; 2nd, Mr. W. Pratt, The Gardens, Longleat, Warminster. Mr. T. Elsworthy, gr. to A. R. Gladstone, Esq., Court Hay, had the best six dishes—a good lot; Mr. D. Lindsay, gr. to Sir T. Edwards-Moss, Otterspool, being 2nd.

The best Pine-apples in both classes, came from Trentham Gardens.

Mr. R. Pilkington, Liverpool, had the best four bunches of Grapes, staging fine examples of Black Hamburg, Madresfield Court, Muscat of Alexandria, and Buckland's Sweetwater. 2nd, Colonel W. W. Pilkington, Roby Hall, with Buckland's Sweetwater, Foster's Seedling, Black Hamburg, and Madresfield Court.

Black Hamburg, Madresfield Court, Muscat of Alexandria, Foster's Seedling, and Buckland Sweetwater were the leading varieties in the classes for two bunches. Peaches, Nectarines, Melons, and Strawberries were also good.

Vegetables.—It must suffice to say that these were numerous and very fine, Potatoes being a great feature. Messrs. Sutton & Sons' special prizes for six distinct varieties of vegetables brought a very keen competition.

New Plants.—First-class Certificates of Merit were awarded to Messrs. R. P. Ker & Sons, Aigburth, for *Crotona aigburthensis* and *Aigburth Gem*, two narrow-leaved varieties of great distinctness of character, the latter being brilliantly coloured; and to Messrs. H. Cannell & Sons, nurserymen, Swanley, Kent, for white *Begonia Octavia*, the blossoms of which are like those of a *Gardenia*, and singularly pure.

Miscellaneous Contributions.—Among these was a group of decorative plants, and three large circular groups of Roses in pots from the Liverpool Horticultural Company (John Cowan), Limited; a group of *Crotona* and other stove and greenhouse plants, from Messrs. R. P. Ker & Sons; a large collection of Ferns, from Messrs. W. & J. Birkenhead, of Sale; plants, wreaths, &c., from Messrs. Jones & Sons, florists, Liverpool; cut *Begonias*, &c., from Messrs. Rodger McClelland & Co., Newry, Ireland; cut bloom of zonal *Pelargoniums* and single and double *Begonias*, from Messrs. H. Cannell & Sons; and a group of plants, and also cut flowers, from Messrs. Dicksons, of Chester, all of which were highly commended.

Great praise is due to Mr. E. Bridge, the Secretary, for his excellent arrangements, but the rain, which fell all Saturday afternoon, prevented many visitors from witnessing the exhibition, and it is feared a financial loss will accrue to the Association.

ROYAL SCOTTISH ARBORICULTURAL.

The thirty-fifth annual meeting of this Society was held in the class-room of the Royal Botanic Gardens, Edinburgh, on the 7th inst., Mr. Malcolm Dunn, the Palace Gardens, Dalkeith, in the chair. On the motion of the Chairman, the Earl of Hopetoun was elected President of the Society.

The Chairman, in his opening address, glanced at some of the more prominent topics of the day in connection with forestry. Looking back to the year 1854, when the Scottish Arboricultural Society first saw the light, they might, he declared, say that the forestry of the present time was, like the Society,

then in its infancy. In 1854 their esteemed ex-President, Dr. Cleghorn, was engaged in working in the midst of his busy official duties, that great system of forest conservancy which he began to put into execution two years later, and which at the present time was such a remarkable feature in the economy of the Government of India, and so full of promise in the future of that magnificent country. In that same year the Society was instituted by a few able and enthusiastic foresters, with a view to promote a better knowledge of the science and art of forestry, and the adoption of better methods for the management of their woods and forests. Following up the scheme thus laid down by the pioneers of 1854, the Royal Scottish Arboricultural Society had diligently persevered in the path so well laid out for it, and had striven by every legitimate means to foster a love of the profession among its members, to promote a correct knowledge of the various systems and details of modern forestry, and especially to establish for young men a suitable education and the best possible method of training, to qualify them for carrying out with credit and success the many important functions of a forester. The Chairman then recalled the part taken by the Society in organising the Forestry Exhibition of 1884, and afterwards gave an outline of the proceedings of the Parliamentary Committee on Forestry, which resulted in a recommendation that a Forest Board should be created by the Government with the view of establishing schools of forestry throughout the country. It was believed that such a Board would be formed in connection with the new Department of agriculture which it was the intention of the Government to institute. The Royal Scottish Arboricultural Society would be entitled to a representative on that Board, along with other kindred societies, and if the various bodies took care to elect really efficient representatives, they might look forward with confidence to the establishment of proper institutions for the training of all grades of forestry that the necessities of the country might require at home and abroad. As to the prospect of foresters receiving remunerative employment after they had fully qualified themselves for their profession, he said he had looked into that aspect of the question with some care, and it appeared to him that there would be no lack of employment for all duly qualified men, and that the remuneration would be at least equal to that received in any other profession in qualifying for which the same amount of time and money had been expended. The owners of large estates were every day becoming more alive to the fact that their woods and waste lands must be managed with the best skill and intelligence, so as to make them a permanent and valuable source of income, instead of the worthless burden they had been in the past. There were about 12,000,000 of acres, nearly all included in the large estates of the United Kingdom, the annual value of which did not exceed an average of 1s. 3d. an acre. Allowing a deduction of one-third for high altitudes of land unsuitable for the growth of forest trees, there still remained 8,000,000 of acres of land which might be covered with forests to the mutual advantage of the owners and the benefit of the country. Land at annual value of 1s. 3d., or, adding the value of the one-third deducted, as useless for growing timber—say, 1s. 8d.,—could not be of much use for grazing purposes. After it was once planted it would in all probability afford as much grazing for stock, except under Pines and Spruces, under proper regulations, as it had furnished before being planted, and it would give far better shelter and cover for deer and other game, which would still be a source of considerable income. The greater portion of this land, lying at an altitude of 300 to 1500 feet above sea-level, was well adapted for the growth of forest trees, and only required to be properly laid out, planted, and managed by duly qualified foresters to quadruple at least the annual income derived from it, after paying all expenses and allowing for all contingencies. In addition to all this, the working of the forests and the manufacture of their products would supply well-paid work to a larger rural population than now inhabited those districts, and would thus help to solve one of the greatest social problems of the day—how best to retain in rural districts a happy and industrious working population. Nor was there the slightest danger of overstocking the country with forest, even if all these 8,000,000 acres were planted. The total area now under woodlands in the United Kingdom was about 2,788,000 acres, the smallest proportion to the total acreage of the country that was to be found in any well-regulated European

State. With the 8,000,000 added, the woodlands would only cover 14 per cent. of the total area, a proportion which was exceeded by several of the northern countries in Europe. There was thus a sufficient field for a greatly extended system of forestry in this country and a consequent demand for well-educated and trained foresters. The owners of the land might have the will to enter on those extensive enterprises, but some of them might not have the means. That difficulty could, however, be met, either by Government loans or by forming public companies to supply the money.

Awards for Competitive Essays.—Mr. D. F. Mackenzie, Morton Hall, submitted the report of the judges on the competitive essays, the following being the awards:—"Report on the Giant Thuya"—Bronze Medal, A. D. Webster, Hollydale, Holwood Park, Kent; "Report on the Old and Remarkable Trees of Holwood"—Silver Medal, A. D. Webster; "On the Comparative Value of Exotic Coniferae as Ornamental or Timber Trees in Britain"—No. 2 Silver Medal, A. D. Webster; "Landscape and Economic Planting"—Bronze Medal, Charles S. France, Ash Cottage, Bridge of Dee, Aberdeen; "Botany of Hampshire"—Bronze Medal, John Smith, surveyor, Romsey, Hampshire; "Old and Remarkable Trees, with Photo Album"—No. 1 Silver Medal, James Barrie, forester, Stevenstone, Torrington, Devon; "Plans and Specifications for the Erection of Foresters' Cottages"—No. 2 Silver Medal, R. B. Keay, forester, Redcastle, Ross-shire; "On the Comparative Value of Exotic Coniferae as Ornamental or Timber Trees in Britain"—No. 1 Silver Medal, Thomas Wilkie, Tynninghame, Prestonkirk; "Report on the Advantages of Forming Belts of Plantations on Hill Pasture Lands"—Bronze Medal, Thomas Wilkie; "Report on the Rearing of Underwood for Game Coverts in High Forests"—Bronze Medal, Thomas Wilkie; "The Best Approved Collection of Dried Specimens of Leaves of Hardy Trees"—George Dodds, Wentworth, Rotherham.

Forest Board.—The Chairman invited suggestions as to the appointment of a representative on the Forest Board, which, it was hoped, would be established this year in connection with the proposed new Department of Agriculture.

Dr. Cleghorn said he would much have preferred that forestry education should have been kept separate from agriculture. It was a very important matter, and he thought the Parliamentary Committee might have given a stronger expression of opinion than they did; but so far as their report went, it was in a right direction.

Mr. James Watt, Carlisle, while looking upon the proposal to appoint a representative as premature, thought there could be but one opinion as to the gentleman who should be selected when the time came. He hoped they would, when the appointment became practicable, send Dr. Cleghorn to the Board.

The Universities Bill and the Botanic Gardens.—The Chairman stated that the Council had petitioned Parliament against the clauses in that bill transferring the Botanic Gardens from the Crown to the University, and desired the meeting to give an expression of its opinion on the matter. Mr. McKenzie, Edinburgh, said the proposal of the Government was injurious to foresters, gardeners, and the public at large. The gardens were invaluable as a source of technical education, and he urged strenuous opposition to any change that would impair their usefulness.

Professor Bayley-Balfour said he was of opinion that it would be a mistake to transfer the garden, not only in the interests of the garden itself, but in the interests of the general public, of the University, and of scientific and general education. The only reason given by the Treasury for the proposal was that it wanted to get rid of the expense of both the Arboretum and the Botanic Garden. The Arboretum, however, was not included in the bill, so that the Treasury would still have to keep it up. No one wanted the change, and he was glad to see that the public were moving earnestly in opposition to it.

Visiting the Arboretum and Inverleith Nurseries.—The business of the meeting over, the members were conducted around the Arboretum by Mr. Lindsay, Curator, Botanic Gardens. The various groups of trees and shrubs, which are arranged chiefly in their natural orders, were inspected with much interest. The party then proceeded to inspect the several Inverleith nurseries belonging respectively to Messrs. J. & S. Dickson & Sons, Messrs. Thomas Methven & Sons, and Messrs. R. S. Robertson & Co. Mr. John Methven directed the attention of the party to the

distinction between the Tyrolese and the native Larch, in a fine quarter of two year seedlings of splendid growth. Growing side by side the difference was very remarkable, the foreign being much less vigorous and darker in colour than the native.

On leaving the Inverleith Nurseries the Warriston Nurseries of Messrs. Methven & Sons were next visited, and the valuable stock of ornamental shrubs and trees inspected with interest.

The Dinner and Presentation to Dr. Cleghorn.—The annual dinner of the Society was held in the Waterloo Hotel, in the evening, and advantage was taken of the occasion to present Dr. Cleghorn with his portrait, which had been subscribed for by his numerous friends in appreciation of his eminent services to arboriculture in this country and in India. The chair was occupied by Professor Bayley-Balfour, and Mr. Dunn, Dalkeith, acted as croupier.

THE SCOTTISH HORTICULTURAL ASSOCIATION.

The ordinary monthly meeting of this Association was held on the 7th inst., in 5, St. Andrew Square, Mr. McKinnon, The Gardens, Scone Palace, in the chair. The Secretary, Mr. Robertson Munro, read the petition to Parliament, agreed upon at the extraordinary meeting of the Association, reported in our issue of last week, against the proposed transference of the Botanic Gardens, Edinburgh, from the Crown to the University authorities.

The petition was unanimously approved of.

Mr. W. Sutherland read a paper on "The Functions of Horticultural Societies." Assuming that the machinery for the working of horticultural societies established by the leaders of horticultural movements two or three generations back could not be much improved upon, he yet thought it was possible and desirable to introduce more elastic methods to widen the scope of usefulness of societies, so that their work might meet the requirements of modern conditions. Something was being done in this way by such as the Scottish Horticultural Association and others which had sprung up in various parts of the country. They cultivated the literary side of gardening, and encouraged the practical at the same time, and might further extend their usefulness he thought by some scheme of federation by which they circulated their papers and other sources of information among each other as was done with excellent results by similar societies in Canada and the United States of America. He urged that in the questions respecting the cultivation of the land, its distribution and tenure lay questions in which such societies might be helpful in bringing about a solution of the present depression in agriculture.

With regard to flower shows he held that as a means of popularising gardening they were excellent but thought that their power to educate gardeners was over-rated, in so far as practical matters were concerned. It was in the garden the exhibitor acquired his skill as a cultivator not in the flower show. He complained that schedules generally were unfairly balanced as regards the distribution of the money value of the prizes, vegetables being in many cases all but ignored, and in almost every case having smallest consideration given them.

There were two exhibits of merit, one a numerous collection of cut flowers of tuberous Begonias, seedlings of last year, from Mr. John Downie, Beechhill Nursery, Edinburgh; the other, a very superior yellow, was named Mrs. John Downie.

The other exhibit was from Messrs. Munro & Ferguson, Edinburgh, and was an improved form of *Matricaria inodora flore pleno* named Snowflake.

THE WEATHER.

THE PAST WEEK.

The following summary record of the weather for the week ending Aug. 6, is furnished from the Meteorological Office:—

"The weather has remained in a cool changeable showery state, but the amount of cloud and rainfall has been, as a rule, considerably less than that recorded of late. Thunderstorms occurred in many parts of the country during the early part of the week.

"The temperature has again been below the mean in all districts, the deficit ranging from 4° in 'Scotland, N.,' 'Ireland, S.,' and the 'Channel Islands,' to 7° in 'England, E.' The highest temperatures were

recorded on August 2 or 3, when the thermometer over England rose to a little above 70° at the close of the week; however, the maximum readings were below 65° in many parts of the kingdom. The lowest temperatures were recorded during the early part of the week at our northern stations, and towards the close of the week at the southern stations, the thermometer falling below 40° in all districts excepting 'England, E.,' and 'England, S.' In 'Scotland, E.,' it fell to 34°, while in 'Scotland, W.,' a minimum of 33° was registered.

"The rainfall has varied greatly, not only in different parts of the United Kingdom, but in closely adjacent localities. In some of the western districts an excess is shown, owing to a somewhat heavy fall, which occurred on August 4, while in the east and south of England a similar result was brought about by the torrential rains which visited some localities on the night of the 1st. At Ingatestone the amount measured on the morning of the 2nd was as much as 3.20 inches.

"Bright sunshine has been more prevalent than it was last week; the percentage of the possible amount ranged from 25 in 'England, E.' to 40 in 'England, S.W.,' and 46 in 'Scotland, W.'"

[Accumulated temperature indicates the combined amount and duration of the excess or defect of temperature above or below 32° F. for the period named, and is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.				
	Above or below the Mean for the week ending Aug. 6.	ACCUMULATED.			
		Above 42° for the Week.	Below 42° for the Week.	Above 42° difference from Mean since Jan. 3, 1888.	Below 42° difference from Mean since Jan. 3, 1888.
Principal Wheat producing Districts.		Day-deg.	Day-deg.	Day-deg.	Day-deg.
0. SCOTLAND, N. ...	4 below	59	0	-173	+201
1. SCOTLAND, E. ...	5 below	71	0	-336	+157
2. ENGLAND, N.E. ...	6 below	78	0	-375	+73
3. ENGLAND, E. ...	7 below	94	0	-302	+154
4. MIDLAND COS. ...	6 below	89	0	-359	+150
5. ENGLAND, S. ...	5 below	104	0	-385	+204
Principal Grazing, &c., Districts.					
6. SCOTLAND, W. ...	5 below	71	0	-249	+107
7. ENGLAND, N.W. ...	6 below	83	0	-286	+117
8. ENGLAND, S.W. ...	5 below	97	0	-330	+254
9. IRELAND, N. ...	5 below	82	0	-232	+67
10. IRELAND, S. ...	4 below	96	0	-217	+113
— CHANNEL ISLANDS	4 below	111	0	-287	+154

DISTRICTS.	RAINFALL.		BRIGHT SUNSHINE.	
	More or less than the Mean for the Week.	No. of Rainy Days since Jan. 3, 1888.	Total Fall since Jan. 3, 1888.	Percentage of possible Duration for the Week.
Principal Wheat-producing Districts.	Tenths of Inch.	Ins.		
0. SCOTLAND, N. ...	0 (aver.)	141	21.7	30
1. SCOTLAND, E. ...	4 less	123	18.3	40
2. ENGLAND, N.E. ...	0 (aver.)	116	17.1	29
3. ENGLAND, E. ...	8 more	118	16.0	25
4. MIDLAND COS. ...	3 more	110	15.4	32
5. ENGLAND, S. ...	6 more	112	17.2	31
Principal Grazing, &c., Districts.				
6. SCOTLAND, W. ...	0 (aver.)	115	25.0	46
7. ENGLAND, N.W. ...	4 more	118	17.1	40
8. ENGLAND, S.W. ...	3 less	121	20.1	41
9. IRELAND, N. ...	1 more	121	22.0	34
10. IRELAND, S. ...	3 less	112	22.5	37
— CHANNEL ISLANDS	2 less	135	18.4	?

MEAN TEMPERATURE OBSERVED AT CHISWICK DURING THE WEEK ENDING AUGUST 18. (AVERAGE OF FORTY-FOUR YEARS.)

Aug. 12 ...	62°.7	Aug. 16 ...	62°.3
" 13 ...	62°.6	" 17 ...	62°.1
" 14 ...	62°.5	" 18 ...	62°.0
" 15 ...	62°.4	Mean for the week ...	62°.4

Obituary

ALEXANDER ROGER.—The horticultural community has lost a distinguished representative in the person of Mr. Roger, who died on the 7th inst. after a lingering illness. Mr. Roger was in his 63rd year. After passing some years in the service of Mr. Noble at Berry Hill, Taplow, Mr. Roger was in 1871 entrusted with the superintendence of Battersea Park. It was no slight undertaking to follow such a man as Gibson, who had founded Battersea, and made it a name of note in the horticultural world; but Roger proved equal to the task, and well maintained the reputation of the Park as a good example of popular horticulture in various styles. He retired from active service about the middle of March this year, on the occasion of the transference of the Park from the Government to the Metropolitan Board of Works. He leaves a widow and family.

ENQUIRIES.

"He that questioneth much shall learn much."—BACON.

RICH AND POOR SOIL.—It was stated lately in the *Gardeners' Chronicle* that a rich soil will retard or prevent Spinach running to seed. Seeds of *Tropaeolum majus* are also said to produce more flowers when sown on poor soil than when on a rich one. Is it considered generally true that plants growing on a poor soil will produce more flower than plants growing on a rich one? Is not the object of manuring usually to produce a contrary effect? *A. B.* [A soil which is rich, especially rich in nitrogenous matter and water, undoubtedly tends to the production of foliage, while a poorer, drier soil, one containing relatively much mineral matter and little nitrogenous matter, will tend to the production of seed. But these are general statements, subject to many modifications. If the rich manure be applied at a particular time, just when the flower is commencing its development, its size and colour will be enhanced. Ed.]

NOTICES TO CORRESPONDENTS.

CYPRIPEDIUM SELLIGERUM: E. P. We cannot tell you why the bract at the base of the flower has become unusually leafy. It is a sign of vigour rather than otherwise, and is not to be discouraged.

GRAPES DISEASED: G. B. A case of scalding generally supposed to be due to defective ventilation. There is no fungus or insect. We confess we doubt the explanation usually given, but we have no other to offer.

GRAPES SPOTTED: Ryburgh. The examples sent are typical instances of "spotting," either accidental or constitutional. Mr. Barron says:—"By some cultivators the spot is believed to be caused by sudden chills, such as having the house very close and moist, and then suddenly, on some bright morning, admitting the external cold air too precipitately and too abundantly." Spot is not contagious, as your experience indicates.

NAMES OF FRUIT: W. M. Cherry Belle d'Orleans.—*H. W.* Strawberry President.

NAMES OF PLANTS: K. 1, 2, 3, 4, all varieties of *Adiantum cuneatum*; 5, *Gypsophila acutifolia*.—*A. C. B.* Campanula Tommasiniana, and *C. aparinoides*.—*C. W. D.* Achillea micrantha, Biel.—*Old Riga Subscriber.* Seems to be *Cytisus ratisbonensis*, but we cannot be sure from such a scrap.—*C. C. B.* *Gongora galeata*, alias *Acropera Lodigiesii*.—*O. P. Q.* *Scoropodium Lobbi*.—*M. C.* *Desfontainea spinosa*.—*W. F.* 1, *Lysimachia vulgaris*; 2, *Thalictrum flavum*; 3, *Hieracium auran-*

tiacum. — *J. C. L.* Spiræa arifolia. — *G. P.* 1, Euphrasia officinalis (the common Eyebright); 2, Epipactis purpurata; 3, Trifolium arvense; 4, Teucrium scorodonia. — *Reader.* Elæagnus angustifolia. — *T. J.* Calystegia (or Convolvulus) pubescens. — *W. H.* Wild Chicory (Cichorium intybus).

NECTARINE: *E. B.* The fruit of Lord Napier sent weighs $7\frac{1}{2}$ oz., and is certainly a fine fruit.

NECTARINE CRACKING: *C. B.* The cracking is due to disproportionate growth of the flesh as compared with that of the skin, induced probably by excess of moisture and heat. It is no more possible to say why one tree does and another next to it does not, than it is to say why of two children exposed to an infectious disease one shall take it and the other not. Plants have their peculiarities like other living beings.

CATALOGUES RECEIVED.

HAAGE & SCHMIDT, Erfurt, Germany—Bulbs and Flower Roots.

VILMORIN-ANDRIEU & Co., 4, Quai de la Mégisserie, Paris, France—Bulbs and Strawberry Plants.

A. DESSERT, Chenonceaux, Indre-et-Loire, France—Pionies.

JAS. M. THORBURN & Co., 15, John Street, New York, U.S.A.—American Tree and Shrub Seeds.

WM. PAUL & SON, Paul's Nurseries, Waltham Cross, Herts—Bulbs and Winter Flowers.

JAS. DICKSON & SONS, 32, Hanover Street, Edinburgh—Dutch Flower Roots.

COOPER, TABER & Co. (Limited), 90, Southwark Street, London, S.E.—

JAS. CARTER & Co., 237 and 238, High Holborn, London, W.C.—Bulbs.

COMMUNICATIONS RECEIVED. — *C. N.*, Antibes. — *W. F.*, Jamaica. — *R. A.*, Natal. — *Sir T. L.*, Dobbie & Co. — *W. E. G.*, R. V. & Son (thanks, not uncommon). — *H. H. D'O.* — *J. H.* — *C. S.*, Harvard U. — *C. N.* — *J. H. H.*, Trinidad. — *J. R.*, Menabilly. — *C. L.*, Erfurt. — *G. D. H. V.* — *G. P. C.* — *W. D.* — *W. W.* — *J. W.* — *J. W. Wood*, Natal. — *W. R.* — *L. L.*, Brussels. — *C. B. P.* — *A. F. B.* — *E. Jenkins*. — *J. S.* — *A. D.* — *H. W. W.* — *G. P. T. C.*, Fulham (thanks). — *J. G. B.* — *F. Bardet*. — *T. A.* — *J. C.* — *J. T.* — *W. B. H.* — *F. M.*

Correspondents sending plants or fruits to be named, or asking questions demanding time and research for their solution, must not expect to obtain an answer to their enquiries in the current week.

MARKETS.

COVENT GARDEN, August 9.

LARGE consignments of fruit to hand during the week, with prices firm, and in some instances advanced. *James Webber, Wholesale Apple Market.*

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Cherries, half-sieve...	2 0-5 0	Lemons, per case	12 0-21 0
Currents, blk., half-sieve	3 0-3 6	Melons, each	1 0-3 0
— Red, half-sieve...	2 0-3 0	Peaches, dozen	2 0-10 0
Grapes, per lb.	1 0-3 0	Pine-apples, Eng. lb.	2 0-3 0
		— St. Michael, each	2 0-5 0

VEGETABLES.—AVERAGE RETAIL PRICES.

	s. d. s. d.		s. d. s. d.
Artichokes, p. doz.	4 0-...	Mushrooms, punnet	1 0-1 6
— English, 100	3 6-6 0	Mustard and Cress, punnet	0 4-...
Beans, Kidney, lb.	0 4-...	Onions, per bunch	0 5-...
Beet, red, per dozen	1 0-2 0	Parley, per bunch	0 4-...
Carrots, per bunch	0 9-...	Potatoes, per cwt.	4 0-5 0
Cauliflowers, each	0 6-...	— kidney, per cwt.	4 0-5 0
Celery, per bundle	1 6-2 6	Shallots, per lb.	0 6-...
Cucumbers, each	0 9-1 0	Spinach, per bushel	4 0-...
Endive, per dozen	4 0-...	Tomatoes, per lb.	1 0-...
Green Mint, bunch	0 4-...	Turnips, per bunch,	new
Herbs, per bunch	0 4-...	— new	0 8-...
Leeks, per bunch	0 6-...	Vegt. Marrows, each	0 3-...
Lettuce, per dozen	1 6-...		

POTATOS.—Jerseys, unsaleable; English, 2s. 6d. per bushel.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Aralia Sieboldi, doz.	6 0-18 0	Ficus elastica, each	1 6-7 0
Balsams, per doz.	2 0-4 0	Fuchsias, doz.	3 0-8 0
Bouvardias, per dozen	9 0-12 0	Heliotropes, dozen	3 0-6 0
Calceolarias, dozen	3 0-6 0	Hydrangeas, dozen	9 0-18 0
Carnations, per doz.	6 0-18 0	Liliums, var., doz.	18 0-30 0
Cockscombs, per doz.	2 6-4 0	Lobelias, per dozen	3 0-6 0
Coleus, dozen	3 0-6 0	Marguerites, doz.	6 0-12 0
Crassula, per doz.	9 0-12 0	Mignonette, 12 pots	3 0-6 0
Cyperus, per dozen	4 0-12 0	Myrtles, 12 dozen	6 0-12 0
Dracena terminalis, per dozen	30 0-60 0	Palms in var., each	2 6-21 0
— viridis, per doz.	12 0-24 0	Pelargoniums, doz.	6 0-12 0
Eucalyptus, in var., per dozen	6 0-18 0	— Ivy-leaf, dozen	3 0-6 0
Evergreens, in var., per dozen	6 0-24 0	— scarlet, dozen	3 0-6 0
Ferns, in var., doz.	4 0-18 0	Rhodanthe, per doz.	4 0-6 0
Foliage plants, various, each	2 0-10 0	Scented Geranium, per dozen	3 0-6 0
		— Verbena, per doz.	4 0-6 0
		Zinnia, per dozen	4 0-6 0

BEDDING-OUT PLANTS.

Per dozen, 1s. to 2s.; per box, 1s. to 3s.

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Asters, 12 bunches...	4 0-6 0	Mignonette, 12 bun.	2 0-4 0
— French, per bun.	1 0-1 6	Panies, 12 bun.	1 0-2 0
Bouvardias, per bun.	0 6-1 0	Pelargoniums, 12 spr.	0 8-1 0
Carnations, 12 blms.	1 0-2 0	— scarlet, 12 spr.	0 3-0 6
— dozen bunches...	4 0-6 0	Pinks, 12 bun.	3 0-6 0
Chrysanthemums, annual, 12 bun.	1 0-3 0	Poppies, 12 bun.	4 0-6 0
Cornflower, 12 bun.	1 6-3 0	Primulas, double, 12 sprays	0 9-1 0
Delphiniums, 12 bun.	3 0-6 0	Pyrethrums, 12 bun.	2 0-4 0
Eucharis, per dozen	3 0-6 0	Rhodanthe, 12 bun.	4 0-6 0
Forget-me-nots, 12 bunches	2 0-4 0	Roses, Tea, per doz.	0 6-1 6
Gardenias, 12 blooms	1 6-4 0	— coloured, dozen.	2 0-4 0
Gladiolus, doz. sprays	0 8-1 6	— red, per dozen	0 6-1 0
Heliotropes, 12 spr.	0 6-1 0	— 12 bunches	2 0-6 0
Lavender, 12 bun.	3 0-4 6	— Safrano, dozen	0 9-1 6
Lilium longiflorum, 12 blooms	3 0-5 0	Moss, 12 bun.	4 0-12 0
— candidum, 12 bl.	0 6-1 6	Stephanotis, 12 spr.	2 0-4 0
Marguerites, 12 bun.	3 0-6 0	Sweet Peas, 12 bun.	2 0-4 0
		Sweet Sultan, 12 bun.	2 0-4 0
		Tuberose, 12 blms.	0 4-0 9

SEEDS.

LONDON: August 8.—Messrs. John Shaw & Sons, seed merchants, of 37, Mark Lane, E.C., report:—To-day's market thinly attended, with but little business doing. An exceedingly firm feeling, nevertheless, characterises the trade generally. This applies more particularly to white Cloverseed, Alsike, and Trefoil. In white there has been a fair trade doing at enhanced rates. Alsike and Trefoil also tend upwards. More money is asked for imported Italian. The new samples of French Trifolium are not liked. Mustard and Rapeseed move off slowly on former terms. Blue Peas realise last week's prices. In bird seeds there is no change.

FRUIT AND VEGETABLES.

SPITALFIELDS: August 8.—Buyers few and business slack, owing to holidays. Supplies of all kinds continue to be abundant. The following are the ruling quotations:—Cherries, 1s. 6d. to 5s. per half sieve; black Currants, 3s. to 3s. 3d. do.; red Currants 2s. to 2s. 6d. do.; white Currants, 2s. 6d. to 3s. 6d. do.; Gooseberries, 2s. to 3s. do.; Raspberries, 2d. to 4d. per 1 lb. punnet; ditto, 20s. per cwt.; Strawberries, 2s. to 3s. 6d. per peck; English Tomatoes, 2s. 6d. to 3s. 6d. per peck; foreign do., 1s. 2d. to 1s. 6d. per box; foreign Green Gages, 2s. to 3s. per bushel of about 18 lb.; Peas, 2s. to 2s. 3d. per bushel of about 24 lb.; Apples, 7s. per box; foreign Plums, 2s. 3d. to 3s. 3d. per flat; ditto, 2s. 6d. to 3s. 6d. per round basket; Vegetable Marrows, 1s. 6d. to 2s. 6d. per dozen; Peas, 1s. to 2s. 6d. per bushel; ditto, 2s. to 4s. 6d. per sack; Broad Beans, 1s. to 1s. 6d. per bushel; do., 2s. to 3s. per sack; Scarlet Runners, 6s. to 6s. 6d. per sieve; French do., 3s. 6d. to 4s. 6d. do.; Carrots, 1s. 9d. to 2s. per dozen bunches; Turnips, 2s. to 2s. 3d. do.; spring Onions, 1s. 3d. to 2s. do.; Mint, 1s. to 1s. 6d. do.; Parsley, 9d. to 1s. 3d. do.; Cabbages, 1s. to 3s. per tally; foreign Onions, 5s. to 7s. per cask of about 130 lb.; frame Cucumbers, 2s. to 3s. per dozen; common do., 9d. to 1s. 3d. do.; Cos Lettuces, 6d. per score of 22; Beetroots, 6d. to 8d. per dozen; Endive, 1s. to 1s. 6d. do.; English Walnuts (for pickling), 1s. 6d. per half sieve; Mangels, 15s. to 22s. per ton.

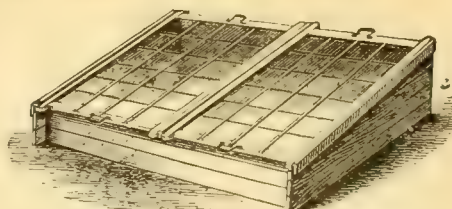
STRATFORD: August 7.—Both trade and supply have been good during the past week. Quotations:—Carrots, household, 2s. 6d. to 3s. 6d. per dozen bunches; Mangels, 16s. to 20s. per ton; Watercress, 6d. to 8d. per dozen bunches; Gooseberries, 4s. to 5s. per flat; Currants, black, 4s. to 4s. 6d. per half sieve; do., red, 3s. 6d. to 4s. do.; Green Gages, 2s. 6d. to 4s. 6d. per box; Cucumbers, 1s. 6d. to 4s. per dozen; Cherries, 2s. 6d. to 4s. 6d. per half sieve; Peas, 3s. to 5s. per bag.

POTATOS.

BOROUGH AND SPITALFIELDS: August 7.—Supplies are adequate to demand, which is dull. Quotations. —Shaws, 60s. to 70s.; Hebrons, 70s. to 90s.; kidneys, 80s. to 90s. per ton.

SPITALFIELDS: August 8.—Quotations:—English Regents, 3s. to 4s.; do. kidneys, 3s. to 4s.; Beauty of Hebron, 2s. to 3s. 6d.; Early Rose, 2s. to 3s.; Jersey kidneys, 4s. to 5s.; do. flukes, 3s. 6d. to 4s. 9d.; St. Malo rounds, 3s. to 3s. 3d.; do. flukes, 3s. to 5s.; Lisbon rounds, 3s. 6d. to 4s.; Cherbourg do., 3s. to 3s. 6d.; do. flukes, 4s. 6d. to 5s. 6d. per cwt.

STRATFORD: August 7.—Quotations:—English kidneys, 80s. to 100s.; Beauty of Hebron, 60s. to 80s.; Roses, 55s. to 75s. per ton.



PORTABLE CUCUMBER FRAMES.

R. HALLIDAY AND CO. desire to draw special attention to their Cucumber Frames, of which they always have a large stock, ready glazed and painted. They are made of the best materials, and can be put together and taken apart in a few minutes by any one. Prices delivered to any station in England:—
2-light frame, 8 feet by 6 feet { Packing 3 10 0
3-light frame, 12 feet by 6 feet { Cases free 5 5 0
6-light frame, 24 feet by 6 feet { 10 0 0
The glass is nailed and puttied in. Lights and framing for brick pits at proportionately low prices.

R. HALLIDAY & CO.,

Hothouse Builders and Engineers,
ROYAL HORTICULTURAL WORKS, MIDDLETON,
MANCHESTER.

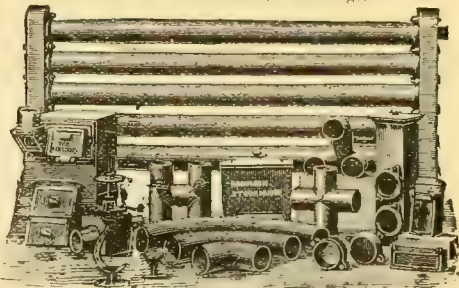
London Agent, Mr. H. SKELTON, Seedsman, &c.,
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A large quantity of all descriptions and sizes in stock, at the lowest possible prices.

NICHOLLS & CLARKE,
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Dennis Park Ironworks, Stourbridge.



4-in. Expansion Joint Hot-water Pipes, 9 feet long, 4s. 3d. each;
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Illustrated revised price List on application, free.

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GLASS BELLS, &c.
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PROTECTION FOR FRUIT AND FLOWERS.

GARDEN NETTING, 2 yards wide, 1½d. per 100 yards, 10s.; ditto, 4 yards wide, 3d., or per 100 yards, 20s.
SCRIM CANVAS, 1 yard wide, 3d.; 1½ yard, 4½d.; and 2 yards, 6d. per yard.
TIFFANY, 38 inches wide, in 20 yard pieces, 3s. 6d. per piece.
SHADING BLINDS made up any size.
RICK CLOTHS, TARPOLINS, Corn and Potato SACKS, FLAGS, TENTS, &c., for Sale or Hire.
TOBACCO PAPER, RAFFIA, and Garden MATS of all kinds.

ROCKERIES, FERNERIES,

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Patronised by 16,000 of the Nobility, Gentry, and Clergy, for all kinds of

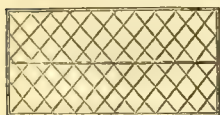
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1 Cwt., and Oil Mixture, Free to all Stations. Liquid Non-Poisonous Paints for Inside of Conservatories, &c. Prices, Patterns, and Testimonials, Post-free.

LA BELLE SAUVAGE YARD, LUDGATE HILL, E.C.
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THOMAS'S TRAINING TRELLISES.

No. 81. GALVANISED AFTER MADE.



For training Peas instead of sticks. Training plants to walls, &c., in PANELS.

6 feet by 3 feet ... 2s. each.
6 feet by 4 feet ... 3s. each.
6 feet by 5 feet ... 4s. each.
6 feet by 6 feet ... 5s. each.

Made any size to order at following prices:—

6 in. 4 in. 3 in. 2 in. 1½ in. mesh.
2d. 3d. 3½d. 4d. 4½d. per foot super.

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J. J. THOMAS & CO.,
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STOCK	SIZES	GLASS
14x12	20x15	GLASS
16x12	20x16	
18x12	22x16	
20x12	24x16	
16x14	20x18	
18x14	22x18	
20x14	24x18	

21-oz. Foreign of the above sizes, in 100 and 200 feet boxes, 3rds and 4ths qualities, always kept in stock.

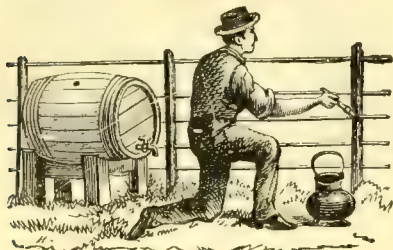
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English Glass, cut to buyer's sizes, at lowest prices, including free delivery in the country in quantities.

GEORGE FARMILOE & SONS,
34, St. John Street, West Smithfield, London, E.C.
Stock List and Prices on application. Price List of Colours, Varnishes, Designs of Stained & Leaded Glass. Quote Chronicle.

HILL & SMITH'S BLACK VARNISH

for Preserving Ironwork, Wood, or Stone.



(Registered Trade Mark.)

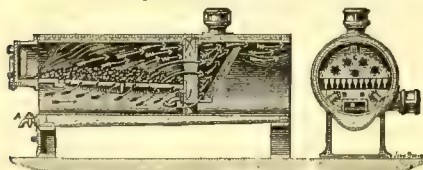
An excellent substitute for oil paint, at one-third the cost. Used in all London Parks, at Windsor, and Kew Gardens, and on every important estate in the Kingdom. Has stood the test of forty years' trial. Requires no mixing; can be applied cold by any ordinary labourer.

Price 1s. 6d. per gallon at the manufactory, or carriage-paid to any railway station, 1s. 8d. per gallon in casks of 36, 20, or 10 gallons.

CAUTION.—Every Cask bears the above Registered Trade Mark. Beware of cheap imitations.

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Greatly Reduced in Price.



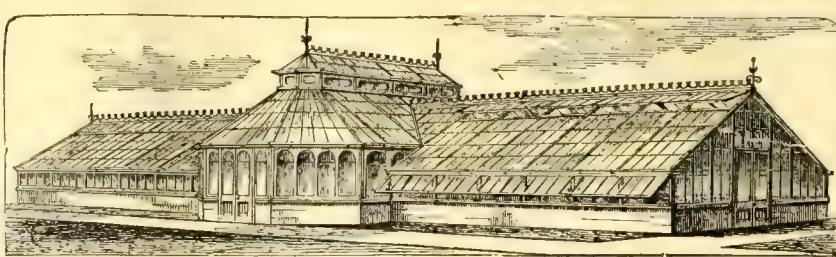
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Is the BEST, CHEAPEST, and MOST ECONOMICAL BOILER EXTANT for all heating purposes, and is only supplied by the PATENTEE. All other kinds of BOILERS, PIPES, VALVES, HEATING and VENTILATING APPARATUS manufactured by

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CASTLE HILL WORKS, NEWCASTLE,
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Full Particulars on application.

Five 1st Prize Medals recently awarded in open competition.



Five 1st Prize Medals recently awarded in open competition.

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Vineries, Stoves, Greenhouses, Peach Houses, Forcing Houses, &c., constructed on our improved plan, are the perfection of growing houses, and for practical utility, economy, and durability cannot be equalled. We only do one class of work, and that THE VERY BEST.

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Plans, Estimates and Catalogues free. Customers waited on in any part of the Kingdom.

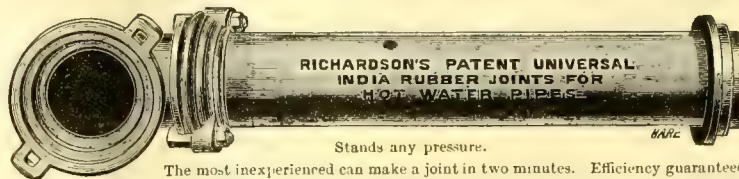
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HOT-WATER PIPES.



Stands any pressure.

The most inexperienced can make a joint in two minutes. Efficiency guaranteed.

RICHARDSON'S PATENT UNIVERSAL INDIA-RUBBER JOINT HOT-WATER PIPE SYSTEM
is the cheapest and most durable joint in use. Never leaks.

IMPROVED HEATING COILS, Ornamental and Plain, and COIL CASES, Garden ROLLERS, VASES, FOUNTAINS, SEATS, &c.

Manufactured by **THE MEADOW FOUNDRY CO. (Limited), MANSFIELD.**See *Gardeners' Chronicle*, May 12.

For Destroying Weeds on Garden Walks, Carriage Drives, Stable Yards, &c. Saves more than twice its cost in labour. No Smell. No Disturbance of the Gravel.

Used in the CRYSTAL PALACE GARDENS, the ROYAL GARDENS, KEW, and other Public and Private Gardens. Mr. W. G. HEAD, Superintendent of the Crystal Palace Gardens, says:—"We were so satisfied with your Weed Killer and its price, that we have used it absolutely. I have every confidence in recommending it."

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T. HEWITT & Co., Nurserymen, Solihull and Birmingham, say:—"We find it excellent."

Price per Gallon, 2s. (tin included); 5 Gallon lots, 1s. 8d. per Gallon; 10 to 20-Gallon lots, 1s. 4d. per Gallon.

Carriage paid on 10 gals. and upwards. Used in the proportion of 1 gal. to 25 gals. of water. Sole Proprietors and Manufacturers—

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Per doz.
Children's... 1s. 2d.
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Per doz.
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Ladies' ... 2s. 11½d.
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FISH NAPKINS, 2s. 11d. per dozen. Dinner Napkins, 5s. 6d. per dozen. Table Cloths, 2 yards square, 2s. 11d.; 2½ yards by 3 yards, 5s. 11d. each. Kitchen Table Cloths, 11½d. each. Strong Huckaback Towels, 4s. 6d. per dozen. Monograms, Initials, &c., woven and embroidered.

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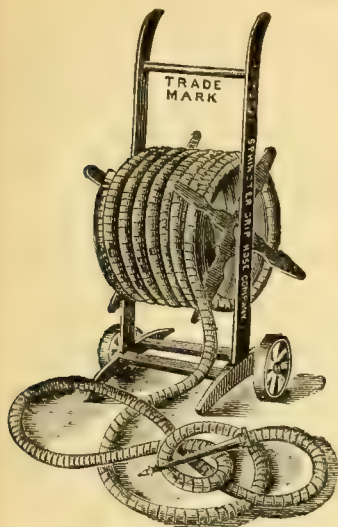
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Unequalled for Durability, Flexibility, and Lightness. Practically Indestructible. Will wear out ten ordinary Hoses, and withstand unlimited pressure.

IT CANNOT KINK OR COLLAPSE. IN UNIVERSAL DEMAND. RAPIDLY REPLACING ALL OTHER HOSES.

A Company, as above, having been formed to work the SPHINCTER GRIP ARMoured HOSE PATENTS, this Hose is now offered to the public at the undermentioned unprecedentedly low prices.

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BEST QUALITY RED OR BLACK RUBBER.

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3-inch.	3-inch.	3-inch.	3-inch.	1-inch.	in diam.
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Existing Hoses of any description now in use may be armoured at a small cost, thereby adding considerably to their strength and durability. (Special tariff on application.)

CAUTION.—The Patents under which the Sphincter Grip Hose is armoured are now the exclusive property of this Company, and the Public are cautioned against purchasing worthless and spurious imitations, as infringements will be promptly prosecuted.

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PRICE LIST. HOSE FITTINGS.

	½-in.	¾-in.	1-in.	1½-in.	2-in.
Hose Screws, per pair ...	3/-	3 6	4/-	4 6	5/-
Branch Pipe, with Tap, Jet, and Rose complete	5/6	7/-	9/-	10 6	12/-
High-pressure Screw-down Tap for Iron or Head Pipe	5/-	6 6	8/-	—	10/-

If Screwed Nose, extra... .. -/9 1/3 2/- — 3/-

Fittings made to any gauge without extra charge.

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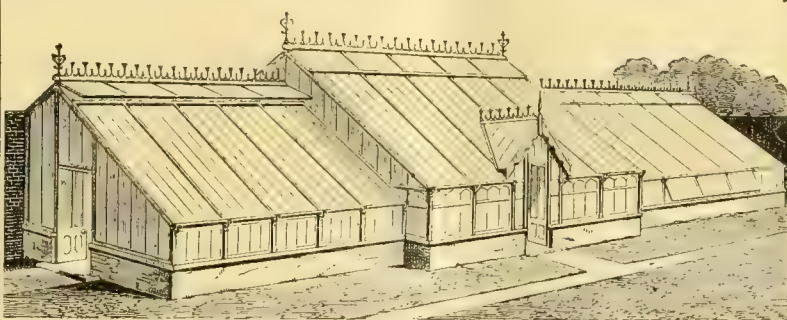
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Best Wood. 21 oz. English Glass.
Painted 3 Coats. Currence Paid to any
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All sizes in stock.
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1888.

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G. C.,
Aug. 11, 1888

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9 " .. 0 5 6	20 " .. 0 11 0
10 " .. 0 6 0	21 " .. 0 11 6
11 " .. 0 6 6	22 " .. 0 12 0
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13 " .. 0 7 6	24 " .. 0 13 0
14 " .. 0 8 0	25 " .. 0 13 6

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dener to Miss THOMSON, Stanton House, Stanton
St. John, near Oxford.

MR. CHAS. S. THOMPSON, late Head Gardener
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24 × 10	..	18	15	0
28 × 10	..	21	10	0
32 × 10	..	24	8	0
36 × 10	..	27	5	0
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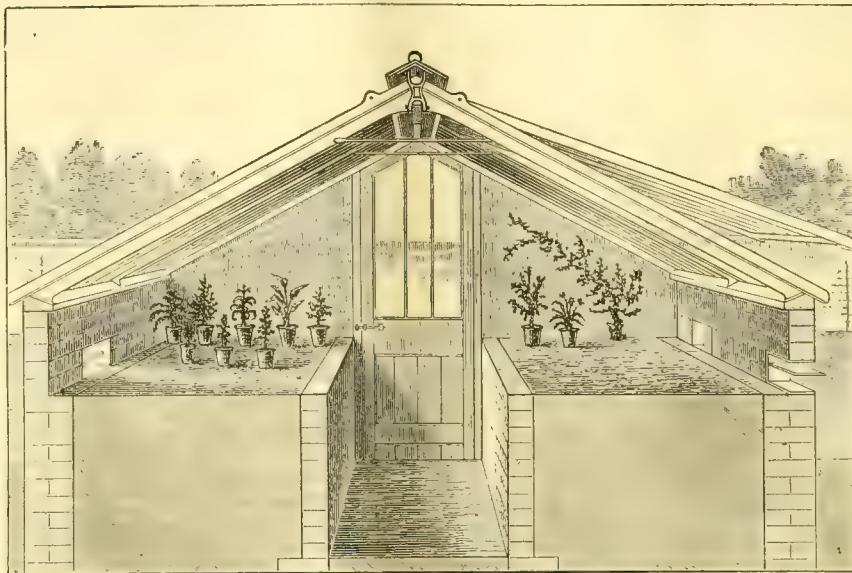
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16 × 12	..	17	10	0
20 × 12	..	20	12	0
24 × 12	..	24	5	0
28 × 12	..	27	15	0
32 × 12	..	31	5	0
36 × 12	..	34	15	0
40 × 12	..	38	0	0
44 × 12	..	41	15	0
48 × 12	..	45	5	0
52 × 12	..	48	10	0

TESTIMONIAL.

From GEORGE HIGGINS,
 Esq., Eastlands, Dul-
 wich, S.E.:—

"DEAR SIR,—

"The Frames arrived in perfect order. Now they are placed in position I am very pleased with them. I would never buy the old kind of light again; although yours are a little dearer at the first, they must be far cheaper in the end. No doubt before the summer is over I shall want more."



SPAN FRAME, 12 ft. wide, for fixing on Brick Walls.
 These form excellent Cucumber or Melon Houses.

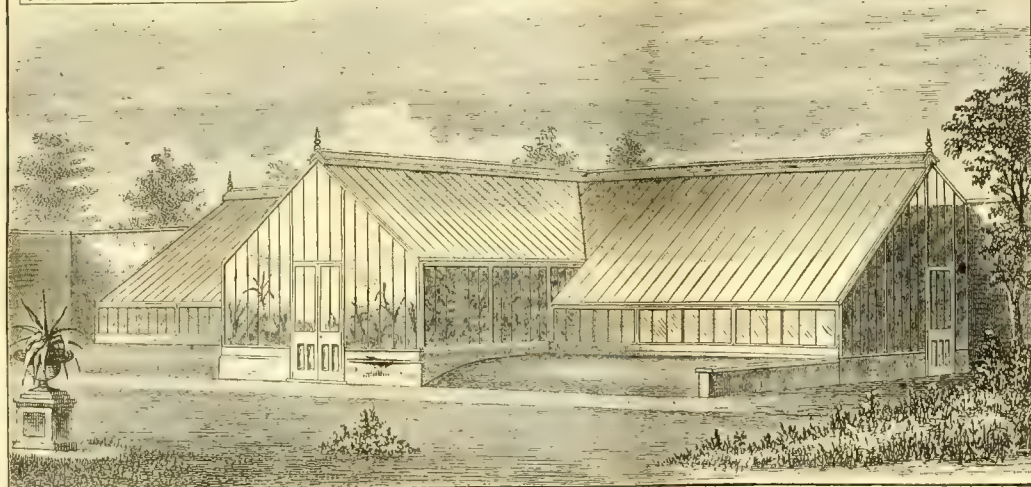
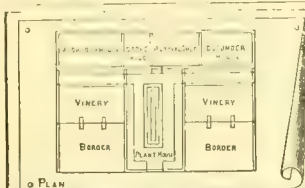
TESTIMONIAL.

From H. STUART MUR-
 RAY, Esq., Efford
 Cottage, Lymington,
 Hants.

"DEAR SIR,—

"The House duly arrived, and was fixed with ease. Not a bolt or screw missing, and everything fitting perfectly."

"I am extremely pleased with it, and shall have pleasure in recommending you to my friends."



RANGE of VINERIES with centre PLANT HOUSE, &c.

FOSTER & PEARSON, BEESTON, NOTTS.

IMPORTANT.

Only the very best materials and workmanship are used in our Houses. The timber is carefully selected and dried in our own sheds 2 years before use. The so-called cheap Houses are in reality much dearer, as they are frequently decayed within 5 or 6 years of erection.

The GARDENERS' CHRONICLE

ESTABLISHED 1841.

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Advertisers are specially requested to note, that, under no circumstances whatever, can any particular position be guaranteed for advertisements occupying less space than an entire column.

CRYSTAL PALACE.

GREAT EXHIBITION OF FRUIT AND GRAND NATIONAL DAHLIA SHOW, FRIDAY and SATURDAY, September 7 and 8. Schedules and Forms of Entry may be obtained on application to Mr. W. G. HEAD, Superintendent Gardens Department, Crystal Palace, S.E.

NEWCASTLE-UPON-TYNE

GREAT AUTUMN FLOWER SHOW. AUGUST 22, 23, and 24, 1888. For Schedules, &c., apply to JAS. J. GILLESPIE, Secretary.

BATH AUTUMN SHOW, held at time of visit

of "The British Association," WEDNESDAY and THURSDAY, September 5 and 6. Amongst the Prizes offered are for—12 Foliage Plants, 1st, £6; 2nd, £4; 3rd, £2. 12 Store or Greenhouse Plants, 1st, £12; 2nd, £8; 3rd, £4. 8 Dishes of Fruit, 1st, £5; 2nd, £3; 3rd, £2. 12 Bunches of Grapes, six varieties, 1st, £10; 2nd, £6; 3rd, £3. And 7 other Classes for Grapes in varieties. Prizes in proportion. Special Classes for Hybrid Orchids, Ferns, and other Plants. Entries Close September 1. For Schedule, apply to BENJ. PEARSON, Sec.

14, Milson Street, Bath.

FERNS for Potting On, good stuff, in thumbs, of following:—PTERIS ARGYREA, PTERIS CRETICA, ALBO LINEATA, ASPLENIUMS of sorts, ADIANTUM CUNEATUM, LOMARIA GIBBA. 12s. 6d. per 100, £8 per 1000. Cash with order. H. STROUD and SONS, 182, Green Lanes, Finsbury Park, N. Telegraphic Address—"FERNERY, LONDON."

BOUVARDIA, PRESIDENT CLEVELAND, surpasses all other scarlet varieties. Strong plants in 48's, or smaller plants for Parcel Post. Price on application. H. B. MAY, Dyson's Lane Nursery, Upper Edmonton.

ROMAN HYACINTHS. Liliun candidum, Narcissus, Paper White and Double Roman, Anemone fulgens, &c.—Bulbs in splendid condition, from Louis Bremond fils, Ollioules. Inspection invited, or samples sent on application to WILLIAM DENMAN, 7, Catherine Street, Covent Garden, W.C. See large Advertisement, August 11, page 149.

SUTTON'S BULB CATALOGUE: A beautifully illustrated with numerous Engravings and a handsome Coloured Plate, representing the leading Bulbous Flowers, and containing accurate descriptions of the choicest Narcissus, together with particulars of the best varieties of Hyacinths, Tulips, &c., for bedding. Ready shortly: Post-free to intending Customers.

SUTTON AND SONS, The Queen's Seedsmen, READING.

The Best Present for a Gardener.
VINES and VINE CULTURE. The most complete and exhaustive Treatise on Grapes and their Culture ever published.

Price 5s., post-free 5s. 6d.
A. F. BARRON, Royal Horticultural Society, Chiswick.

CHEAP BULBS.—We are this season offering First-class Bulbs at Lower Prices than have ever been placed before the public. LIST, Free, now ready. J. R. PEARSON and SONS, Chilwell, Notts.

MR. DODWELL'S GRAND CARNATIONS.—The finest grown. 5000 Unbloomed Seedlings, warranted of the highest parentage; unrivalled whether for bedding or forcing for spring flowering. 3s. 6d. per doz.; 21s. per 100. Special terms for quantities. Particulars on application. The Cottage, Stanley Road, Oxford.

"NOW IN BLOOM," in great perfection, large quantities, "MRS. REYNOLDS HOLE," the most beautiful of all BORDER CARNATIONS. Inspection invited, or blooms gratis and post-free to likely purchasers and admirers. DICKSONS (Limited) Nurseries, CHESTER. Telegraph and Postal Address—"DICKSONS, CHESTER."

PASTUPLANTA, the best Artificial Manure. It enriches the soil with the fertilisers drawn from it by plants; no unpleasant smell; admirably adapted for all pot plants. In bags: 112 lb., 19s.; 56 lb., 11s. 3d.; 28 lb., 6s. 9d.; 14 lb., 4s.; 7 lb., 2s. 3d. In tins, 1s. each. Sole Manufacturers, PHILIP HARRIS and CO. (Limited), 9, Bull Ring, Birmingham.

MESSRS. GREGORY and EVANS, NURSERYMEN, Sidcup, and 285, 286, 287, 288, Flower Market, Covent Garden, W.C., are open to RECEIVE CONSIGNMENTS of CHOICE CUT FLOWERS in any quantity for their Commission Department. Boxes and Labels supplied. Telegraph Address—"COMMISSION, SIDCUP."

SQUELCH and BARNHAM, North Row, Covent Garden, W.C., are OPEN TO DISPOSE of any quantity of MUSCATS and BLACK GRAPES, TOMATOS, CUCUMBERS, FRENCH BEANS, STRAWBERRIES, CHOICE FLOWERS, &c. Highest Market Prices obtained. Account Sales daily; Cheques weekly or as preferred by Sender. Baskets and Labels supplied. References given.

MELONS, NECTARINES, GRAPES, &c.—Highest Market Prices guaranteed for really good and well packed fruit of the above. HENRY RIDES (late Wise & Rides), Covent Garden, W.C.

WANTED, Specimens and Half-specimens of KENTIAS FOSTERIANA and BELMOREANA.—State particulars and prices to W. WEEKS, Nurseryman, 440, Fulham Road, S.W.

WANTED, Large or Small Quantities of PTERIS TREMULA SPORES. MARSHALL BROS. and CO., Barnham, Bognor.

WANTED, a large quantity of BEDDING GERANIUM CUTTINGS, leading sorts, such as Henry Jacoby, John Gibbons, Jermie Dods, &c. State quantity, price, &c., to HARRY BARKER, Horninglow Cross Nurseries, Burton-on-Trent.

WANTED, Runner Plants of STRAWBERRIES Noble, King of the Earlies, Waterloo, and Captain. State quantity and lowest prices. Also ECHEVERIA FARINOSA, FUCHSIA Minnie Banks, Annie, and England's Glory: Bedding GERANIUM Cuttings. H. CANNELL and SONS, Swanley, Kent.

FERNs—FERNs—FERNs.—To the Trade, Cheap.—PTERIS TREMULA, ready for 48's, 12s. and 14s. per 100; small do., 10s.; PTERIS CRETICA, PTERIS MAGNIFICA CRISTATA, 10s. and 12s. per 100. On rail free, cash with order. 40,000 of the above in 80's and thumbs, price per 1000 on application.—J. E. SMITH, Fern Nurseries, 140, Loughborough Road, Brixton, S.W.

150 ORCHIDS for SALE, consisting of large plants of Lelias, Cattleyas, Oncidiums, Cypripediums, Dendrobium, Vandas, Aerides, 13 Cuslogyne cristata, in No 4 pots, &c.—To be seen at GEORGE PURNELL'S Lion Nursery, Bexley Heath, Kent, who is giving up growing them.

Palms, clean and healthy.
WILLIAM ICETON has a very extensive stock of all the leading kinds, in fine condition; 20 houses being devoted to their growth, many being fit for exhibition of the following varieties:—Areca lutea, Cocos flexuosa and Weddelliana, Kentias of all kinds; Scaevola elegans, Latania borbonica, Phoenix reclinata, rupicola; also a very large assortment of Palms in 60's and 48's for table. Inspection invited.—Putney Park Lane, S.W.; and 129 and 130, Flower Market, Covent Garden, W.C.

To the Trade.
PTERIS TREMULA.—Special Cheap Offer.—Splendid stuff, in 48's, at 5s. per dozen. No charge for packing, &c.
H. B. MAY, Dyson's Lane Nursery, Upper Edmonton.

PRIMULAS—PRIMULAS—PRIMULAS.—Nineteenth year of distribution, Williams' superb strain, 1s. 6d. per dozen, 10s. per 100. CINERARIAS and CALCEOLARIAS, same price. Carriage free for cash with order. JOHN STEVENS, The Nurseries, Coventry.

Now in Full Bloom.
BEGONIAS.—Awarded Four Gold Medals. Unequalled as a floral display. Visitors are cordially invited; free admission. Frequent trains from the City and West End to Catford Bridge and Forest Hill Stations. JOHN LAING and SONS, Stanstead Park, Forest Hill, S.E.

Hyacinths, Tulips, Crocus, Lilies, &c.
C. G. VAN TUBERGEN, Jun., Haarlem, Holland.—Wholesale CATALOGUE now ready, and may be had free on application to Messrs. R. SILBERRAD and SON, 25, Savage Gardens, Crutched Friars, London, E.C.

LAXTON'S NEW STRAWBERRIES.—Four First-Class Certificates from the Royal Horticultural Society. The earliest, largest, finest, and latest high-quality sorts, and the most profitable for Market or Private Growers, as they make the highest prices in Covent Garden. Send for Descriptive Priced LISTS, with Press and other Testimonials, to T. LAXTON, Bedford.

Kent—The Garden of England.
STRAWBERRIES true to Name.
GEO BUNYARD and CO.'S New LIST, embracing, Noble, Waterloo, &c., and the 30 best kind, may now be had on application. Splendid Plants in little pots, and Runners. The Old Nurseries, Maidstone.

STRAWBERRIES.—Apply for Descriptive CATALOGUE, Post-free. THOMAS RIVERS and SON, Sawbridgeworth, Herts.

SIMPLE INSTRUCTIONS by which an abundance can be insured of delicious MUSHROOMS. See Seed LIST, Free. RICHARD SMITH and CO., Seed Merchants and Nurserymen, Worcester.

SULPHIDE of POTASSIUM (Harris).—A certain cure for Mildew on Plants, Red Spider, Aphids, &c. Enough to make 32 gallons of solution, free for 1s. 6d. The only kind to use is "Harris's" specially prepared Sulphide of Potassium. Sole Manufacturers:—PHILIP HARRIS and CO. (Limited), 9, Bull Ring, Birmingham.

W. H. LASCELLES and CO., HORTICULTURAL BUILDERS, 121, BUNHILL ROW, LONDON, E.C. Plants and Estimates Free. See large Advertisement, August 4, page 121.

SALES BY AUCTION.

Monday, Thursday and Saturday next.
DUTCH BULBS.—SPECIAL TRADE SALES.
MESSRS. PROTHEROE AND MORRIS will **SELL** by AUCTION, at the Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on **MONDAY, THURSDAY and SATURDAY NEXT**, August 20, 23 and 25, at half-past 11 o'clock precisely each day, extensive Consignments of first-class **HYACINTHS, TULIPS, CROCUS, NARCISSUS** and other **BULBS**, from Holland, in excellent quality, and specially lotted to suit the Trade and other Large Buyers.

On view morning of Sale, and Catalogues had.

Friday next.
 20 Cases of **LÆLIA PURPURATA** in fine condition, including numerous very large masses, and also a quantity of **DENDROBIUMS** from Burmah, received direct for Unreserved Sale.

Also a choice assortment of **ESTABLISHED ORCHIDS**, many in Flower and Bud.

MESSRS. PROTHEROE AND MORRIS will include the above in their **SALE** by AUCTION, on **FRIDAY NEXT**, August 24.

On view morning of Sale, and Catalogues had.

Friday Next—Imported Orchids.
MESSRS. PROTHEROE AND MORRIS are instructed by Mr. F. Sander to **SELL** by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on **FRIDAY NEXT**, August 24, at half-past 12 o'clock precisely, an importation of **CATTLEYA HARRISONIANA**, received in very good order, collected in a new district, and having many fine varieties of forms among them; **CATTLEYA ELDERADO**, in splendid condition, of which many species will be found in this lot; **LYCASTE SKINNERI**, in fine order, of which we expect many white ones to turn out; **CATTLEYA CITRINA**, in good condition, and in nice pieces; **ODONTOGLOSSUM CITROSUM**, **O. INSELYI**, **LEOPARDINUM**, **ONCIDIUM NECROPOGON**, **O. CRISPUM**, &c.

On view morning of Sale, and Catalogues had.

Tuesday, August 28.
ORCHIDS IN FLOWER.
MESSRS. PROTHEROE AND MORRIS desire to announce that their **NEXT SPECIAL SALE** of **ORCHIDS IN FLOWER** will take place as above, for which they will be glad to **RECEIVE NOTICE OF ENTRIES** as soon as possible.

Stamford Hill, N.
EXPIRATION OF LEASE.—CLEARANCE SALE.
MESSRS. PROTHEROE AND MORRIS will **SELL** by AUCTION, on the Premises, the Nursery, High Road, Stamford Hill, near Stoke Newington Railway Station, on **TUESDAY**, August 28, at 1 o'clock, without reserve, by order of Mr. W. Chitty, the stock of well-grown **GREENHOUSE PLANTS**, 1000 **FERNs** of sorts, 100 **White AZALEAs**, 1000 **CHRYSANTHEMUMS**, 2000 **IVIES** in pots, &c.

May be viewed one week prior to the Sale. Catalogues may be had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, London, E.C.; and Leytonstone, E.

Belsfield, Windermere.
IMPORTANT CLEARANCE SALE, by order of the Executors of the late H. W. Schneider, Esq., without reserve.
MESSRS. PROTHEROE AND MORRIS will **SELL** by AUCTION, on the Premises, Belsfield, Bowness-on-Windermere, about 1½ mile from the Windermere Station, on **WEDNESDAY and THURSDAY**, August 29 and 30, at 12 o'clock precisely each day, the whole of the well-known collection of **STOVE and GREENHOUSE PLANTS**, including many large and handsome specimen **Crotons**, **Camellias** and **Azaleas**, 100 large **Eucharis** in splendid condition, handsome **Palms** and **Ferns**, a few choice **Orchids**, **Fruiting and Succession Pines**, a considerable number of **Table and Decorative Plants**, together with the erections of 4 span-roof Greenhouses and hot-water piping.

May be viewed the day prior to the Sale. Catalogues had of Mr. NICOL, the Head Gardener, on the Premises, and of the Auctioneers and Estate Agents, 67 and 68, Cheapside, London, E.C., and Leytonstone.

N.B.—The very eligible **FREEHOLD ESTATE** of about 9 acres, with noble Mansion and extensive Stabling, delightfully situated on the borders of the Estate, is **FOR SALE**, with possession.

Kingston-on-Thames.
 By order of the Executors of the late Mr. Thomas Jackson.
IMPORTANT SALE of VALUABLE FREEHOLD and LEASEHOLD PROPERTIES.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions to **SELL** by AUCTION, at the Mart, Tokenhouse Yard, London, E.C., on **THURSDAY**, August 30, at 2 o'clock precisely (first in one lot, and if not thus sold, then in separate lots), the **VALUABLE FREEHOLD ESTATE** known as the Kingston Nursery, Kingston, Surrey, having important building frontages to Fife Road and Clarence Street of 600 feet, and containing an area of about 2 acres, with the whole of the Trade Buildings, comprising 20 Greenhouses, all heated by hot-water piping, Counting-house, Stables, and Sheds. The Goodwill of the old-established Nursery and Seed Business, will be included in this lot; the substantially-built Freehold Detached Residence adjoining, containing 8 Bedrooms, fitted Bath-room, 3 Reception-rooms, Kitchen, and offices.

For **SALE**, with vacant possession, also the desirable **FREEHOLD HOUSE**, double fronted Shop and Premises, No. 13, Thames Street, Kingston, with Stabling and two Cottages in the rear; together with the several Leasehold Nurseries known as the Kingston Hill Nursery, containing an area of 12 acres 3 roods 10 perches; the Nursery in Park Road, Norbiton, area 10 acres; and the Long Ditton Nursery, Long Ditton, area 15 acres 0 roods 13 perches. The Purchaser or Purchasers will have the option of taking the Stock in the respective lots at a valuation to be made in the usual way; but if not thus taken, the vendors reserve the right of disposing of the same on the Premises by Auction or otherwise.

May be viewed. Particulars, Plan, and Conditions of Sale may be had at the various Nurseries; at the Mart, E.C.; of Mr. W. G. SUDBURY, Estate Agent, Market Place, New Malden; of G. C. SHERRARD, Esq., Solicitor, 26, Lincoln's Inn Fields, W.C.; and Kingston-on-Thames; or of the Auctioneers, Estate Agents, and Surveyors, 67 and 68, Cheapside, London, E.C., and Leytonstone.

The Ascot Nurseries, Berks.
 (Opposite the Racecourse, and about 15 minutes' walk from the Railway Station.)

Important to Gentlemen, Nurserymen, and Others, desirous of securing one of the most valuable and celebrated **NURSERIES** in the Trade, with all the thriving **STOCK**, as a going concern, in one Lot, for **SALE**, by order of the owner, who is relinquishing the business in consequence of ill-health.

MESSRS. PROTHEROE AND MORRIS are instructed to **SELL** by AUCTION, at the Mart, Tokenhouse Yard, London, E.C., on **FRIDAY**, September 7, at 2 o'clock P.M. punctually, in one Lot, the valuable long **LEASEHOLD ESTATE** distinguished as the **ROYAL NURSERIES**, Ascot, together with the Goodwill of the old-established Nursery Business so successfully carried on by the late Mr. John Standish and the present Proprietor. The Nursery contains an area of about 23 Acres, cropped with a General Assortment of Nursery Stock; also 36 Greenhouses, containing a total superficial area of about 44,000 feet, heated by about 10,000 feet of hot-water piping, and numerous Pits all stocked with an extensive collection of Hard and Soft-wooded Greenhouse and Stove Plants. The Leasehold Residence, containing 10 Rooms, 3 well-built Cottages, and suitable Trade Buildings for carrying on a large Business.

May be viewed prior to the Sale. Particulars, Plans, and Conditions of Sale may be obtained on the Premises; at the Mart, E.C.; of Messrs. MACNELL, LATTON, and GODLEE, Solicitors, 21, Cannon Street, E.C.; and of the Auctioneers, Surveyors, and Estate Agents, 67 and 68, Cheapside, London, E.C.

Swanley Junction, Kent.
GREAT UNRESERVED SALE of immense quantities of unusually well grown **GREENHOUSE PLANTS**.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. P. Ladds to **SELL** by AUCTION, on the Premises, The Nurseries, Swanley Junction, Kent (adjoining the Swanley Junction Railway Station), on **THURSDAY**, September 13, at 11 o'clock punctually in consequence of the unusually large number of lots, immense quantities of **GREENHOUSE PLANTS**,

including the following:—
 24,000 winter flowering Heaths
 20,000 Genistas
 6000 Solanums
 12,000 winter-flowering Carnations
 7000 Adiantum Cuneatum
 10,000 Tea Roses (all best varieties)
 1000 Clematis Jackmanni
 2000 Crotons
 1000 Palms
 1000 Dracenas
 5000 Zonal Geraniums
 Queen of Whites improved
 2000 Ferns in variety
 300 specimen Grevilleas
 Quantity of small Heaths
 600 White Primulas
 Variety of other stock.

The Stock may now be viewed. Catalogues had of Mr. P. LADDS, on the premises, and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

Edmonton.
ANNUAL TRADE SALE of GREENHOUSE PLANTS.
MESSRS. PROTHEROE AND MORRIS are instructed by Mr. H. B. May to sell by auction on the premises the Dyson's Lane Nursery, Upper Edmonton, on **MONDAY**, September 17, thousands of **GREENHOUSE PLANTS**, &c.
 Fuller particulars will appear in future advertisements.

Lea, Kent, S.E.
GREAT ANNUAL TRADE SALE, to commence punctually at 11 o'clock, in consequence of the large number of lots.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. B. Maller & Sons, to **SELL** by AUCTION, on the Premises, The Burnt Ash Lane Nurseries, Lea, S.E., adjoining the Railway Station, on **TUESDAY**, September 18, at 11 o'clock punctually, without Reserve, 25,000 Winter-blooming **HEATHS**, beautifully grown, and remarkably well set with bloom buds, including:—
 15,000 **ERICA HYEMALIS**.
 5,000 " **GRACILIS**.
 Large quantities of **MELANTHERA**, **VENTRICOSA**, **PERSICUA**, **ERECTA**, **CAVENDISHII**, **CAFFRA**, and other kinds.

15,000 Small **ERICA HYEMALIS**, and
 5,000 Small **ERICA GRACILIS** for growing on.
 8,000 **SOLANUM CAPSICASTRUM**, in berry.
 4,000 **BOUYARDIAS**, single and double.
 2,000 **GENISTAS**, very fine.
CYCLAMEN PERSICUM.
 2,000 **ADIANTUM CUNEATUM**.
ALOPHILA AUSTRALIS, in 24 and 16-pots.
 3,000 **LOMARIA GIBBA**, true, compact variety, and other Ferns.
 500 **EPACRIS**, well grown.
BORONIA MEGASTIGMA.
 Quantity of extra strong **MARECHAL NIEL** and other **TEA ROSES**.
 4,000 **GREVILLEA ROBUSTA**.
PALMS.
FICUS ELASTICA.
GREENHOUS' PASSION FLOWERS.
POINSETTAS.
AMPELOPSIS VEITCHII.
STEPHANOTIS.
PLUMBAGO CAPENSIS FLORE ALBA.
 Large **GARDENIAS** for Cutting.
 500 **CLEMATIS JACKMANII**.

Beautifully Coloured **CROTONS**, &c.
 May be viewed. Catalogues may be had on the Premises, or of the Auctioneers and Valuers, 67 and 68, Cheapside, E.C., and Leytonstone, E.
N.B.—Messrs. P. & M. desire to call the attention of intending purchasers to the Stock to be offered as above. The Plants are remarkably well grown, fit for immediate Sale, and the whole will be found in an equally good condition as former years.

Lea Bridge Road, Leyton, E.
ANNUAL TRADE SALE of GREENHOUSE PLANTS.
MESSRS. PROTHEROE AND MORRIS are instructed by Mr. J. Fraser to **SELL** by AUCTION, on the Premises, the Lea Bridge Road Nurseries, Leyton, E., on **WEDNESDAY**, September 19, thousands of **GREENHOUSE PLANTS**, &c.
 Fuller particulars will appear in future Advertisements.

Enfield Highway.
ANNUAL TRADE SALE of GREENHOUSE PLANTS.
MESSRS. PROTHEROE AND MORRIS are instructed by Mr. John Maller to **SELL** by AUCTION, on the Premises, The Brimsdown Nursery, Enfield Highway, on **THURSDAY**, September 20, thousands of **GREENHOUSE PLANTS**, &c.
 Fuller particulars will appear in future advertisements.

NOTE.—There will also be a Sale as usual at The BRUNSWICK NURSERY, Tottenham, on **THURSDAY**, September 27.

Sidcup.
ANNUAL TRADE SALE of GREENHOUSE PLANTS.
MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. Gregory & Evans, to **SELL** by AUCTION, on the Premises, The Longlands Nursery, Sidcup, on **FRIDAY**, September 21, thousands of **GREENHOUSE PLANTS**, &c.
 Fuller particulars will appear in future advertisements.

Dutch Bulbs.—Trade Sales.
MR. J. C. STEVENS begs to announce that his **FIRST SALES of DUTCH BULBS** this season will take place at his Great Rooms, 38, King Street, Covent Garden, W.C., on **MONDAY, WEDNESDAY, and SATURDAY**, August 20, 22, and 25, at half-past 12 o'clock precisely each day, and will consist of extensive consignments of first-class Bulbs specially lotted to suit the Trade and other Large Buyers.
 On view mornings of Sales and Catalogues had.

Cheap Auction Sales.
MESSRS. SMALL and CO. will begin a series of popular **AUCTION SALES of first-class DUTCH BULBS** at 123, Fenchurch Street, City, E.C., on **TUESDAY**, August 28. These Sales will be continued on each Tuesday, Thursday, and Saturday, weekly. Further particulars in next issue.

R. E. begs to inform all who have applied and have not received answers that the NURSERY IS LET.

FOR DISPOSAL, a FLORIST'S BUSINESS.
 —Main Road, opposite Addison Road Station and Olympia. Long Lease, stock, fixtures. Good Jobbing connection. Everything, £200.
 9, Hammersmith Road, W.

To Gardeners and Florists.
TO BE SOLD, 5 Acres of **FREEHOLD** LAND, for erection of Glasshouses or for Gardening purposes; also some Smaller Allotments. Payment by instalments, if required.
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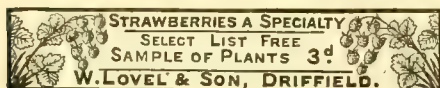


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TO THE

GARDENERS' CHRONICLE

FOR

Next Week, August 25,

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OF A

BANYAN TREE

in the Gardens of T. WEIR, Esq., Madura.



THE

Gardeners' Chronicle.

SATURDAY, AUGUST 18, 1888.

EARLY ENGLISH GARDENING.

III.

GERARD.—The year 1597 is one of the most distinct landmarks in the history of gardening, for, during its course, Gerard's great work, the *Herbal or General History of Plants*, appeared. When a theory or a practice is in its infancy, the literature thereof partakes of a tentative or even fragmentary character, and perhaps the only exception to this general rule may be cited in the case of Gerard's *Herbal*. This, however, entirely depends upon whether we regard it in the light of a botanical or of a horticultural treatise. The *Herbal* is divided into three parts or books, the first, to p. 176, treating of grasses, grain, rushes, reeds, Flags, and bulbous-rooted plants; the second, up to page 1076, of herbs used for food, medicine, or ornament, and the third dealt with trees, shrubs, fruits, rosins, gums, Roses, Heaths, Mosses, Mushrooms, and sea plants. There are, respectively, 106, 511, and 167 chapters in the three books. There are about 2000 illustrations, each of which is about 3½ inches by 2 inches, and as every one of these would now cost about half-a-guinea a-piece, it will be seen, leaving printing and paper entirely out of the question, that the undertaking can only be described by the one word, vast. The prefatory remarks are dated "from my house at Holbourne within the suburbs of London, this 1st of December, 1597." From the catalogue (1596) of the trees and plants growing in his own garden, in Holborn—and of which a *fac simile* reprint has been issued by Mr. B. D. Jackson—we may fairly assume that the father of English gardening had one of the largest physio gardens in the country. Holborn is anything but suggestive of gardens at the present time, nor, indeed, has it been for the past century. Not the remotest trace of the famous garden now exists, and nothing even to suggest the bare possibility, except the seedy shabby-gentility of Red Lion Square. "Talk of perfect happiness," exclaims the famous doctor-surgeon, "or pleasure, and what place is so fit for that, as the garden place where Adam was set, to be the

herbarist? Whither did the poets hunt for their sincere delights, but in the gardens of Alcinous, of Adonis, and the orchards of Hesperides? Where did they dream that heaven should be but in the pleasant garden of Elysium? As a matter of bibliographic interest, it may be pointed out that some copies of the *Herbal* have no portrait engraved by W. Rogers, which, when present, is engraved on the reverse of the last leaf of the preface. Another impression appears to have been called for in 1599; another in 1633, which was enlarged by T. Johnson; and another in 1636; but for over a century this famous work was the one botanical, herbal, and horticultural authority. We should very much like to make something more than a mere incidental reference to Gerard's descriptions of the Goose Tree, or Barnackle Tree, the Stonie Wood, or woode-made stones, sponges, and corals, but space does not permit. We may say, however, in leaving a most interesting subject, that the *Herbal* has no fewer than four indices, and that Gerard himself died in 1607.

In pointing out the broad characteristics of the adaptability to our English climate and scenery of the Elizabethan style of architecture, a writer in *Fraser's Magazine* of over a quarter of a century ago expressed surprise that, while so much attention has been paid to the study of this style for country residences, but comparatively little has been done for promoting a knowledge of the style of gardening which prevailed at the same period. The principles which regulated Elizabethan gardening may be thus summarised:—1. To lay out the garden in accordance with the domestic architecture of the period; there were the long terraces and right lines to harmonise with the rectangular lines of the building and the long galleries of the interior. 2. To plant the beds with mixed flowers, and to let the colours so intermingle and blend together that the whole should produce a mosaic of rich indeterminate colour, ever new, and ever-varying, as the flowers of different seasons succeeded each other. The Elizabethan garden was never without arbours, and these were either formed by, or covered with, sweet-scented shrubs, such as Honeysuckles, Woodbines, Musk Rose, or Eglantine. The last-named was an especial favourite, and it is frequently alluded to by the old poets and dramatists. Sarnfield, for example, in *The Affectionate Shepherd*, sings thus:—

"I would make cabinets for thee, my love,
Sweet-smelling arbours made of Eglantine.

Our forefathers had quite an inordinate passion for sweet-swelling plants and flowers.

That monstrous bogey—whose death has been so protracted and so hard—the Dutch style of topiary work, to wit—preceded the accession of William III. by over a century, for in the reign of Elizabeth we have such extraneous horticultural attributes as figures of temples, vases, statues, formal canals, broad, straight walks, bordered by walls of closely-cropped foliage. In the time of Henry VIII. the gardens of Nonsuch House were laid out in the Italian style, with the inseparable pyramids, statues, fountains, and so forth.

Leland (who died in 1552) in his *Itinerary*, which was first printed by Thomas Hearne in 1710, describes the gardens at Wrexhill Castle, Yorks, as containing "mountes, opera topiaria, writhen aboute with degrees like cockill-shells to com to the top without payn." Similar examples may be drawn from various sources, which are essentially authentic. William Rogers, who both drew and engraved the exceedingly quaint title-page to the first edition of Gerard's *Herbal*,

delineates this very precise and rule-of-thumb style. We have, in this unintentionally valuable picture, the beds in perfectly symmetrical order, and the trees very proper in outline. Mr. Rogers undoubtedly brought what was to him everyday fact into requisition, but he has also drawn considerably upon his imagination for the more fanciful and classic phases of his picture, particularly in the case of the two little Cupids, presumably in *nubibus*, who are busy watering with water-pots the fruit trees from overhead! Probably the picture of the house, as a whole, was taken from real life.

There is, however, an absence of statue work in the garden. The straight walks and geometric beds were edged with Box, Thrift, and Thyme, and were "like the patterns of Arabic tracery, stiff and formal." Giles Fletcher gives us a description of one of these formal gardens "cut like a lady fair."

"The garden like a lady fair was cut
That day as if she slumbered in delight,
And to the open skies her eyes did shut.

Upon a hilly bank her head she cast,
On which the border of vain-delight was built;
White and red Roses for her face were placed,
And for her tresses Marigolds were spilt."

Spenser, in his *Faery Queene* (bk. 2, canto xii., lviii.) shows the other as a charming side of the picture of the English or natural style of garden which was then struggling for recognition at the hands of the Elizabethan designers:—

"There the most daintie Paradise on ground
It selfe doth offer to his sober eye,
In which all pleasures plenteously abownd,
And none does others happinesse enuye;
The painted flowres, the trees upshooting hye,
The dales for shade, the hilles for breathing space,
The trembling groves, the christall running by,
And that, which all faire workes doth most agrace,
The art which all that wrought appeared in no place."

Various circumstances contributed to the fostering of the innate love for flowers, and to give an impetus to gardening; but more particularly the greatly extended intercourse with fresh countries, the internal peace, and the efforts of James Cole, John Tradescant and Nicholas Lete, to procure plants from the new countries. Many of the rare and curious plants, which were such favourites in the time of Elizabeth, are quite unknown in our gardens of to-day. But, perhaps, we can reconcile ourselves to this loss when we remember that the Potato and Tobacco have not only survived, but in a wonderfully developed form. *W. R.*

NEW OR NOTEWORTHY PLANTS.

ALOE (EUALOE) PENDULIFLORA.

*Baker, n. sp.**

THIS new Aloe, which has just flowered at Kew for the first time, was sent by Sir John Kirk from Zanzibar in 1884. It is allied to *A. consobrina*, *spicata* and *Hildebrandtii*, the latter a fine new species, lately figured in the *Botanical Magazine*.

Stem simple, erect, $\frac{1}{2}$ inch diameter; leaves laxly disposed, spreading, ensiform, about 1 foot long, 1 to $1\frac{1}{4}$ inch diameter, plain green, nearly flat on the face, rounded on the back, the marginal prickles small, deltoid, cuspidate. Raceme dense, simple, erect, with a pendulous peduncle half a foot long, produced from the axil of one of the upper leaves; pedicel $\frac{1}{2}$ inch long; bracts lanceolate, much shorter

* *Aloe (Eualoe) penduliflora*, n. sp.—Canle erecto simpliciter gracili; foliis laxo dispositis patulis ensiformibus viridibus immixtulis subpedalibus, dentibus marginalibus deltoidibus; pedunculo d-flexo axillari semipedali; racemo denso simplici erecto, pediculis elongatis apice articulatis; bracteis lanceolatis, perianthio luteo apice viridulo, tubocylindrico elongato segmentis brevibus lingualis; staminibus breviter exsertis.

than the pedicels. Perianth pale yellow, tipped with green, above an inch long; segments lingulate, less than half as long as the tube. Stamens just exserted; anthers small, oblong, red. *J. G. Baker.*

ONCIDIUM PUMILUM, Lindl.

It is highly interesting to see to what a degree of development an Orchid, usually insignificant, may attain under excellent management. *Oncidium pumilum* is usually a poor, starved thing, at whose sight a modern English amateur shrinks. The longest inflorescence I know of is represented in Vellozo's, *Flora Fluminensis*. Sir Trevor Lawrence, Bart., M.P., P.R.H.S., has kindly sent me a leaf of unusual strength, more than 5 inches long, by $1\frac{1}{2}$ wide, marked with the usual blackish-purple spots. The inflorescence is much longer than a span, and the branches are longer than I ever should have thought possible—between 3 and 4 inches. With this development the usually humble plant assumes attractive features. *H. G. Rehb. f.*

CATTLEYA INTERMEDIA PARTHENIA, n. var.

A gleaming beauty, a snow-white flowered variety, kindly sent me by Mr. R. H. Measures, The Woodlands, Streatham, S.W. It came with *Lælia elegans* var. *Tautziana*, as imported by Mr. F. Sander. The bulbs are said to be double the length of those of *Cattleya intermedia*. As to this point I may state that I have several times seen *Cattleya intermedia* with bulbs quite equal to those of *Lælia elegans*. *H. G. Rehb. f.*

CATTLEYA LABIATA GASKELLIANA ALBA, n. sub-var.

This is a grand variety, quite white, excepting the yellow throat. It was flowered at the same time by Mr. R. H. Measures, of The Woodlands, Streatham, London, S.W., and by Mr. F. van Imhoot, Mont St. Amand, Gand. The latter gentleman [as also Mr. Measures], has watched the flowers, and ascertained that they do not turn rose-coloured. Hence there is no question of the Berlin *Cattleya Gaskelliana* albens, that reappeared recently with Messrs. H. Low & Co. *H. G. Rehb. f.*

MASDEVALLIA PLATYRACHIS, Rolfe, n. sp.

THIS is a new and very remarkable species of *Masdevallia*, and one which presents such a series of anomalous characters that it appears to constitute a totally new section of the genus. In the first place, the scape is flattened and sword-like; hence the specific name proposed. Then the tube of the sepals is so extremely short as to be almost obsolete, while the free portions of the sepals are not prolonged into tails, as in the majority of the species. The very short tube is seen in the group containing *M. swertiaefolia*, *gibberosa*, *ochthodes*, and some five others, but in this group the lip is uppermost, not underneath, as in the present species (and, indeed, in all except the little group above-named), while there are other characters which do not agree. The plant was imported from Costa Rica by Mr. Shuttleworth, and sent to Kew in 1884, in which year a scape was produced. It has now become fully established and is bearing several scapes, the first flower having recently expanded. The following description will explain its character:—

Plant densely tufted. Leaves oblanceolate-oblong, minutely tridentate, the midrib sharply keeled behind at the apex, attenuate below into the short petiole, light green, 2–6 inches long, 8–12 lines broad. Scape flattened, 6–9 inches long, $1\frac{1}{4}$ line broad, bearing about four empty bracts below the flowering portion, each about equidistant from each other, and about six flowers in succession, about three-quarters of an inch long. Bracts 3 lines long, the lower half sheathing, the upper half free, but the sides oppressed together; thus laterally flattened, triangular-lanceolate, subobtus. Pedicels 5 lines long. Ovary $1\frac{1}{2}$ line, sharply triangular, the angles almost winged. Tube of sepals barely one-third line long, the free portions lanceolate, acute, 3-nerved, the central nerve keeled, margin reflexed; upper two-thirds distinctly verrucose inside, three-

quarters of an inch long, light buff, paler towards base of dorsal sepal, becoming orange on the same portion of the lateral ones, nerves green. Lateral sepals connate for $2\frac{1}{2}$ lines, somewhat falcate, almost parallel, a little narrower than dorsal one. Petals narrowly linear, obtuse, slightly falcate, $2\frac{1}{2}$ lines long, chestnut-brown, the central nerve darker than the rest. Lip $1\frac{1}{2}$ line broad at base, gradually narrowing from apex of side lobes to an acute point; flat behind, sharply recurved from the apex of the side lobes, at which point a pair of acute keels leave the margin, and run parallel with it to near apex, the keels themselves gradually approaching each other; light yellowish-brown, inclining towards reddish, the central nerve, and the lateral pair which run into the keels, being of a slightly darker shade. Column green, with a pair of broad rounded wings, which are buff on the margin. Pollen masses two, precisely as in the genus. The lip of this remarkable plant is attached by a delicate hinge and oscillates up and down with the slightest movement. The flowers open about three-quarters of an inch from apex of dorsal sepal to that of the lateral ones. The singular aspect of the plant will be at once apparent from the above details, there being no single species with which it can be compared, either in structure or colour. I am not aware if any other plants are in existence in the country. *R. A. Rolfe.*

LILACS.

THE following notes from the pen of Professor Sargent are extracted from *Garden and Forest*:—

Syringa vulgaris is a native of the mountainous region of Central Europe from Piedmont to Hungary. It has been a favourite garden plant for three centuries, and has produced in cultivation a great number of varieties with more or less dense inflorescence, and with flowers varying from purplish-red to pure white. Double-flowered and blotched-leaved varieties are cultivated. The leaves of this species and of all the varieties are often greatly disfigured in the United States during the summer and autumn months by the attack of a white mildew.

Syringa oblata is not known in a wild state; it was first discovered by Fortune in a garden at Shanghai, and, later, by the Abbé David, in gardens near Peking. Its perfect hardiness in this climate indicates its northern origin. *S. oblata* differs but slightly in botanical characters from some forms of *S. vulgaris*, a geographical variety of which it should, perhaps, be considered, although, from a garden point of view, quite distinct. Here it flowers ten or twelve days earlier than the earliest varieties of *S. vulgaris*, and its thick, leathery leaves, which are never attacked by mildew, turn in the autumn to a rich dark russet-red colour—a character which should be taken advantage of by hybridisers to secure a new race of Lilacs with the large inflorescence of *S. vulgaris* and the foliage of this Chinese plant. *S. oblata* is a stout spreading shrub here, now 8 or 10 feet high, flowering profusely every year. There is a white-flowered variety which has not flowered here.

Syringa chinensis.—This plant, although long cultivated, is not known in a wild state. It is believed to be of Chinese origin, and it is not uncommon in the gardens of Peking. In general appearance, in the shape of the leaves, the size of the flowers, and in the period of blooming, it is intermediate between *S. vulgaris* and *S. persica*. This is one of the hardiest and handsomest shrubs in cultivation, producing its enormous rather lax clusters of flowers in the greatest profusion. There are varieties with rosy-purple and with white flowers.

Syringa persica has long been an inhabitant of the gardens of Persia and India, whence it was introduced into Europe and America. Its native country, however, was long unknown until it was met with by Dr. Aitchison, of the Afghan Boundary Survey, who found it "a very common shrub on the low and outer hills near Shalizan up to nearly 7500 feet." Varieties with lilac and with white flowers are

common. *S. pteridifolia* is a variety in which the leaves are deeply laciniate.

Syringa villosa was discovered near Peking about the middle of the last century by the French missionary, d'Incarville. It was found in the same region by David, and plants raised from seed sent to the Arnold Arboretum from Peking by Dr. Bretschneider are now growing there. To this species should perhaps be referred, as M. Franchet hints in his paper upon the Chinese Lilacs,* *S. Josikaea* and *S. Emodi*, which, as he points out, cannot be separated from d'Incarville's plant either by the shape of the leaves, the character of the inflorescence, or by the shape or size of the flowers. In the Himalaya plant (*S. Emodi*), however, the long white hairs which cover the under side of the leaves of *S. villosa* are replaced by a minute pubescence on the midrib, which is even less developed on the leaves of *S. Josikaea*. The bark, colour and markings of the young shoots, and the habit of these three plants are identical, although in *S. Josikaea* the leaves are narrower than in the Chinese plant, but not narrower than those of many Himalayan specimens. The plants of *S. Josikaea*, now widely distributed in gardens, have all been propagated from a single plant discovered in a Hungarian garden, but not known to be wild in Europe, and probably of Asiatic origin.

Syringa pkinensis is a native of the mountains of Northern China, where it was discovered by David. It is growing in the Arnold Arboretum, where it was raised from seed sent by Dr. Bretschneider from Peking, but as yet has shown no disposition to flower. It is a slender tree-like shrub, perfectly hardy, and already 10 to 12 feet high, with long, graceful, flexuous branches, covered with smooth yellow-brown bark, not very unlike that of a Cherry tree. A plant with distinctly weeping branches appeared among the seedlings raised in the arboretum.

ORCHID NOTES AND GLEANINGS.

DENDROBIUM SPHEGIDOGLOSSUM, *Rohb. f.*

THIS scarce species has recently been sent to the Kew Herbarium by Major-General E. S. Berkeley, who obtained it from the hills on the frontier of Siam; it was also collected by Parish in Burmah. The stems grow to about 9 inches in height, they are spindle-shaped, and not very thick. The leaves are narrow, oblong obtuse, and marked on the upper surface with numerous impressed dots. The flowers are of rather small size, about $\frac{1}{2}$ inch long, and are produced from the old stems in short 2–3 flowered racemes, with oblong obtuse, complicate, yellowish-green bracts. The upper sepal is lanceolate acute, the lateral sepals elongate, triangular, acute, keeled down the back; the petals are lanceolate obtuse, and the rather narrow lip is three-lobed with narrow triangular side-lobes, and an oblong middle lobe, all three lobes being fringed with curled hairs. The colour of the flower is yellowish-white, with some very delicate red veins on the sides of the lip and the tip of the lip marked with orange-red. *N. E. Brown.*

ORCHIDS AT MESSRS. SEEGER & TROPPE.

In their new establishment at Lordship Lane many fine and curious Orchids are now got together, as well as good importations of the showy species, and notably a grand lot of *Lælia purpurata*, which curiously enough are now sending up their spikes. Many superb masses are among them, the largest, which has over 200 pseudobulbs and twenty flower-sheaths, being probably the largest single mass ever got over.

The Cypripedium collection which has just produced the singular *C. Stonei* acrosepalum has now another new hybrid in bloom, the result of a cross between *C. Spicerianum* and *C. Harrisianum*. Its flowers are very handsome, and much like the beautiful *C. Tautzianum*, it having the same rosy flush

over them; the form of the dorsal sepal, however, is that of *C. Leeannum*. The leaves are handsome, like a strong *C. Spicerianum*, with a slightly darker veining—certainly an acceptable variety.

On the tank beneath the rockery in the intermediate-house are growing in great luxuriance some rare Sobralias, which seem to like the situation. A grand specimen of the noble *S. Cattleyæ* has stems 8 feet in height with very stout and vigorous young growths which will doubtless flower when mature. A good lot of *Vandas* have some in bloom, also a fair sprinkling of flowers on *Cattleya Gaskelliana*, *C. velutina*, *C. bicolor* Wrigleyana, *Angraecum Scottianum*, *Saccolabium gemmatum*, many *Cypripediums*, *Masdevallias*, and *Oncidium*s, and a grand strain of *Oncidium Papilio majus* of great size, fine colour, and handsome marking. Some of the flowers measure 7 inches from the top of the upper sepal to the front of the labellum.

SOBRALIA LEUCOXANTHA.

Were it not for the short time—in most cases a single day—during which the flowers of *Sobralias* last, the genus would occupy a place in the very first rank of beautiful Orchids. As it is, they are not grown by any means so extensively as they deserve to be, for what the flowers lack in duration they make up in numbers. The old *S. macrantha* is rarely without bloom when the flowering season has once commenced, and few plants grow with greater freedom, if treated liberally. We find that during active growth occasional waterings with a weak solution of cow manure are very beneficial.

S. leucoxantha, a new and at present rare species, proves to be a most beautiful addition to the genus. The flowers are 3 to 4 inches in diameter, with sepals and petals of pure white, the latter differing only in being somewhat shorter and broader. The outer side of the lip is white, as is also the frilled edge on the inner side, but the colour gradually deepens into a beautiful golden-yellow in the throat. This species is not so strong a grower as some others, the slender stems measuring from a foot to 18 inches in height. It should be grown in the East Indian-house in a pot of fibrous peat. Like its congeners it requires copious supplies of water when growing, and at no time should be allowed to become dry. A plant is flowering at intervals in the Kew collection, from which a figure has been prepared for the *Botanical Magazine*. *W. B.*

CULTURAL MEMORANDA.

BROWALLIA ELATA.

If a pinch of seed of this pretty blue-flowered, half-hardy annual be sown forthwith in shallow pans filled to the rim with light sandy mould, and covered lightly with the same compost, placed in heat and watered with a fine rose, young plants will soon appear. These should be kept near the glass to prevent them making a weakly growth, and as soon as large enough they should be pricked out into shallow boxes, about 2 inches apart, in a compost consisting of three parts light sandy loam and one of sweet leaf-mould, watered, and returned to heat as before. Subsequently pot them into 3-inch and $4\frac{1}{2}$ -inch pots. These plants are very useful for conservatory and greenhouse decoration during the winter and spring months. *H. W. W.*

AQUILEGIAS—VEITCH'S NEW HYBRIDS.

There has been a great improvement effected in the Columbine within the last few years by Messrs. James Veitch & Sons. Their new hybrids comprise many new combinations of colours in the same flower, the colours ranging through all shades of lavender, blue, mauve, white, yellow, orange, scarlet, and bright rose-pink. The *Aquilegia* is a very useful and effective hardy perennial, treated either as a border plant or potted up for the embellishment of greenhouse and conservatory during the spring months. A good stock may be easily worked up

* *Journ. Linn. Soc.*, xlviii., 73.

* "Observations sur les *Syringa* du Nord de la Chine," *Bull. Soc. Philomatique de Paris*, July, 1885.

either by divisions of the roots being transplanted to where they are intended to flower, or potted up into $\frac{1}{2}$ -inch and 6-inch pots, in rich soil, or by seed in shallow pans, in March or August. By adopting the latter method of procedure new shades of colour may be obtained. The pans containing the seed should be put into a close frame, and watered through a fine rose. As soon as the seedling plants appear give sufficient air to secure a sturdy growth, and as soon as large enough prick out, at 2 inches apart, in shallow boxes filled with a mixture of light sandy loam and leaf-mould in the proportion of three parts of the former to one of the latter; return to the frame, giving them a position near to the glass, and shade from sunshine until the roots have taken to the soil, subsequently potting the plants singly into 3-inch and $\frac{1}{2}$ -inch pots; then stand the pots on coal-ashes in shallow frames or pits, water, and keep close for a few days until they have pushed into the soil, after which a free circulation of fresh air should be admitted. As the plants show signs of going to rest water should be given less frequently at the roots: keeping them on the dry side during the winter months. Towards the end of February remove the loose surface soil, and top-dress with the mixture indicated above prior to placing the plants in gentle heat—say a vinery or Peach-house just started—when they will soon start into growth. *H. W. W.*

THE MIMULUS.

The richly marked flowers of this hardy perennial, together with its easy culture, renders it a very desirable and effective border and pot plant for conservatory and greenhouse decoration during the spring months. The plant is easily propagated by transplanting or potting up divisions of the roots in moderately rich soil, and from seed sown in March or August; afterwards treating the seedling plants in the manner recommended above for Aquilegias, tying out the plants subjected to pot culture as soon as the flower-spikes appear. *H. W. W.*

EPILOBIUM ANGUSTIFOLIUM.

This, just now, is very gay and effective in gardens, and is a very telling and desirable plant for certain situations; the places, perhaps, for which it is best adapted being half-cultivated spots, such as woodland walks or shrubby borders, where it raises its tall spikes of flowers and looks quite at home. This Willow-herb comes readily from seed, sown as soon as ripe, or in the spring, and it may also be increased readily by division, and when once planted it spreads and takes care of itself.

PYRETHRUMS.

For flowering in the herbaceous border during spring and early summer, and for cutting purposes, Pyrethrums are very valuable, and especially the single forms. These may be raised readily from seed, and much variety obtained; but to have really showy, good sorts, the better way is to get a few distinct named ones. Seed may be sown at once. Prepare some soil by sifting, spread it on the ground, make firm and water, after which the seed may be scattered thinly over the surface, and slightly covered, and then place over it a handlight to assist it to germinate. As soon as this takes place air must be given, increasing the quantity as the plants gain size, till they are fully exposed to the weather. The pricking out is best done during a dull showery day, when the plants should be dibbled in rows, and there left till they bloom, when those worth saving can be selected and marked, or the inferior ones pulled up and destroyed. If plants are to be purchased, it is advisable to have them in pots at this season, as then they suffer no check, and take to the ground at once, but to enable them to do this they must be kept well watered till the roots get a start. Pyrethrums, both double and single, do well in almost any kind of soil, but in the spring they quickly suffer from drought, and it is only those that have plenty of moisture that carry fine blooms. Liquid manure is a great help to them when they are flowering, a period at which they will take any quantity. The double kinds of Pyrethrum admit of

ready propagation in spring, when they may be divided by simply cutting them through, or by lifting the plants and pulling them apart, as any that have stood a year or two have numerous crowns, and each piece with roots will grow. Division may also be carried out in the autumn. *J. S.*

CYRTOPODIUM SAINT-LEGERIANUM.

This may be regarded as the showiest form of the variable *C. punctatum*, from which it does not seem to differ in botanical features; it is, however, far handsomer than the general run of the species, and the bracts, which are highly developed, are barred and blotched with chestnut-red of the same bright hue as that seen on the yellow flower-segments. A glance at the *Botanical Magazine* figure of *C. punctatum*, t. 3507, which represents one of the lightest coloured forms with greenish-yellow bracts without spotting, shows how wide the range is between the variety there depicted and the one we here illustrate (fig. 20); but those who know the plant will have seen many forms intermediate between the two. *C. Saintlegerianum* was discovered in Central Paraguay by M. de St. Leger, the finder of the pretty *Oncidium Jonesianum*, and was exhibited by Mr. Cumming, gardener to A. H. Snee, Esq., of Hackbridge, at the Royal Horticultural Society, March 9, 1886, when it received a First-class Certificate. On March 13 of this year it was again shown, on which occasion our illustration was taken.

FLORISTS' FLOWERS.

THE FLORISTS' TULIP.

TULIP growers have had to wait and watch for a suitable dry time in which to take up their bulbs; and all are, no doubt, out of the soil by this time, and enjoying that dry rest above the ground which is always considered by Tulip growers to be better for it than a wet one below; and we are informed by men of experience that the bulb which has been kept cool and dry strikes root with far greater force at its natural time for rooting, which is about the month of September.

It must not be supposed that when the Tulip bulb is lifted and dry that, though life is dormant, it is actually stagnant. As the Rev. F. D. Horner has stated, in one of his pleasant papers on this gorgeous flower, "There is no suspended animation in the Tulip bulb. It is full of ripe and ready active juices, and these are stirred by such nerve and pulse as may be in vegetable life, and are used at once, though invisibly, in building up tissue and structure of next year's foliage, stem, blossom, and seed-pod, together with, not least among the hidden wonders, the germ of the bulb to follow. Cut through the bulb when newly ripe in June and you will see nothing but so many fleshy, juicy layers, united on a base, or radical plate; but watch the bulb from time to time, as autumn draws on, and you will see that its very shape has been gradually altering. Instead of losing flesh, it seems to have gained it, and its tissues are fuller of sap than ever. They are tense, and bright, and fervent; while at the vital base of the bulb—its most vulnerable part—the coronal of fibres, with the point of every future rootlet almost pricking through, is very prominent. Probably the pale tip of the young shoot, the 'guard-leaf' as it afterwards becomes, is already visible; but, if not, dissection would reveal every leaf of the future foliage—every petal of the coming flower, with every chance notch and imperfection of shape pre-figured in it—every stamen, and the seed-pod with its triple stigma, only at this early stage the proportions of the various parts are not in their final order; for the embryo stamens are larger than the petals of the unborn flower, and there is little or no visible stem. Close by, and upon the radical plate, like the rest, will be seen a far tinier shoot, or eye, and this is the crescent bulb for a year beyond the present. Contemporary

offsets are similar germs, attached also to the radical plate, and lying between folds of the parent bulb. If they are large they may be seen attached in the same way to the outer layer of the bulb."

This passage, while it teaches some interesting physiological facts connected with the Tulip, also shows how necessary it is that the utmost care should be observed in preserving the bulbs from the time of lifting until that of planting.

The Tulip appears to prefer a rather heavy preference to a light soil. I think one reason why Mr. Barlow's Tulips were below their usual mark this season was the lightness of the soil in which they were grown. While the incidence of the season had something to do with the unequal growth—and this was observed all round among the growers—the spongy character of the soil had something to do with it. Mr. Barlow finds great difficulty in getting suitable soil in his district; it is more or less impregnated with metallic oxides, and these the Tulip does not like. Old Tulip growers hold the opinion that a soil that will grow good Wheat and Beans will grow good Tulips also. A rather stiff and deep loam suits it best; and should it be too clayey, a balance can be struck by mixing with it some chopped-up sods of decayed turf and coarse river-sand.

Mr. Horner has stated that he never had Tulips better than when once, by change of residence, he had to plant them after Potatoes, in a clayey soil that was well-drained and worked. If the soil is good, there is no need to dig manure into it at the time of planting; it is enough to give a surface mulching of short manure after planting is done. The Tulip likes a little salt in the soil. Mr. Horner further states:—"I use the same ground every year for Tulips, and nearly every summer, just after taking them up, give the beds a fair sprinkling of common salt, till they seem as if whitened by a slight fall of snow, not quite enough to cover the ground."

Some years ago a discussion took place in one of the floricultural publications of that day on the subject, "What is it kills Tulips?" The conclusion reached—and it is, no doubt, the correct one—was, it is wet, rather than frost, which kills Tulips. It is the necessity for drainage that illustrates the practice of raising the Tulip bed above the level of the surrounding ground. Wet is the most deadly foe of the Tulip, and the moister the position of the bed, the higher should it be raised; in such a case 18 inches would be none too much. If there is a good deep soil drought may not be feared, as the fibres strike down very deeply into it. If a very dry time sets in, and the plants show signs of suffering from it, a good surface watering can be given with advantage.

November 9 is the traditional time for planting Tulips. In the days when such a fine collection was grown at the Royal Nursery, Slough, planting was always done within a day or two of Lord Mayor's Day. The later the district, the earlier should planting be done. Something depends upon the weather, for planting is best performed when the soil is friable and fairly dry. This operation might be performed during the last two weeks in October.

What sorts of Tulips can be obtained by those who are desirous of entering upon their culture? No one in this country publishes a catalogue of late florists' Tulips; but the following are grown by the Northern florists, and they can, no doubt, be had:—Feathered bizarres: Garibaldi, rich golden-yellow ground, best in its feathered form; George Hayward, finely feathered with dark crimson-maroon—a variety that generally comes in good form; Storer's William Lea, rich deep golden ground, and fine bronzy-maroon feather; Hepworth's General Grant, a rich scarlet-feathered bizarre of the colour of Orion and Dr. Hardy; Masterpiece, good pure golden ground colour, finely feathered; William Wilson, said to have originated from Masterpiece, also very fine; Ashmole's Lord Raglan, very finely pencilled, and golden ground colour; and Sir Joseph Paxton, always good. Flamed bizarres: Sir J. Paxton, Dr. Hardy, Orion, all to be depended upon; Excelsior, a fine dark flower, one of the late Dr.

Hardy's seedlings; and Storer's No. 4, a fine flower. Feathered roses: Modesty, a charming variety, with a rich deep scarlet feather on a white ground; Martin's 101, beautifully feathered, but wanting in shape; Nancy Gibson, rich in colour, quite

William Bentley, a scarce variety, finely feathered; and Alice Gray, also a good useful flower. Flamed byblœmens: Talisman, one of the very best in cultivation; Duchess of Sutherland; Adonis, very fine; and Friar Tuck, a rosy byblœmen, fine and correct

posely omitted a few of the newer varieties, because they are practically unobtainable at present. *R. D.*

THE DAHLIA.

The plants require constant attention in pinching



FIG. 20.—CYRTOPODIUM SAINTLEGERIANUM: PORTION OF THE INFLORESCENCE. FLOWERS YELLOW, HEAVILY BARRLED AND SPOTTED WITH BROWN. (SEE P. 180.)

a scarlet; and Industry. Flamed roses: Annie McGregor, perfect in marking and shape, very fine; Aglaia, a good old variety, especially when in its best form; Lady Sefton, bright in colour; and Mabel, very pretty and striking. Feathered byblœmens: Bessie, Mrs. Jackson, with a rich feathering of glossy raven-black; Mrs. Cooper,

when in its best form. Breeder Tulips—bizarres: Excelsior, Sir J. Paxton, William Lea, Horatio, Abe Lincoln, Ashmole's Seedling, and Storer's No. 4. Rose breeders: Mrs. Barlow, Annie McGregor, Lady C. Grosvenor, Miss Burdett Coutts, and Industry. Byblœmen breeders: Glory of Stakehill, Adonis, Talisman, and Elizabeth Gill. I have pur-

or cutting out all superfluous growths, and I would remark here that pinching is better than cutting out. When a plant has been allowed to grow until it has formed a thicket of shoots, that have hardened, and must be removed with a knife, it cannot be expected to do so well afterwards as if the growths had been small and soft, easily removed by

pinching them out with the finger and thumb. These soft growths, when taken off below a joint, strike readily in a frame, and when rooted may be planted in large 60 or small 48-pots. Each plant will form a tuberous root, and in October they may be dried off without removing the plants from the pots, and if they are stored where frost is excluded they can generally be kept in good condition through the winter. The pot-roots, as they are called, come in useful when the ground-roots are ripened badly, and rot off even when carefully kept. I put aside six good roots of one particular variety last year, and every one decayed in the winter, and so I lost the stock, not having any pot-roots of it. The plants have suffered from too much water this year, and are not by any means so strong as if it had been a hot and dry season.

HOLLYHOCKS.

We have tried these handsome garden plants by letting them remain in the open garden all through the winter. On a dry border, and sheltered from the north wind, not a single plant has died; but in a part of the garden where the water does not drain away so freely, and where the plants are exposed to the north, every plant has died. It is therefore not safe to leave choice varieties out-of-doors, unless they are placed in a sheltered and a moderately dry position. It is, perhaps, rather troublesome to keep such plants in pots through the winter; but those who object to this may plant them out close together in frames in light dry sandy soil. They can be protected by the glass lights from the winter weather. The disadvantage attending the plants in frames is the fact that they do not produce their growths early enough to form cuttings which will give strong flowering plants the same season; whereas those placed near the roof-glass in a heated house may have shoots strong enough to take off for cuttings in January. Cuttings may be taken now wherever they can be obtained, and all the side growths on which there are dormant eyes may be taken off, and the eyes can be planted in small pots, using light sandy soil. They soon form roots in cold frames if the lights are kept close over them. *J. Douglas.*

VIOLAS.

From Messrs. Dobbie & Co., of Rothsay, we have received a number of flowers of *Violas*, which for correctness of form, variety, and purity of colour, are of a high order of merit. Crown Jewel may be mentioned as very lovely, the rounded petals being all of a rich maroon or purple-velvet colour, edged with a wavy margin of white; while the lowermost petal has an orange blotch, forming an excellent indicator for vagrant insects, the button-like head of the style lying exactly on the blotch. The strain may be highly commended.

IRISES.

IRIS CYPRIANA, *J. G. Baker and M. Foster, n. sp.*—A tall large-flowered *Iris* of the *Pogoniris* group, with a massive compressed branching many-flowered scape, 3 feet or more in height. The spathe-valves are conspicuously navicular while the flower is in bud, and become more or less scarious during flowering.

The blade of the obovate cuneate falls, which is 12 cm. long by 6½ broad, is a fine somewhat reddish-lilac, with thin inconspicuous darker veins; the claw is marked by thick greenish-brown branching veins on a creamy-white ground. These veins spread over the base of the blade and end abruptly at a transverse line drawn through the end of the beard, which is massive, reaching far beyond the

styles, the stout hairs being white, tipped with orange, especially at the back. The under surface of the claw is marked with purple spots.

The blade of the oblong-unguiculate standard, 9 cm. long by 6 cm. broad, is of a lighter more blueish lilac. The long claw, 2 to 3 cm. in length, is marked with reddish-brown spots arranged in broken lines.

The styles are of a lilac or lavender colour, lighter still than the standards, except along the median line. The crests are broadly triangular, divergent, with serrated edges.

The relatively long tube is light green with faint purple streaks in continuation of the claws of the standards.

This *Iris*, by its inflorescence, belongs to the *I. pallida* group, though the peduncles are relatively longer, and has a certain superficial resemblance to *I. pallida* itself, but appears to me to differ from it, to the value of a species, in the following points:—

1. In *I. cypriana* the spathe valves and peduncular bracts are conspicuously navicular, and at flowering time are scarious in part only, sometimes only half scarious, the extent varying according to dryness of season, and are brown scarious.

In *I. pallida* the spathe valves are never navicular, and are wholly scarious—paper-white scarious—long before flowering, while the buds are still immature, and that whatever the weather. This is a very marked feature of *I. pallida*, and makes itself felt in the hybrid offspring of *I. pallida*. In *I. plicata*, or *I. Sweetii*, which are hybrids of *I. pallida*, the spathe valves are as scarious—and as early scarious—as in *I. pallida* itself. I am consequently led to lay great stress on this character.

2. The form of the perianth segment is different in the two. In *I. cypriana* the fall is obovate-cuneate, in *I. pallida* it is more or less broadly ovate, in some cases very broad and short, in other cases rather longer in proportion to breadth, but never so relatively elongate as in *I. cypriana*. The standard similarly in *I. cypriana* is oblong-unguiculate, with a long claw; in *I. pallida* orbicular-obovate, with a short claw.

3. In *I. pallida* the tube is very short, the ovary is short and broad, very distinctly hexagonal with six distinct grooves, becoming as a ripe capsule, a short, broad ellipsoid.

In *I. cypriana* both tube and ovary are relatively longer, and the ovary though really hexagonal with six grooves, has three sides broader than the others, so that it appears somewhat trigonal, and ripens into a capsule which is an elongate ellipsoid.

It is true that the ovary in the different varieties of *I. pallida* varies a good deal in length relative to breadth; some are very short and broad, others are relatively long, but in each case the end is rounded obtusely and abruptly. In *I. cypriana* the ends thin away more gradually from the middle. I do not know what exact term to use—it is not unlike a torpedo with blunt ends.

4. The styles in *I. cypriana* are, relative to breadth, longer than in *I. pallida*, which are notably short and broad. The crests in *I. cypriana* are larger and more quadrate.

5. The leaves are relatively narrower in *I. cypriana*.

6. The habit is very different. *I. cypriana* dies down to a large extent in late summer, and conspicuous shoots, as in *I. sicularis*, very closely resembling similar shoots occurring at the same time in *I. susiana*, appear after the autumn rains. *I. pallida* does not die down until winter, and then sometimes partially, but sometimes wholly, no leaves remaining above the soil. It will be interesting to observe the characters of the seeds, which I hope to do in the course of the summer.

I do not think *I. cypriana* can be a hybrid of *I. pallida*—the only possible other parent would be *I. germanica*—and then one would expect a very different coloration.

The root of this fine large new bearded *Iris* was sent to Kew from Cyprus by Mrs. Kenyon, together with roots of a white *Iris*, which proved to be identical with *I. albicans* (Lange). The handsome large

flowers make it a welcome addition to our gardens and it has the additional merit of being a late flowerer—the latest of the tall bearded *Irises*—later than *I. pallida*, and at this moment (July 17) is in flower in my garden at the same time as *I. Monnieri* and *I. aurea*. It is a very conspicuous and pleasing sight at a distance. I can distinctly see the large white beard 30 or more yards off. It has a slight fragrance resembling that of *I. germanica* rather than that of *I. pallida*.

It seems somewhat impatient of autumnal and winter rains, and should, I think, as indicated by the manner in which it shoots in autumn, be planted in a dry position. I fancy that it would profit by being “roasted” in summer, and the extremely free way in which it has flowered this summer is probably due to the, in some ways, beneficent drought of last summer. *M. F.*

I. BARNUMI, *J. G. Baker and M. Foster, n. sp.*†

Rhizome, slender, fleshy, with the usual characters of an *Oncocyclus* rhizome, i.e., the new buds, which appear first in a nipple form, early become separated by a constriction from the old stock, causing the new growths to be discrete, not massed together as in *Pogoniris*.

Leaves, five or six to a tuft, about 15 cm. by 1 cm. or less linear, pointed, somewhat falcate.

Scape, 3 cm. to 14 cm. in length, one flowered, with a sheathing leaf starting at about a quarter of the length.

Spathe Valves, 5 to 6 cm. long, elongate, narrow-pointed, slightly ventricose, longer than tube, flushed with purple at lip and extreme edge, otherwise green, persistently herbaceous long after flowering.

Fall, obovate cuneate, 5 cm. long, by half as broad, with no distinction between claw and blade, the latter concave from side to side, sharply reflexed and curled down in the apical third, dark venous red-purple with darker veins; beard triangular, “fluffy,” hairs thin, close-set, yellow, tipped purple, many hairs straggling away laterally from the triangular outline of the mass of the beard.

Standard: blade, orbicular obovate, connivent, 6 to 8 cm. long by 6 or 7 cm. broad, folded saddlewise, narrowing, at first gradually and at last suddenly, to a short claw, edge crenate, colour red-purple rather lighter than the falls, with more conspicuous veins; a very few hairs on the claw.

Styles nearly horizontal, arching over falls; groundwork brownish-yellow, made reddish by red-purple dots and a median-purple streak; under-surface yellow; crests triangular, much recurved, finely serrate, red-purple with deeper veins; stigma with serrate purple edge.

Antlers large; pollen yellow.

Ovary trigonal, shorter than the long tube.

Capsule trigono-ellipsoid. Seeds large, with conspicuous light-coloured strophiole.

Flowers in May or June, rather later than *I. iberica*.

The flowers in a warm atmosphere possess a delightful fragrance. The plant, like other *Oncocyclus* *Irises*, dies down in midsummer if roasted, and shoots again after the autumn rains. In many respects it comes near *I. paradoxa*.

There can be no doubt that in spite of possessing a defined beard, it belongs to the *Oncocyclus* group; in every other character, as well as in general aspect and habit, it is an *Oncocyclus*.

This plant is a native of the hills, about two hours distant from Van in Armenia. For the possession of it I am indebted to the kind zeal of Mrs. Barnum, of the American Mission of Kharput. She saw the flower while on a visit to Van, and secured roots for me. I have great pleasure in naming it after this lady, who has been indefatigable in sending me *Irises*

† *Iris Barnumi*, n. sp. — *Rhizome* brevi; foliis linearibus glaucescentibus semi-pedibus; caule brevi monocephalo; spathe valvis magnis post-anthesin herbaceis; perianthii tubo brevi, limbo atropurpureo venis obscuris, segmentis exterioribus obovato-cuneatis barba subdiffusa pilis lutescentibus purpureo-capitatis, segmentis interioribus obovato-unguiculatis exterioribus majoribus; styli cristis brevibus recurvatis; seminibus magnis conspicue strophiolatis. *J. G. B.*

* *Iris (Pogoniris) cypriana*. — *Rhizome* brevi, foliis elongatis late ensiformibus glaucescentibus, spathe valvis navicularibus ad anthesin sursum scariosis, floribus generum maximis pulchre lilaceis basi albis venis brunneis decoratis, ovario sub-ensiformi irregulariter hexagono, tubo subpollicari, segmentis exterioribus obovato-cuneatis barba centrali pilis albidis luteo-capitatis, segmentis interioribus orbiculari-oblongis unguiculatis, styli cristis magnis serratis, fructu ellipsoideo-cylindrico. *J. G. B.*

from Asia Minor, and to whom we are already indebted for *I. lupina* *I. reticulata* var. *sophenensis*, a very distinct variety of *I. persica*, and indirectly for other Irises which I believe will prove to be new. M. F.

SCOTLAND.

HORTICULTURE AT WEMYSS BAY.

THE beauties of the scenery at Wemyss Bay are well known to the ordinary tourist who visits this famous part of the Clyde during his summer holidays. The several Guidebooks which he may consult give every particular that may be of interest to visitors who come to the district for the purpose of admiring the features of as charmingly varied a landscape as may be found in the United Kingdom. The horticultural tourist, however, has been altogether ignored in these Guidebooks. Any indication of what is professionally interesting to the gardener on holiday finds no place in them—a shortcoming which I commend to the consideration of their compilers, with the view to its amendment in future issues.

Readers of the *Gardeners' Chronicle* who may find themselves in Glasgow for the first time will, if leisure permit, be sure to find their way to Wemyss Bay, the distance to which, from Bridge Street Station, Glasgow, is about 28 miles. The route is chiefly parallel to, and for the greater part of the way is in view of the River Clyde, affording the traveller a fine panorama of the beautiful scenery of Scotland's most celebrated river. The first place of horticultural interest on arriving at Wemyss Bay Station is

WEMYSS HOUSE,

the marine residence of George Burns, Esq., one of the founders of the world-famed Cunard line of steamers. It is one of the most picturesque and interesting of the many remarkable residences to be found on either side of the Firth of Clyde. The entrance to the grounds lies to the left from the railway station about half a mile and only some 30 or 40 yards from the shore. The house stands a few feet above high-water mark at one end of a narrow almost level lawn of considerable length, the latter being fringed and interspersed with fine clumps of evergreen and flowering trees and shrubs, among which were such things as *Escallonia macrantha*, choice *Rhododendrons*, *Olearia*, *Ceanothus*, *Clematis*, &c., luxuriating and blooming profusely.

Almost perpendicular from the landward edge of this lawn rises a background of rock to the height of about 112 feet. Viewed from below there is nothing to suggest anything but crags tastefully clothed with shrubs and trees: *Austrian Pines*, *Pernetias*, *Escallonia macrantha*, the latter at the time of my visit being literally ablaze with the masses of its shining red flowers—*Cupressus*, *Retinosporas*, and many other choice shrubs and deciduous trees intermingling with each other in easy natural fashion. No one looking on the towering height from below could possibly imagine that all this wealth of arboreal growth is a skillfully contrived screen to conceal the existence of a score or more of surprises in the shape of irregular terraces cut out of the solid rock, bowered walks, grottoes, flower gardens in which only such choice herbaceous perennials or alpine plants as harmonise with the features around, *Roses*, and dwarf alpine shrubs, are permitted a place. From every change of elevation and position is obtained a fresh and interesting view of the lovely landscape, which spreads out in such breadth and variety to the south, the east, and the west. The access to these terraces is by a series of flights of steps from the western end of the lawn, and from the eastern end by zigzag walks of easy gradient, all perfectly concealed, so that no artificial line is visible. The scheme and the execution of the whole is the work of Mr. Henderson, the talented gardener, who commenced operations about twenty-eight years ago, and still lives to enjoy the

work of his head and hands, and the confidence of his venerable employer.

On the uppermost terrace is a fine range of plant and fruit houses, the productions in each exhibit all the marks of skilful culture. The most remarkable of these houses is one devoted to a superb specimen of *Cyathea dealbata*, which, as regards its perfect condition, the enormous length of its fronds, and the size of its head, is perhaps unmatched by any other in Europe. The house is a handsome dome-roofed one, about 30 x 30 feet, and the top of the plant fills the upper space with its noble crown of fronds. The stem is comparatively short, being only about 5 feet in length, but is very stout, as may be imagined from the great size of the crown. This last terrace is, as has already been said, 112 feet above the level of the lawn beneath, and its outer edge only about 100 yards in direct line from the shore of the Firth.

The working out of so much picturesque beauty from bare, barren crags in so limited an area has been no mean feat of landscape gardening skill, and the result seems like a realisation of the fabled Babylonian gardens of Nebuchadnezzar.

The water supply of this and another property adjoining, but lying higher and more landward, is a point that will interest visitors who may have similar difficulties to contend with in their own experience. The only available supply of good water for domestic purposes is a fine spring, situate only a few feet above the shore level, and distant about 1700 feet lineal from the point of distribution, which is 150 feet above the level of the spring. A hydraulic ram is placed by the spring. To prevent waste of the spring-water, an enormous reservoir has been constructed at a higher elevation, into which all the surface-water of the surrounding heights is collected. The reservoir holds about 100,000 gallons, and furnishes the motive-power for working the ram. A fall of about 27 feet gives the necessary power to lift an ample stream from the spring to the point of distribution at the height above named, and there is no waste of the valuable spring-water. The system has been laid down this season, and Mr. Henderson says it works admirably.

CASTLE WEMYSS.

Closely adjoining Wemyss House—separated in fact only by a public road—lies Castle Wemyss, the seat of John Burns, Esq., son of Mr. George Burns, and Chairman of the Cunard Company. Here the gardening features are of a broader character. The Castle, a very handsome building, occupies a commanding position on an elevated promontory, from which a most comprehensive view of the extensive and beautiful landscape of the Firth is obtained. Sweeping lawns surround the Castle on the landward side, which have been formed by means of blasting thousands of tons of rock, and are now studded with magnificent clumps of choice *Rhododendrons* and other select evergreens and deciduous flowering shrubs, with here and there fine specimens of *Araucaria imbricata* and other Conifers of the better classes, along with ornamental trees, which, planted only some twenty-five years, have attained striking and effective dimensions. From the lawns beautiful glimpses of Dunoon and the Ben-More Hills of Arran and Rothesay are obtained through skilfully contrived vistas of trees, which impart to the broad expanse of the waters of the Firth the appearance of a grand inland sea or lake. Rolling terraces in grass sweep from the level of the Castle and the lawns down almost to the shore, and terminate at one point in the not very usual feature in garden scenery of a fine pier standing out in the Firth to form a harbour and landing place for the yacht of the proprietor, who in summer lives almost as much afloat as on shore. At the south-western end of one of the lower lawns, almost on the level of the shore, a spacious tennis-lawn has recently been formed, having—as in the case of forming nearly every bit of level surface on the place—entailed the blasting of enormous quantities of rock. And on one side of the tennis-lawn, embowered amongst trees, stands a fine pavilion in which tennis may be

played, but which may, and often is, fitted up as a ball-room or theatre.

A fruit garden of about an acre in extent, surrounded by buttressed walls clothed in choice Ivies, *Ceanothus*, *Clematis*, *Roses*, and many other ornamental shrubs, stands on the level of the Castle, about 100 yards eastward. The garden is well stocked with standard and dwarf Apple and Pear and Plum trees, and the walls with thriving well-trained samples of the same kinds, along also with Cherries. Crops are usually good, but this year they are only scanty, owing to adverse weather in spring. Among the fruit tree quarters a very useful selection of herbaceous and florists' flowers is grown for cutting. A range of fruit-houses extend along the entire length of the northern side of this garden, in which capital Grapes and Peaches were to be seen in fine crops at various stages. Immediately behind these houses are several blocks of span-roofed pits and houses devoted to plant growing, forcing fruit and vegetables. An excellent crop of Strawberries, the last under glass of the season, was ripening in one of the houses, so as to keep up the supply till the first from the open air came in, which was expected to be realised in a few days from the date of my visit. Melons are successfully grown in pots, Mr. Henderson preferring to do them in that way rather than planted out. Large stocks of decorative plants for room and table purposes, and *Adiantum cuneatum* and other useful Ferns for cutting, are very successfully grown. There is also a choice and thriving selection of Orchids, and a good collection of stove and greenhouse plants. About three acres of land are devoted to vegetable culture at a distance of about three-quarters of a mile from the Castle.

It only remains to be stated that the two places which I have briefly and imperfectly attempted to sketch in the foregoing are both under the management of Mr. Henderson, and that the credit of their charming permanent features, and their perfect keeping and culture, belong to him.

KELLY HOUSE.

This fine place is quite close to the Wemyss Bay railway station, and is the residence of Alexander Stephen, Esq., of famous ship-building enterprise. Although an old place, which has for many years been known favourably in connection with gardening, it is at the present time in a transition state, which will in the near future place it in a higher position horticulturally than it ever has occupied. A new residence is in course of erection. It is of princely proportions and style, from the plans of Mr. William Leiper, architect, Glasgow. Situate on an elevated site, it commands a magnificent view of the surrounding scenery. The park is of considerable extent, well wooded. A fine glen traverses a considerable portion of the southern side of the park, in the bottom of which the Kelly Burn, which divides at this point the counties of Ayr and Renfrew, runs its shady course to the Clyde. The kitchen and flower gardens at one point of its course lie on a gentle slope on the northern bank of the stream. A fine range of curvilinear plant-houses in iron extends along the upper side of the flower garden. The latter is of considerable extent, in grass—so extensive and varied, in fact, as to admit of the inclusion of the usual styles of bedding out along with *Roses* and hardy herbaceous plants and ornamental shrubs separately, yet so blended as a whole as to produce a very fine and pleasing effect.

The commodious house occupied by Mr. George Machray, the gardener, who is also factor on the estate, is situated at the north-east corner of the flower garden, and is flanked by a long range of Peach-houses, in which excellent crops were in fine promise. A number of plant-houses and pits are accommodated in an enclosure in rear of the latter range, in which were fine stocks of the usual classes of plants for conservatory and room decoration, and for cutting. Very notable among these were a splendid lot of *Calanthes* showing remarkable vigour. The large iron range before mentioned is stocked

with grand specimen Camellias, Azaleas, Tree Ferns, and miscellaneous greenhouse plants.

It is in contemplation to remodel and extend the glass on a scale proportionate with the splendid style of the new mansion. The grounds also will be remodelled and improved in harmony with the character of the same, and hardly a finer field could be found for the display of taste and skill in landscape gardening. A curious object in one portion of the grounds is a *fac-simile* of the hut in which Dr. Livingstone died. The late proprietor of Kelly House was a personal friend of the great African missionary and explorer, and had Chumah and Susi, two of the Doctor's attendants who were with him when he died, some time at Kelly, and employed them to build the primitive-looking hut, which is as much cherished by Mr. Stephen as by his predecessor in possession of the estate. W. S.

DISEASE OF LILIES.

PERONOSPORA ELLIPTICA.

IN the *Gardeners' Chronicle* for September 10, 1881, p. 340, will be found an illustration and description of a fungus there first illustrated and described by the Rev. M. J. Berkeley under the name of *Ovularia elliptica*. Seven years have passed since this description was written, and I doubt whether any observer other than myself has since seen *Ovularia elliptica* in good form. In ninety-nine cases out of a hundred the perfect fungus is not seen on Lilies dying from the disease, and no trace of it is to be seen on Mr. Berkeley's original examples now at Kew; in fact it is probable that Mr. Berkeley himself only saw the fungus in an imperfect state. No one has said anything new about the fungus since the original description was published, and if any one had ventured to "confirm the *Ovularia*" it would have been a proof that the "confirmer" had never seen it. I have several times seen the conidia or spores upon Lilies, and frequently a mycelium which appeared probably to belong to the fungus. The Lily fungus, as far as my experience goes, does not generally emerge from the stomata, but it usually vegetates as mycelium only within the living leaves and stems. This mycelium grows with such extraordinary rapidity that it will completely destroy a bed of apparently healthy Lilies in a day or two. The Lily stems are left like dead brown sticks, and the leaves hang round the withered discoloured stems like fragments of ragged, brown, sodden tissue-paper. The ravages of the fungus are not confined to the open air, for I have seen its effect upon *Lilium auratum* in greenhouses, but it perhaps preys with the most deadly effect upon *L. candidum*. Various other Lilies are also attacked, and it is probable that no species can withstand the contact of the fungus. It has been seen on *L. superbum*, *L. chalcedonicum*, *L. pardalinum* and others. My neighbours have (happily!) had their Lilies destroyed by wholesale this summer, so that I have had a good opportunity of studying the fungus. I have also been able to produce it in a perfect state by culture, and so to spread it judiciously amongst selected plants. As the fungus seldom produces spores naturally, the mycelium of the fungus is necessarily confined to the interior party of the attacked plants, and this habit of the fungus is not favourable to spreading from one plant to another.

The Lily fungus may be artificially made to perfect itself by cutting a fungus-infested Lily stem in two, whilst the Lily is still in the ground. After a single warm humid night the transverse cut across the stem will exhibit a perfect miniature forest of the so-called *Ovularia elliptica*. Cutting or breaking off the stems of dressed plants therefore greatly aids the spread of the fungus. Now if circumstances have been fairly favourable the fungus growth from the transverse cutting when placed under the microscope, will be seen something like fig. 21, enlarged 400 diameters. The fungus will now be seen to belong less to *Ovularia* than to *Peronospora*, and the parasite may be known as *Peronospora elliptica*.

The fungus is sometimes much more branched than shown in the illustration, and the branches are often much longer, but I have engraved the special specimen on fig. 21 for the reason that I fortunately have the actual example preserved on a glass slide, with all the conidia or spores *in situ*. The illustration shows a single thread emerging from the transversely cut cells of a Lily stem. Now it often happens that the branches of the *Peronospora* get broken off and are seen free as at A, and it must have been from branches like these that Mr. Berkeley reasonably described his fungus as an *Ovularia*. The growth seen at A is nothing but a lateral branch broken from a long stem. It agrees very well with Mr. Berkeley's original illustration in the number of the *Gardeners' Chronicle* above quoted. The spores readily germinate in water or on any damp surface;

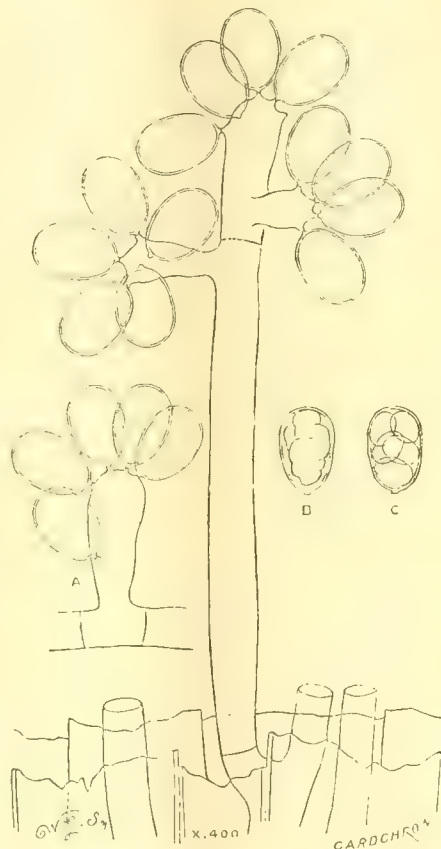


FIG. 21.—PERONOSPORA ELLIPTICA: THE LILY FUNGUS.

certain of the spores produce a convolute mass of mycelium as at n, which, on the opening of the spore, protrudes as a germinal thread; other spores or conidia produce zoospores, as at c. When the zoospores are mature the large mother spore opens and the zoospores sail away, exactly as in the case of the Potato fungus, *Peronospora infestans*. On coming to rest the zoospores in turn open and produce a germinal thread.

The resting-spores which the fungus, no doubt, produces, have not yet come to hand; this is probably owing to the retiring nature of the fungus itself, which requires, as I have shown, a little judicious coaxing to exhibit itself in good form. Mr. Berkeley gave no scale to his little drawing in the *Gardeners' Chronicle*, neither did he mention the size of the large conidia; he, however, afterwards supplied this omission in the pages of the *Annals of Natural History*. The spores shown in fig. 21 agree exactly with the size given by Mr. Berkeley. As soon as the *Peronospora* has run its course, and directly the affected material approaches decay,

another fungus grows on the surface of the leaves and stem, and hastens putrescence; this is *Polyactis vulgaris*, illustrated and described in the *Gardeners' Chronicle* for February 6, 1886, p. 173. A reference to this illustration will show a remarkable similarity between it and the plant before us, but the fungus upon Lilies is different, and enormously larger in all its parts. *Polyactis cana*, a species allied to *P. vulgaris*, has large oval spores, but it seems impossible that *P. cana* could have been mistaken for *Ovularia* by Mr. Berkeley, for Mr. Berkeley was the original describer of *P. cana*. The habit of the fungus on Lilies seems totally different from *Polyactis*, which should invariably grow on plants already rotting; the habit of the Lily fungus, on the other hand, is entirely that of *Peronospora*. The habit of the *Peronospora* of Lilies is considerably like that of *Peronospora interstitialis* of Primulas (see illustration in *Gardeners' Chronicle*, May 1, 1886, fig. 124, p. 564), but whatever decision may be come to as to the name of the fungus of Lilies, the illustration published herewith gives the first exact representation of it.

Hyacinths, Tulips, and other liliaceous plants are probably sometimes destroyed by the fungus here named *Peronospora elliptica*.

In the now familiar scourge of Lilies we seem to have a close ally of the Potato fungus, and one equally difficult to get quit of, as all the involved features of the cause of one disease are repeated in the other. If all infested and dying material is destroyed, it may prevent an attack another year; but unless all Lily growers act in concert, one person's unburnt plants may infect a neighbour's garden, where all diseased material had been carefully burnt or otherwise destroyed. *Worthington G. Smith, Dunstable*. [We may shortly look for the publication of an important series of observations on this fungus by Professor Marshall Ward. Ed.]

THE CHEMISTRY OF VEGETATION, IN REFERENCE TO THE GROWTH OF THE POTATO.

(Continued from p. 151.)

ATOMIC WEIGHTS AND SYMBOLS.

THOUGH out of historical order, it is closely connected with this part of the subject to give here the symbols and atomic weights now adopted of some of the elements with which plant study brings us in contact.

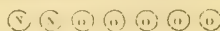
Quite as an arbitrary matter, on account of its lightness, the gas hydrogen, H, was taken as a standard of weight, just as we have an arbitrary yard or an arbitrary pound. H being taken as unity—1, we have now the weights as follows:—O = 16, C = 12, N = 14. P (phosphorus) = 31, Ca (calcium, commonly known when combined with O as lime) = 40; Cl (chlorine), 35.5; Na (natron or sodium), 23; K (kalium or potassium) 39.1.

When a chemist writes, in what is called a formula, CO or Ca, he does not mean any indefinite quantity or weight, but the weight in which the element combines.* The atomic weight is implied in the symbol. The proportions in which combinations take place are indicated by numerals which it has become customary (though in early chemical papers it was not so) to put after the symbol and below the line. For example, the series of combinations of nitrogen and oxygen mentioned above might be written N₂O, N₂O₂, N₂O₃, N₂O₄, N₂O₅.* In the first there are 28 parts by weight of nitrogen to 16 parts by weight of oxygen, and in the last, 28 of nitrogen to 80 of oxygen (5 times 16 equal 80). On the atomic theory, this means that two atoms of nitrogen having together a weight of 28, 14 each, relative to the standard weight atom of hydrogen (taken as 1) combine here with five atoms of oxygen, having each a weight of 16 relative to the weight of an atom of hydrogen. As all analyses are based on what the balance tells us, it is important to have a clear idea of how the chemist records his results.

* It would make this paper too long to enter into the much-discussed question, whether what we call elements are really so.
† N₂O₄ and N₂O₅ are relatively the same as N₂O and N₂O₃.

It is the same when we use a series of circles and so obviate the use of the numbers below the line.

To represent the last named compound of nitrogen and oxygen there would have to be two circles with N included and five with O, thus:—



With each lettered circle the atomic weight is implied though not expressed.

LAVOISIER.

Reference has been made above to the paper by Guyton de Morveau in 1782 on chemical nomenclature. When the wealthy Lavoisier turned his vivacious intellect, yearning apparently for something important to do apart from politics, to the discoveries of Black, Cavendish, and Priestley, he soon put himself in communication with various workers. One day each week he threw open his laboratory, where men of such active thought as Laplace, Monge, Berthollet, and Fourcroy used to meet. Priestley, when in Paris, told them of his discovery of dephlogisticated air. Lavoisier was not long in repeating the experiment, and it remains a deplorable fact for his scientific reputation that he spoke afterwards of having made the discovery about the same time as did Priestley. With Guyton de Morveau he was in correspondence. Everything in Paris was being "reformed" (except morals). Lavoisier determined to be the reformer of chemistry. His system was essentially that of oxygen and its compounds. In the new nomenclature, in which De Morveau so helped him, this was the leading idea. He worked hard and published much, and made chemistry really a science consistent with what was then known.* His work made further work more rapidly possible. It raised questions for experimenters. Though his system has been so modified it may be said to be supplanted, much of the nomenclature still lingers. The "reforms" in the State had passed from one stage to another, till, on May 8, 1794, *Citizen Lavoisier* was guillotined in accordance with the views of the then rulers—"La République n'a pas besoin des savants!" Seventy years later (1864) an official publication of his works in four handsome quarto volumes, was commenced, and in these his writings can be conveniently referred to. The description of apparatus and methods in use in his time is especially interesting. W. S. M.

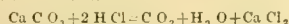
(To be continued.)

FORESTRY.

NOTES ON THE LONGEVITY OF CONIFEROUS TREE SEEDS.—London says European Larch seeds will not germinate after they have been a few months out of the cones. Our experience proves that they will germinate perfectly well eighteen months, and passably well thirty months, after leaving the cones. The belief seems to be general that White Pine seeds become rancid and will not germinate after the first season. Our experience proves that they will germinate thirty months after leaving the cones.

I think further experience will prove that the seeds

* In the paper describing his researches on fermentation Lavoisier enunciated the principle that the weight of the products of any chemical change are equal to the sum of the weights of the products taking part in that change, and that hence chemical changes can be expressed by equations. The fact lies at the root of the "new chemistry,"—new from the period in which he lived as distinct from the pre-Dalton period, and chemists still use equations in expressing the changes. For example, calcium carbonate and hydrochloric acid give carbon dioxide, water, and calcium chloride. The equation is written thus:—



Since it expresses these facts. The combining weights are of Ca, 40, and of C O₂, [C, 12, O, 16 taken three times, 48, 48], 60, together 100. Then 2 H Cl [H, 1, Cl, 35.5, together 36.5; the large 2 means twice this] 73. Thus the sum of the weights 100 and 73 is 173. Then on the other side of the equation we have C O₂ [C 12 and O 16 taken twice] 44, H₂ O [H 1 taken twice, 2, and O, 16] 18, Ca Cl₂ [Ca 40 Cl 35.5, taken twice, 71] 111, and the 44, 18, and 111 together make 173. The sum of the weights on each side of the equation is the same. Experiment by weight first shows what has taken place, and the equation expresses it.

of Colorado Conifers, and seeds of coniferous trees in all dry climates, will preserve their vitality still longer. We had a sack of *Pinus ponderosa* seed from which we sowed five years in succession, and, to all appearance, they germinate the fifth year as well as first. Seeds of *Pimeas pungens* and *Pseudo-Tsuga Douglasii* have germinated with us, apparently, as well the third year as the first. I regret that we had not seeds to try the experiment longer.

Practice has changed wonderfully during the last half century in this direction, and now, instead of keeping seeds in the cones, they are taken out as soon as the cones are gathered and dried, yet some writers on forest subjects still recommend the seeds in the cones till time for sowing. But how can fir seeds be kept in the cones? The cones fall in pieces as soon as the seeds ripen. They will hold together, it is true, if collected before the seeds are ripe, but in that case the cones will become mouldy and injure the seeds. There may be a few species of Pines which will keep longer in the cones than out, such as *Pinus Banksiana*, *P. contorta* and *P. tuberculata*, which hold the hard, dry cones on the trees for many years; but these are kinds which are seldom, if ever, used, and of little value. The white and many other Pines, the Spruces and Arbor-vitas hold the cones on the trees for a short time after the seeds have ripened, but they shed all the seeds as soon as they are ripe, in August, September and October. I do not see how the seeds can be benefited by being left in the cones after they have ripened, nor how they can be kept as safely in cones as in bags.

It is fortunate for the forestry of this country that seeds of forest trees can be kept for years in this manner, otherwise a succession of plants could not well be kept up, for forest trees do not produce seeds every year, even when the seasons are favourable. In the year 1884 I scanned the White Pine trees closely from the head of Lake Michigan to the New England coast, thence from Rhode Island north to the Canada line, thence through the Adirondack Mountains, along the Black River, and into the White Pine regions in Pennsylvania, and saw no trees producing cones. We then sent a collector up into northern Wisconsin and the Michigan peninsula, but he found that the trees were not producing seeds. It is often the case that when forest trees fail to produce seeds in one part of the country they are abundant in another locality; but in this case the only exceptions I heard of were one locality in the Lower Provinces of Canada, and the cultivated trees west of Lake Michigan. What is true of the White Pine is measurably true of all other forest trees, and now, when so much is written on the subject of forestry, it is surprising that so little is written on this branch of the subject. Even if the seasons are all favourable one can hardly expect a crop of White Pine seeds oftener than once in three years. One year is needed for the blooming of the male and female flowers and the fertilising of the embryo cones, the next year for the growth of the cones and the perfecting of the seeds, which draws so heavily on the vitality of the trees that they require the third year to recuperate and form blossom-buds to continue the blossoming the year following. Wherever I had an opportunity to examine, as in New England, or the Adirondacks, and in the Pine belt in Pennsylvania, I found the trees all well set with embryo cones, and our collector reported the same for the region south of Lake Superior, and as these embryo cones were already fertilised, we were certain of a crop of seeds the next autumn. Of course, new seeds are safer and better than old seeds, and will germinate quicker. We make it a rule to sow old seeds thicker than new, and either to sow them earlier, or soften them by soaking before we sow them. Robert Douglas, in "Garden and Forest"

FRUITS UNDER GLASS.

PINES.—Plants which are colouring must receive careful treatment as regards watering. They must not be kept too wet, neither must they be kept too dry; these two extremes must be specially guarded against this sunless season. Give ample air during the process of ripening, to induce high flavour. Should more fruit than is required turn in, the suckers may be detached from the plants, and the plants with the fruit can be removed entire to a dry, cool room, where they will keep in good condition for a considerable time. Most of the winter fruiters will now have passed the blooming stage, and should receive every encouragement to swell their fruit.

Give them frequent waterings with weak manure. This should be varied, as a plant is found to thrive better on a change of diet. A little weak guano, the drainings from a stable or dung-heap, with occasional applications of Thomson's manure, will be found to answer the purpose. Maintain a genial moist atmosphere amongst the plants by damping the surface of the plunging material and paths. A gentle dew from a fine-rosed syringe may be given when the plants are being shut up, and a temperature of 95° may be run up, when sun-heat can be secured in the afternoon. When the pinery has been closed for the day the night temperature should not be allowed to fall below 75°, and when the morning presages a fine day, let the fires be kept at the lowest point, and air should be admitted early, and in small quantities, increasing with the sun's power. When full air is on, the house should stand at 85°. Plants which are intended for special treatment in January should now be allowed to rest by keeping the temperature a little cooler and drier. The plants should also receive less water at the roots. The stock of successions should be kept at high pressure in order to get strong plants before the sun's power declines. Never was there a season when shading was more necessary than the present, as there has been no sunshine for several days in succession and when it did appear it was generally for short periods at a time. This is more injurious than steady sunshine and the shade should be run down whenever the sun appears, and be removed as soon as it becomes obscured.

Suckers which were recommended to be detached and potted last month will be ready for a shift into a size larger pots towards the end of the month, as they would be likely to start prematurely if allowed to remain too long in the sucker pots. Shade slightly and keep a moist atmosphere to establish them. Let the night temperature be kept at 75°. When firing is necessary do not syringe too heavily overhead, rather have recourse to damping the surface of the bed and paths.

VINES.—Vines from which the crops have all been cleared may now have the top and bottom ventilators kept open night and day. Frequently syringe the interior, to keep the foliage clean and healthy. In such a sunless wet season the mulching of outside borders may be dispensed with. Young Vines which are to be started in January for the first time as fruiters, if the wood is nice and brown, may have all the lateral growths cut out to throw all the vigour into the buds for next year. This should only be done up to the length it is intended to fruit them, which may be half or third way up the rafter, where the leader was pinched. The renewal of early Vine borders may now be undertaken where the Grapes have been cut, or are perfectly ripe, as this will give the Vines ample time to make fresh roots, while the foliage is still healthy and vigorous. Commence 6 feet from the front wall of the vinery, by raking out a trench sufficiently wide to allow for proper working. Prick out all the soil from the roots, being careful not to damage them more than can be helped. When all the soil has been removed, the drainage must be overhauled to see that it is in proper condition. Any defects here must be remedied, else all subsequent operations will be in a great measure nullified. If the soil to be used is of a heavy character, a depth of 2 feet 9 inches will be enough for an outside border, but if of a light, porous nature, then 3½ feet may be allowed, but roots at such a depth as this are not such feeders of the Vine as those which are closer to the surface, and in contact with the air. When all is in readiness, commence to fill in the border by placing a layer of turf, grass-side down, and proceed to fill up the border. The roots should be laid out evenly over the surface, which has been made sufficiently firm by treading at a foot from the surface. A mulch of dry straw or a rough litter should be put over the top to retain the warmth in the border, but the temperature should not exceed 85°. The Vines will be all the better for a shade placed over the glass and frequent syringing during the process.

When the Grapes are ripe the temperature must be kept cool, but a little heat in the pipes should be given during dull wet weather. This season late Grapes will have to be largely ripened by means of fire-heat, as on many days there is no sun to assist them. Endeavour to get all late Grapes pushed forward this month, as they do not make rapid progress after the middle of September. Assist them with weak manure where it is necessary to water the borders. Pinch out lateral growths before they rob the Vine of any virtue which should be transmitted to the fruit. W. M. Baillie, Luton Hoo.

Advertisers are specially requested to note, that, under no circumstances whatever, can any particular position in the paper be guaranteed for advertisements occupying less space than an entire column.

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APPOINTMENTS FOR THE ENSUING WEEK.

SHOWS.

WEDNESDAY, AUG. 22 { Newcastle-on-Tyne (three days),
Shropshire, and Shrewsbury (two days).

THURSDAY, AUG. 23 { Royal Horticultural of Ireland,
Aberdeen (three days), Wilt-
Basingstoke, Calne, and Dun-
keld.

FRIDAY, AUG. 24—Perth (two days).

SALES.

MONDAY, AUG. 20 { Trade Sale of Dutch Bulbs, at Pro-
theroe & Morris' Rooms.

THURSDAY, AUG. 23 { Trade Sale of Dutch Bulbs, at Pro-
theroe & Morris' Rooms.

FRIDAY, AUG. 24 { Established and Imported Orchids,
at Protheroe & Morris' Rooms.

SATURDAY, AUG. 25 { Trade Sale of Dutch Bulbs, at Pro-
theroe & Morris' Rooms.

Few things, from a literary point of view, have a less inviting appearance than the Returns issued each month by the Board of Trade, entitled "Accounts relating to the Trade and Navigation of the United Kingdom" for each month during the year. Some 126 pages of figures to the "untrained eye" have a somewhat repulsive appearance, but the "trained" observer will find these pages brimful of interesting facts on matters concerning every inhabitant of the United Kingdom, and Ireland. In very many ways do they concern the horticulturist, the agriculturist—the arboriculturist, the owner or occupier of every acre of ground not covered by bricks and mortar. Something of this will be found set forth in a recent article in our columns relating to a proposed "Agri-Horticultural Council." Something in addition will be found in Mr. DUNN's address to the Scottish Arboricultural Society reported in our last issue. Perhaps the recent great Colonial and Indian Exhibition showed how much the three "cultures" above noted contribute to the world's prosperity, therefore any trustworthy evidence we can produce in favour of any scheme for "self-help" is entitled to some space in our columns. From the "Trade Returns" above noted we learn how much we are indebted to the foreigner and to our Colonial brethren for our "daily bread," and are furnished with an incentive to keep as much as may be possible of our cash at home, and to find employment for what is now termed our "surplus population." Such was not, so far as we are aware, the original idea in publishing these Returns; but then, to suggest a humble simile, no tailor in designing a dress-coat and bifurcations has any idea that they may ultimately serve the (agriculturally) noble purpose of a scarecrow!

The introduction to these "stock tables" con-

sists of "summaries of imports from foreign countries and British possessions," thus:—

	Month ended July 31.		Increase (+) or Decrease (-)
	1887.	1888.	
Animals, living (for foot)	£. 711,061	£. 757,975	+46,914
Articles of food and drink—duty free ..	10,388,986	11,270,117	+881,131
Articles of food and drink—dutiable ..	2,552,383	2,400,647	+151,736
Chemicals, Dyestuffs, and Tanning Substances	490,645	511,412	+20,767
Raw materials for textile manufactures ..	4,113,202	3,731,640	-381,562
Raw materials for sundry industries and manufactures ..	3,444,180	3,731,094	+286,914
Total value of principal imports ..	28,958,156	30,706,412	+1,748,256

These few introductory lines are amplified in other tables, from which we may from time to time make extracts of such items as relate to matters within our scope.

The figures we now lay before the reader refer to vegetable products chiefly, omitting those of purely agricultural interest, and show the consumption of the articles specified in the month ended July 31, 1888, as compared with the corresponding period of 1887.

Articles.	Quantities.		
	1887.	1888.	In-crease (+), De-crease (-).
<i>Articles of Food.</i>			
Fruit:—			
Apples bush.	19,417	43,786	+24,369
Oranges and Lemons... ..	114,393	105,462	-8,931
Unenumerated, raw	307,052	375,923	+68,871
Onions	162,517	221,210	+58,693
Potatoes:—			
Germany cwt.	900	315	} +132,313
France	211,358	208,533	
Other countries	595,008	750,731	
<i>Raw Materials for Textile Manufactures.</i>			
Flax, dressed, &c. ... cwt.	101,560	215,366	+113,806
Hemp cwt.	107,393	107,401	+8
<i>Raw Materials for Sundry Industries and Manufactures.</i>			
Caoutchouc cwt.	13,285	12,119	-1,166
Gutta-percha	1,485	1,015	-470
<i>Paper materials:—</i>			
Linen and cotton rags .. tons	2,783	4,226	+1,443
Esparto... ..	26,350	23,011	-3,339
Pulp of wood	5,590	8,636	+3,046
<i>Wood and timber:—</i>			
Hewn loads	188,467	221,430	+32,963
Sawn, &c.	686,897	724,773	+37,876
Staves	14,027	11,217	-2,810
Mahogany... .. tons	2,573	4,327	+1,754
<i>Manufactured Articles.</i>			
Hats or bonnets of straw .. lb.	6,933	9,772	+2,839
Paper for printing or writing cwt.	19,486	33,177	+13,691
“ other kinds, except hangings	110,754	136,482	+25,728
Straw plaiting for making hats or bonnets ... lb.	1,289,605	495,215	-794,390
<i>Miscellaneous Articles.</i>			
<i>Seeds:—</i>			
Clover and grass ... cwt.	3,198	10,987	+7,789
Cotton ton	20,850	9,105	-11,745
Flax and Linseed ... qrs.	117,160	189,536	+72,376
Rape	79,259	53,298	-25,961

* Some sections, not pertinent, are omitted.

We may here recommend to the compiler of these Returns that the plus and minus columns should range with the monthly Returns; the whole matter might then be seen at a glance, and so save turning over several pages each time a comparison has to be instituted.

It will be very easy to extend these figures should it be deemed requisite. Particulars as to sources of supply might in many cases be advantageously supplied, and thus our home-growers and our Colonial fellow-subjects may be made acquainted with details which it is desirable they should know. It may be mentioned that the entries in these Returns increase or decrease as the cheery harvests ripen in the lands beyond the sea.

"BOTANICAL MAGAZINE."—The August number contains figures of the following plants:—

Trevesia palmata, t. 7008.—An Araliaceous shrub, with broad fan-shaped, spreading leaves, of noble aspect. The flowers are like those of the Ivy on a large scale, but with a disagreeable heavy smell. It is a native of tropical jungles of the Central and Eastern Himalayas, and of the hot, humid regions of the Khasia Mountains and Chittagong. It flowers every winter in the Palm-house at Kew.

Echinocactus Haselberghyi, t. 7009.—This will be esteemed a little gem by lovers of succulent plants. It is the size and shape of a small or medium-sized Orange, and thickly covered with tufts of silvery spines, which cross and interlace in all directions. The petals are small, orange, margined with red. The native country is not known. Hort. Kew.

Sarcocylus Hartmannii, t. 7010.—A Queensland Orchid, with fleshy lanceolate leaves, stout, erect, many-flowered racemes, each flower being about three-quarters of an inch in diameter, nearly regular, stellate, whitish, with a few red bars at the base of each segment. The lip is very minute, the fleshy, pouch-like lateral lobes ascending and much exceeding the minute central lobe. Hort. Kew.

Aristolochia Westlandii, t. 7011.—This was originally described by Mr. Hemsley, in the *Journal of Botany*. It is a native of the mainland of China, opposite Hong-Kong, and has cordate oblanceolate acuminate leaves and very large flowers, each with a cylindrical tube, bent at an acute angle, and expanding into a flattish cordate ovate limb, 6 inches across, of a creamy-white colour, with a central blotch of purplish-brown, and the nerves of a similar purplish colour. Hort. Kew.

Narcissus pseudo-Narcissus var. Johnstoni, t. 7012.—A variety with a tubular yellow crown as long as and of like colour with the narrow lanceolate segments. See *Gardeners' Chronicle*, 3rd series, 1887, p. 288.

"KEW BULLETIN."—The August number is taken up with the subject of colonial fruit, and contains information relating to fruit production in the several West India Islands and British Guiana.

JOHN BAIN MACKAY.—We regret to hear of the decease, at the ripe age of 93, of this gentleman, long known in the horticultural world, and a warm supporter of the *Gardeners' Benevolent*. Mr. Mackay resided for many years at Totteridge, and it was in his garden that the much-contested *Abies Lowiana* first produced its cones.

KRAKATOA.—Readers will remember the fearful volcanic eruption which in August, 1883, overwhelmed the island. Every trace of vegetation was destroyed. Mr. HEMSLEY contributes to *Nature* an account of Dr. TREUB's recent visit to the island, and of the way in which it is becoming repeopled. The island is only 3 miles across, and rises almost perpendicularly from the sea on one side to a height of 2500 feet, while on the other it presents a steep slope. The nearest adjacent island is 10 miles distant, but 20 from any source of vegetation. The whole island is now covered with a layer of cinders

and pumice, varying from 1 to 60 metres in thickness; it is uninhabited, uninhabitable, and difficult of access. Winds, waves, and birds have, however, contributed to clothe part of the island with Ferns, of which eleven species were collected. Previous to the Ferns, and preparing the way for them, were fresh-water Algae of various kinds, which supplied a

ment of North-west India has issued a valuable treatise on the grasses used in the plains of North-west India for forage or for fodder. Mr. DUTHIE has collected largely himself, and he has carefully studied the herbaria and libraries within his reach; moreover, he has availed himself freely of the labours of specialists. The genera are arranged according to

ness is not flattering, and the details are too obscure to be of use for discriminating doubtful species.

BOTANICAL BOOKS.—Mr. WHELDON, Great Queen Street, W.C., has published a useful list of horticultural and agricultural books, as well as others relating to botany and to forestry.



FIG. 22.—*STURTIA PSEUDO-CAMELLIA*: HARDY SHRUB: FLOWERS WHITE. (SEE P. 188.)

hygroscopic property in the absence of which the Fern spores could not have grown. The flowering plants were such as generally take possession of newly raised coral islands, while on the shore were found seed-vessels such as are commonly washed up on the shores of the Malay Archipelago, &c.

THE FODDER GRASSES OF NORTHERN INDIA.

—Mr. DUTHIE, the Director of the Botanical Depart-

ment of North-west India has issued a valuable treatise on the grasses used in the plains of North-west India for forage or for fodder. Each species is described botanically, its use, and the method of cultivation being also indicated. The native names are added, as well as indices and appendices; so that the book is very complete, and Mr. DUTHIE'S reputation is a guarantee of its correctness. The text is accompanied by a series of quarto illustrations, which being Nature-printed convey an accurate idea of the general appearance of each plant, though the like-

CROPS IN CORNWALL.—Those who do not possess a practical knowledge of the subject (remarks the *Cornishman*) have asserted that the recent surplusage of rain has had some good results; it has furnished an abundant supply of grass, and favoured roots and Broccoli. Not only is grass plentiful at the expense of nutrition, but Mangels and Turnips have too much moisture, and do not look half so promising as if there was more sunshine and warmth.

The same is said of Broccoli. This crop certainly has not required the costly and tedious hand-waterings it wanted last year to enable the young plant to root and live, but the rain has proved too much either for a thoroughly wholesome look or a satisfactory condition. Then the unusual moisture has encouraged unusual weed-growth. Ground hoed a fortnight only has been thickly covered with weeds. Many an acre of early Broccoli round Penzance is in rows, the soil banked, or "earthed-up," each side the plants. This was done to "turn the weeds down," and so prevent the ground from being, as is seen in level land which has been hoed and hoed again, densely clothed with weeds. These furrows between each row of Broccoli had one good influence on Tuesday in last week; they allowed the heavy down-pour more easily to pass from the fields to drains. In many instances, however, much soil was washed across pathways, drains were choked, and ponds formed in unaccustomed and inconvenient places. Last year the market-garden land was arid; now it is sodden. Last year there was too little rain; this year there is too much.

EXCURSION TO THE CHANNEL ISLANDS.—A party of our Belgian friends propose visiting the Channel islands with a view of inspecting the horticultural and agricultural industries of those favoured islands. The route to be taken is Antwerp, Harwich, London, Southampton, Guernsey and Jersey. The party will leave Antwerp on August 24, spend four days in the islands and then return.

RICKMANSWORTH (MOOR PARK) HORTICULTURAL SOCIETY (August 15).—This Society held its annual exhibition on the above date. The feature of the show was the magnificent bank of plants contributed by Mr. Deane, gr. to the Earl of Essex; Mr. Condie, gr. to S. J. Blackwell, Esq.; Mr. Myers, gr. to the Earl of Clarendon; and Mr. Bye, gr. to Mrs. Gladstone. Mr. Mundell, gr. to Lord Ebury, Moor Park, set up in a separate marquee an immense collection of representative decorative plants, and a fine collection of vegetables and fruit. Cut hardy flowers were a special feature. Mr. J. W. Odell, gr. to W. Barber, Esq., Q.C., Pinner, contributed a rich collection of over one hundred species of alpine and herbaceous flowers: whilst from Moor Park came a fine collection of perennials and florists' flowers. One entire tent was devoted to wild flowers, nearly a hundred baskets being contributed. The named collections of wild flowers were especially good, and errors of nomenclature few.

BOTANICAL SOCIETY OF ITALY.—The first annual general meeting will be held on September 7, on which occasion the Tuscan Horticultural Society will inaugurate an exhibition of fruit and flowers.

MR. WILLIAM MILLER.—We are pleased to be able to congratulate our acute correspondent, Mr. WILLIAM MILLER, of Combe Abbey gardens, on the extraordinary success of his son at the recent examinations on board the school-ship *Conway*. We trust such success may be the forerunner of a distinguished career.

ATHERSTONE HORTICULTURAL SOCIETY.—On the 6th inst. this Society held a successful show, attended by about 15,000 people, £322 18s. 4d. being paid for admission. The exhibits were so numerous that seven tents had to be erected. Mr. PARKER, of Rugby, took the 1st prize for a group, showing excellent taste. The competition was very keen here. Mr. ALLUM, Tamworth, 2nd. Mr. J. ALBRIGHTON showed Carnations and Picotees. Mr. MAYNARD and Mr. FORSEY were very successful in the fruit classes.

CONFERENCE ON FRUIT CULTURE.—We have received from Mr. P. W. FAIRGRIEVE, Dunkeld Gardens, a programme of a conference on methods of fruit culture in that district to be held by permission of the Dowager Duchess of ATHOLE in the Dunkeld Gardens on the 31st inst. A strong committee

has been appointed, with Mr. M. DUNN of Dalkeith as Chairman, who, after the fruit-houses and gardens have been inspected by the visitors, will deliver an address on fruit culture, to be followed by a discussion, and any questions concerning culture and varieties of fruit in Dunkeld and district will be answered by Mr. FAIRGRIEVE. The invitations to take part in the conference are limited in number.

STUARTIA PSEUDO-CAMELLIA.*

ACCORDING to the *Genera Plantarum* there are but three species of this interesting genus. All are decidedly handsome plants, and are amongst the most desirable of ornamental flowering trees or shrubs. Two are North American, viz., *S. pentagyna* (*Botanical Magazine*, 3918), syn. *Malachodendron ovatum* (*Botanical Register*, 1104), and *S. virginica*, of which a full-page engraving appeared in these columns for October 6, 1887, p. 433. The Japanese species now figured (fig. 22, p. 187) flowered in the Coombe Wood nurseries of Messrs. Veitch, and was exhibited by them at one of the recent meetings of the Royal Horticultural Society. As yet, as far as British gardens are concerned, *S. pseudo-Camellia* is a rare plant, although it has been cultivated on the Continent for many years. The specimen from which the figure in the *Revue Horticole* was prepared fruited in 1878, at Sceaux, in the nurseries of Messrs. Thibaut & Keteleer; this firm bought it from Siebold about ten years previously, on the occasion of the first International Exhibition at Amsterdam. Three years ago flowers were produced by a bush trained to a wall in the nurseries of Rodger, McClelland & Co., at Newry.

The following extracts are taken from a Japanese folio which gives very nice figures of many fine Japanese shrubs and trees; its English title is "Figures and Descriptions of Plants in the Koishikawa Botanical Garden. By Keisuke Ito, 1883." "The plant is found wild in Huyeizan (Yamashiro), Hasedera (Yamato), Nikko (Shimotsuke), Kurotakisau (Omi), Komono (Ise), and also in some mountains of Kiuisu. It is a deciduous tree with alternate leaves and branches. Its height is more than a *jo*. Some are large enough to require both arms' length to embrace the trunks. The bark is of a reddish-brown colour; the outer bark peels off in scales. The tender branch is of a pale green colour having reddish spots. Leaves are short-stalked, oblong, about three *sun* in length, acute, crenate, and rough. . . . Flowers are five-petalled, pure white, lovely: they resemble in shape those of the *Tsubaki* (*Camellia japonica*), hence its name." *G. Nicholson*.

SOCIETY OF AMERICAN FLORISTS.

THE following is the programme of the meeting to be held next week in New York, and which we print as furnishing suggestions which might be adopted here with advantage:—

TUESDAY, AUGUST 21: Morning Session, (10 o'clock).—Address of Welcome;—Response;—President Hill's Address;—Reports of Secretary and Treasurer;—Reports of Standing Committees;—Reports of Special Committees;—Miscellaneous Business;—and Discussion of President's Address.

Afternoon Session (3 o'clock).—Essays:—"The Elevation of Our Business," by H. H. Battles, Philadelphia, Pa.; and "Ferns, Palms, and other Decorative Plants," by C. D. Ball, Holmesburg, Pa.

Evening Session (8 o'clock): Question Box:—

1. What benefit is derived by florists from a scientific education. Answered by A. E. Whittle, Albany, N. Y.

2. Is the sale of Chrysanthemums an injury to the cut flower trade? Answered by J. M. Jordan, St. Louis, Mo.

3. Is a wholesale market for the sale of cut flowers desirable in our large cities; and if so, what is the

best manner of organising and conducting such? Answered by J. C. Vaughan, Chicago, Ill.

4. Horticultural Exhibitions: what is their value to the florist, and what can be done to render them more profitable and popular? Answered by John Thorpe, Pearl River, N. Y.

5. Can *Ixoras*, and other flowering stove plants, be grown so that flowers can be sold at a profit? Answered by John G. Gardner, Jobstown, N. J.

6. What varieties of Orchids are of easiest cultivation and most profitable for florists who are not professional Orchid growers? Answered by Benj. Grey, Malden, Mass.

7. What are the best varieties of Ferns to grow for general retail business? Answered by Robt. Craig, Philadelphia, Pa.

8. Which are the most desirable varieties of Chrysanthemums to grow for cut bloom for market, including the earliest and latest varieties? Answered by John Henderson, Flushing, N. Y.

9. What are the best six Carnations for the general florist to grow—colours red, pink, yellow, and white? Answered by Charles T. Starr, Avondale, Pa.

10. What is the best way to propagate *Acacia pubescens*? Answered by Robt. J. Halliday, Baltimore, Md.

11. Is the mail trade in plants an injury to the general business? Answered by Robt. George, Painsville, O.

WEDNESDAY, AUGUST 22: Morning Session (10 o'clock).—Nomination of officers for the ensuing year.—Essay, "Roses: from the Retailer's Standpoint," by Thomas Cartledge, Philadelphia, Pa.

Afternoon Session (3 o'clock).—Essay, "Roses: from the Grower's Standpoint," by Edwin Lonsdale, Chestnut Hill, Pa.; and "Report on Hail Insurance," by J. G. Esler, Saddle River, N. J.

Evening Session (8 o'clock): Question-box:—

1. What varieties of Roses introduced within the last two years, if any, are worth growing for winter forcing? Answered by M. A. Hunt, Terre Haute, Ind.

2. What are the best and most profitable varieties of Hybrid Perpetual Roses to grow for forcing for early and late use for general florist? Answered by Ernst Asmus, W. Hoboken, N. J.

3. How many varieties of Tea and Hybrid Tea Roses are necessary for the general grower; and which are the best varieties to grow? Answered by J. M. Gasser, Cleveland, O.

4. Does propagating from blind shoots year after year have a tendency to render any plant less floriferous? Answered by Jas. Pentland, Baltimore, Md.

5. Can *La France* and other Roses be forced profitably in pots during winter? Answered by W. K. Harris, Philadelphia, Pa.

6. Why do certain Roses, such as *Perle*, *Souvenir*, &c., that used to be favourites for forcing, now seem to grow less satisfactory every year? Answered by M. A. Hunt, Terre Haute, Ind.

7. Will the larva of the Rose-bug stand freezing? In other words, is it safe to spread infected soil taken from the greenhouse and grow sod upon it for future use? Answered by Robert Craig, Philadelphia, Pa.

8. Are we not overdoing the Rose business for cut flowers? Answered by B. P. Critchell, Cincinnati, O.

THURSDAY, AUGUST 23: Morning Session (10 o'clock).—Election of officers. Essays, "Soils and Fertilisers," by J. H. Taylor, Bay Side, N. Y.

Afternoon Session (3 o'clock).—Essays:—"Modes of Heating, and their relative Cost of Construction and Operation," by J. D. Reynolds, Riverside, Ill.; and "Nomenclature," by Robert J. Halliday, Baltimore, Md.

Evening Session (8 o'clock): Question Box:—

1. What is the best method of preserving wood in greenhouses? Answered by S. Kehrmann, jun., St. Louis, Mo.

2. What is the best mode of building horticultural halls, with a view to cheapness of construction, plenty of light, and adaptability to exhibition of plants, flowers, and fruits? Answered by J. N. May, Summit, N. J.

3. What has been the result of slate benches the past season; and effects of same on plants planted out on them? Answered by John Smith, Yonkers, N. Y.

4. What is the best insecticide for general use in the market to date? Answered by Robert Craig, Philadelphia, Pa.

5. Has the use of greenhouses constructed entirely of iron and glass been satisfactory in this country? Answered by P. A. Schmitt, Glenville, O.

* Maximowicz in *Mélanges biologiques*, p. 201 (1865); *S. grandiflora*, Briot in *Revue Horticole*, 1879, p. 430 (coloured plate).

6. The uses of the thermometer and the hygrometer in plant-houses? Answered by Charles P. Anderson, Flushing, N.Y.

7. What is the best way to use natural gas in flues and under steam and hot-water boilers? Answered by J. B. Ferguson, Pittsburg, Pa.

8. Insuring Greenhouses: what companies assume risks of this kind on stock and houses? Answered by J. N. May, Summit, N.J.

N.B. The Question Box, as heretofore, will form an important part of the proceedings. Most florists have questions to ask. Don't be afraid to write them on your business card and drop them in the box. The President will appoint competent members to answer them at the first convenient opportunity.

FRIDAY, AUGUST 24.—The New York Florist Club will tender an excursion to the Society, and hope that every member will so arrange his plans as to accept of their hospitality.

HOME CORRESPONDENCE.

Correspondents will greatly oblige by sending early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

Photographs or drawings of gardens, or of remarkable plants, trees, &c., are also solicited.

LIFTING DAFFODILS.—From the opinions and experiences which have been advanced on the above subject, it is obvious that most growers are adopting Mr. Burbidge's suggestion of following out in practice what seems to suit individual circumstances, and seeing the difference of soil and climate, it would not be prudent to work otherwise. Deep and shallow plantings are indulged in, as are also annual and triennial lifting, with equally good results on all sides. Growing them with and without manures has also received attention, and successes scored by both. What a very accommodating plant, then, is the Daffodil! Were I planting them upon a naturally rich fertile loam, I would certainly avoid the use of crude manures, or may be manure of any kind; but on the contrary, had I to plant on a very sandy, or light stony or gravelly soil, I most certainly would employ raw cow manure—and plenty of it—till my land bore evidence of being able to grow a crop without it. The soil with which I have to deal was formerly a meadow to which manure of any kind had been a foreigner for many years. It is of fair depth, varying from 18 to 20 inches of good soil, followed by a thin stratum of sandy marl, and below this a deep bed of fine gravel. In times of drought the surface will become dust dry several inches deep, while an impervious crust forms on the surface when heavy rains are succeeded by hot sun. A year or two back it was as poor as it well could be, but repeated heavy dressings of cow manure have put it, to use a gardener's phrase, "in good heart." Such, then, is the soil upon which our Daffodils are grown, and the results which I have obtained amply justify the treatment accorded them. Last week I lifted a batch of the Tenby Daffodil, planted in September, 1886, being the refuse of a collected lot, the bulbs weighing on the average less than three-sixteenths of an ounce: the single bulbs now weigh on an average $1\frac{1}{2}$ ounce, while those which have become breeders, and have from two to four good-sized offsets, would weigh much more. Emperors are simply marvellous, some of the stock bulbs of which contain five and six fine offsets and weigh upwards of 12 ounces. Many other sorts are equally fine, and among these Horsfieldi deserves mention. These were all planted in the autumn of 1886, but were examined last year and I decided that they should remain, for the reason that the offsets were small, and it was considered that these latter would make greater progress attached to the parent bulb than if separated from it, and which is now proved to my satisfaction. To have left these a third season would be committing a serious error, for by that time all the best offsets will make grand flowering bulbs for sale, therefore the advantage of an annual examination to see the progress made and then be guided according to individual circumstances and requirements. I do not at present see the use of annual lifting or the benefit accruing from it, but am of opinion it is most likely to benefit the breeders if any, and only such of these which make good offsets in one season, and of sufficient size for detaching from the parent bulb. I cannot see that merely lift-

ing, cleaning and transplanting is likely to produce any marked improvement, for the bulb of a Daffodil is not so gross feeding as to impoverish the soil about it in one or even two seasons. To give the matter a fair trial, however, I have selected a variety of sorts, and intend treating them as Mr. Walker recommends and carefully note the results. A word of warning in conclusion: any of your readers who contemplate lifting their Daffodils this season and have not done so, should see to it at once, as some varieties—the earliest flowered ones in particular—have commenced fresh roots without losing the current year's foliage; a state of things evidently brought about by the successive and continuous rains of the present season. E. Jenkins.

I did not take part in a recent discussion on this subject, because I was at the time engaged in making observations about it. I had a fine bed of hybrid Daffodils called Bernardi, which flowered well and seemed in every respect healthy. When the leaves began to turn at the beginning of July I dug up part of the bulbs, and I stored them in open well-ventilated wooden trays, such as Mr. James Walker uses, the pattern of mine being taken from his, and put them in an airy dry shed. The greater part of these lifted bulbs are now soft, and either partly rotten or likely to rot when planted again. Those left in the ground are perfectly sound, and firmly rooted with growing roots. My inference is this:—as long as the soil is wet, the root-action remains active, even after the leaves are quite dead, and enables the bulb to get rid of its superfluous moisture into the soil. But if the bulb is dug up and the root dried off, it is unable to get rid of its superfluous moisture by evaporation, and it rots. It is a question therefore whether in a wet season it is not better to leave all Daffodil bulbs in the soil. I send specimens, and should be glad if the Editor would briefly report on them. C. Wolley Dod. [The specimens sent amply confirm the above statement. Ed.]

THE POTATO CROP REPORTS.—I fear many a gardener, whose report as to the earlier appearance of the Potato crop appeared in a recent issue, will feel that there is now a wide difference between the anticipation and the realisation—that, in fact, the freshness and vigour of the Potato breadths have given place to disease and decay. I would venture to suggest that in future the reports upon the Potato crop should be furnished fully a fortnight later than usual, indeed should be as nearly as possible all written during the first week in August, or even a little later. The disease in its virulent form usually appears suddenly and spreads rapidly, so that breadths apparently healthy in one week may be blackened the next week. This year I found that the tops stood wonderfully well through the heavy rains, in spite of the terribly sodden condition of the soil, but when one or two warmer days were succeeded by dense mists at night, the *Peronospora* then spread with marvellous rapidity. The inference is that, assuming the atmosphere at certain seasons to be rife with the fungoid spores, heavy rains wash them from off the foliage, whilst mists and a quiet atmosphere induces not only the settling of the spores on the foliage, but also rapid fertilisation. Generally, all through this district now (August 11) Beauty of Hebron, Early Rose, and some other first earlies have lost every leaf; second earlies are fast losing their leafage, and late ones are still fresh, just in proportion to their being late planted and immature. Thus a day or two since I saw a huge breadth of Early Rose, or Beauty of Hebron, without a green top, whilst close by was another big breadth of a later kind, green and fresh, as though the *Peronospora* was a fiction. The proportion of diseased tubers so far, I learn, is not large, but it is comparatively early for the tuber development of the disease in any considerable way; still, should it turn out that, in spite of the considerable fungoid destruction of leafage, the tubers are not materially affected I shall ascribe the result to the heavy beating by rain which the soil has received, which has rendered the surface almost impervious to even the minute spores; that, however, has to be proved. I would urge all gardeners when lifting their crops first to let the tops die away, if not cut off or pulled. There seems to be no doubt but that disease-spores are present in the air until the tops are quite dead, and the tubers cast out upon the surface of the soil, especially when, as now, the skins are thin and tender, are apt to become affected quickly. Of special interest would be the results of general observation as to which tubers were found on lifting to be most diseased—

whether those nearest the surface, or those portions of such tubers nearest the surface, or those nearest the main stems. The result may help to throw some more light upon the point as to how far disease in the tubers is generated through the plant stalks, or through spores washed into contact with the tubers through the soil. One thing the season so far has made specially obvious is, that certain conditions of maturity seem to favour the spread of the disease in the Potato plants, and why that should be so is well worth inquiry. That such is the case is evident when late Potatoes, yet fresh and full of vigour, are seen side by side with rows of early kinds, which have hardly a green leaf left on them. A. D.

HYBRID PITCAIRNEA.—In the spring of 1887 I crossed *Pitcairnia punicea* with the pollen of *P. staminea*. The plants—about forty—raised from these seeds, are all flowering just now for the second time. Some of the seedlings resemble the parents. As every one knows, *Pitcairnia punicea* is a real pygmy in the family of the *Pitcairneas*. The flowers of my seedlings do not resemble the flowers of the parents. The plant is a very robust growing one and as a green foliage plant I think that they are equal to three-year seedlings of *Dracæna indivisa*. My *Pitcairneas* grow very well in rooms and consequently are very suitable for furnishing purposes, but the prettiest state of the plant is when it is in flower. The flower-spike is of a greenish-red colour at the base, which became reddish-crimson at the top of the spike. The flower-spike itself, from the fresh flower branchlets to the top of the spike, is between 42 and 45 centimetres long; the whole flower-spike, from the leaves to the top of the spike, being between 65 and 70 centimetres; the whole plant, from the pot to the top of the flower-spike, being between 110 and 125 centimetres. The flowers are of a very bright crimson; the leaves of the plant vary in length between 60 and 115 centimetres; they are dark green, the under part of the leaves, as well as the whole flower-spike, being covered by a cottony substance, as in well-known *Pourretia maidifolia*. I call my plant *Pitcairnia Bardetiana* ×, and I am sure that it will very soon be a favourite. I enclose photograph of the plant and of a single flower. F. Bardet. [There are thirty or forty species of *Pitcairnia* of this style, which are closely allied to another. So far as the photograph, the plant might be *P. angustifolia*, Sw., or a near ally. J. G. B.]

THE HEDGEHOG'S CRY.—Recently, for two nights in succession, a shrill cry was heard in proximity to my residence, which was variously attributed to "some bird," or to the son of a neighbour, supposed to be amusing himself by whistling into the barrel of a key. Greatly as the sound resembled the latter source of melody its frequent repetition during the late hours of the night at length necessitated the abandonment of that hypothesis. In the strict spirit of science hypothesis was now exchanged for practical experiment, in the hopes of revealing the "why?" A lantern was procured, and guided by the apparent source of the sound, the investigator was speedily directed to a brick area surrounding the basement of the house. The bottom of the area is about 4 feet below the surface of the garden and cemented at the bottom. There, crouching, in one corner, the musician was captured, the lamp was turned on him and thus was revealed a hedgehog. The first proceeding of the captors was to give the poor captive some food, of which judging from his eagerness to partake, he stood in need, and, then to search available books to see what was said therein of the vocal powers of the animal. Neither White of Selbourne, nor Bell (also of Selbourne) says one word about this subject, and hence my note of inquiry to your readers to know their experience. For my own part it is the first time that I have heard

"The voice of the hedgehog;
I heard him complain."

Since a bed of hay has replaced the cold stone, and a supply of food has been provided, he has been as mute as a turtle. It is interesting to note that Bell in his *British Quadrupeds* alludes to the power of the hedgehog to fall down asleep without injury to himself. *Hystrix*.

CATALPAS.—During a recent visit to the Botanic Gardens in Brussels, I noticed a Catalpa tree loaded with thousands of blossoms, and, judging from its size and height, it must, one would think, have been planted shortly after the introduction of the tree into Europe, viz. (as authors say), in the year

1726. It, however, seems a wonder to me why such a beautiful tree is so seldom seen in English gardens. It has one special recommendation, that whereas other trees have finished blooming, the Catalpa in August is in all its glory. Thus last August I noticed a very fine one in the public garden at Richmond lately owned by the Duke of Buccleuch. I have not seen more than half a dozen of these trees in England during the last twenty years. It will grow in London, for there, is or lately was, one in Park Lane. I planted two several years ago in the grounds of the Lock Hospital, in the Harrow Road, and two in the gardens of the Athenæum, Morley Hospital, Wimbledon, and these have done well. I believe one reason for its scarceness is that, like my favourite Tulip tree, it does not blossom till several years after being planted, but, independent of this, the golden-leaved variety deserves a place in gardens for its beautiful foliage. I treat it as I do the Tulip tree for the first two or three years after transplantation—I have a matting or hay band placed over it during winter. With some protection the tree would do well in the Southern Counties. In some parts of Belgium I noticed specimens of what I supposed were the variegated forms of *Acer polymorphum*, encircled by plants of Purple Hazel, which had a very pretty effect. *John Colebrook*. [The Catalpa is a good town-tree, but apt to lose its branches. *Ed.*]

POTATO DISEASE.—As is well known, the fungus which causes this disease is seldom seen till the end of July or the beginning of August. Until the end of July nothing whatever was seen by me of it here, but during the first days of August a few purple-black flecks appeared on the Potato leaf-tips with the mildew beneath; the two sunny days of last week dried the fungus temporarily. To-day (Sunday) I have been over the workmen's garden plots; now the fungus is general—no varieties are free, and a few plants have already fallen into putridity. At this time the weather is all in favour of the fungus, and the Potatoes are at a disadvantage, for the wet summer has caused a great development of juicy haulm. Some of the Potatoes were lifted here last week, and I now observe the fungus-infested haulms (some still green) neatly laid in heaps at the plot corners, the white fungus itself being quite visible to the unaided eye: other blight-stricken haulms are on the paths, to be trodden in—still others are laid one on another upon heaps of stable manure, ready for digging into the ground. The fungus is not at its worst yet; it is only just commencing operations, but I do not remember seeing it in a more general or threatening condition. *W. G. Smith, Dunstable*. [It is time that the labourers and growers generally should be taught the criminality of their carelessness. *Ed.*]

FRUIT CROPS AT WORKSOP.—The sandy soil of this district is unfavourable to the cultivation of the Apple, and it is only by the admixture of clay loam in the borders, and by frequent waterings with liquid manure that anything approaching success can be hoped for. The form of trees which obtain mostly with us is that of the bush, grafted on the Paradise and free stocks. Owing to the exceptionally cold spring and the almost complete absence of summer weather the crop, though fairly plentiful, will be late, while the fruit is small. The dessert varieties that find most favour here are Cox's Orange Pippin—in my opinion one of the best flavoured Apples cultivated in this country—King of the Pippins (also a good variety), Margil, Ribston Pippin, Worcester Pearmain, Maltster, and Mr. Gladstone, the latter variety not inappropriately named for its vigour and fertility, though it unfortunately lacks the resistance to early decay of its namesake. Dutch Mignonne being a sure bearer and a heavy cropper, I would strongly recommend for market use. Ratford Beauty also finds favour with us, on account of its late keeping property, while the fact that it is a sure and heavy cropper and of fairly good flavour is an additional recommendation. Of culinary varieties the most successful are Lord Suffield, Keswick Codlin, Cellini Pippin, Lord Derby, Ecklinville Seedling, Warner's King, Dumelow's Seedling, and Cox's Pomona. Pears are an abundant crop, but, like the Apples, are backward. The late varieties, unless favoured with more sunshine during the autumn, will be worthless. Doyenné d'Été, Williams' Bon Chrétien, Clap's Favourite, Louise Bonne of Jersey, Beurré Hardy, Beurré Clairgeau, Beurré Diel are amongst the best. Clap's Favourite is scarcely ever a failure here. The crop is usually abundant, the appearance of the fruit is attractive, while in flavour it surpasses Williams' Bon Chrétien. Peaches and Nectarines

are a good average crop, while Cherries, both sweet and Morello are above the average. Plums and Apricots are almost a failure. Strawberries are an abundant crop, Vicomtesse Hericart de Thury taking premier honours again this season. The other small fruits have been our heaviest crops, red Currants holding a foremost place. The leaves unfortunately have become diseased, with the result that in a few weeks the trees will be completely bare. The leaves of the Pears are similarly affected, but not to the same extent. In Potatoes the early varieties have been a good crop, though the quality of the tubers was greatly deteriorated owing to the incessant wet, while the appearance of later varieties is all that can be desired. The disease has not hitherto appeared. In the noted fruit-growing districts of East Markham and Luxford the crops are very variable in their character, apparently depending on the position of the orchard. Apples do not reach the average standard, while Plums, in some instances a very heavy crop, are in other cases a comparatively poor yield. Cherries generally (both sweet and Morellos) are a good crop. Owing to the continuous downpour of rain when the fruit was almost ripe, the former suffered considerably from cracking. Strawberries are a good crop, but had to share in the general havoc caused by the continuous rain, the great bulk of the fruit having rotted before an attempt could be made to gather it. What struck me most in making a short tour through the above districts was, that though some tons of jam were annually manufactured, yet no attempt had hitherto been made in the produce of Cider. In these days of general agricultural depression I think this is an industry deserving attention, while others fail to see the reason why the bottling of such fruits as Plums, &c., should be almost entirely monopolised by the French and Germans. To give emphasis to my remarks, I may add that 488 tons, 7 cwt., 3 qrs. of Plums were put on the railway at Tutford and East Markham in 1886, while the yield of the following years, if not greater, was at least of equal quantity. The figures given do not by any means represent the quantity grown in these districts, as much of it found its way into the neighbouring towns by conveyance other than rail. I would draw the attention of the fruit growers of these districts to the approaching Conference of Fruit Growers at the Crystal Palace (on September 7 and 8), where the various methods of preserving fruit will be treated by the best men, and the adaptability of the various fruits to each system of preserving will be thoroughly explained. *M. Gleeson, Clumber Gardens, Worksop*.

HOLLY TREE.—On visiting Kirkmichael House on the 6th of this month, I was greatly surprised when Mr. Shannon, the gardener, drew my attention to a Holly tree still carrying a full crop of last year's berries, as well as a crop for this year, a sprig or two of which I send you. From what Mr. Shannon says, the tree has never before been known to do this. *J. S. R.*

ADIANTUM FARLEYENSE.—I have this morning received from Mr. William Goldby, Edgend Nurseries, Brierfield, Burnley, a frond of this beautiful Fern, cut from a plant (one of a batch of twenty-one) grown by him from spores of his own sowing. It is the first I have ever had, and Mr. Goldby's communication was highly interesting to me, all the more so as I have on several occasions in past years written on this subject in your columns, having failed, after more than twenty years' experience of growing this Fern in all sizes, to find even a trace of fructification. Mr. Goldby tells me that the spores were found on one frond only of a large plant belonging to Mr. Edward Eckroyd, of Edgend Hall, and that even on this they were scantily found. He intends to exhibit some of the young plants at the Royal Horticultural Society's September meeting, and it is to be hoped that he will then furnish full details of the way in which he raised them. I wish I could have seen even one solitary specimen of the pinna in fruit, so that I could have preserved it. Seeing is believing; but I need hardly add, that I cheerfully accept every word Mr. Golby has written, and I am greatly obliged to him for his courtesy in thinking of and writing to me. He is to be heartily congratulated on his success. *T. M. Shuttleworth, F.L.S., F.R.H.S., Preston, Lancs.*

CLEMATIS JACKMANNI ALBA.—I have read with interest Mr. Noble's note, p. 152, concerning the above, and regard it as an excellent exemplification of the value of patience and perseverance. I now give my experience of the variety in question. In the autumn of 1885, or spring of 1886—I forget which—I planted

a young plant against the east side of the mansion here, with the result that two or three weak growths, about 4 feet long, were made during the summer. Last year these produced a few flowers of the character described by Mr. Noble, viz., semi-double, solitary, and of a bluish French grey; and although I cannot say I disliked the flowers, my employer and myself thought it inferior to Lucy Lemoine—a double white variety of the Florida type—at the time, and did not regard it as an acquisition. The plant gained vigour, and made young shoots 10 to 12 feet long, which, in their turn, produced an abundance of pure white single flowers in September, and which were much admired. This circumstance, however, was rather a puzzle to me, and I was asked the question "Why is it that the flowers are single and pure white, whereas the others were nearly double, with a bluish tinge?" It was certainly difficult to answer the question off hand, and I was obliged to fall back on the stereotyped reply, "It is one of those variations in Nature which sometimes occur and cannot be accounted for." Mr. Noble's note, however, is a clear exposition of the why and the wherefore, and I for one tender him many thanks for sending it to your columns, and for this grand introduction to our gardens. Seeing that our plant made such strong growth last summer we were looking forward with interest to see if its behaviour would be the same this year, but we have been doomed to a certain amount of disappointment, the severe frosts of January having killed it down to the ground. In the spring two or three young shoots were seen to be throwing up from near the base; one of these has already attained a height of 14 feet, and is showing an abundance of flower-buds, which promise to give us a fine display in another week or two. Can any of your readers say from experience if it will live through a severe winter if grown on a south wall, i.e., wood of the previous or current year's growth? Our situation is low and damp, and subject to late spring frosts; on a south or west aspect we find Lucy Lemoine and other varieties of the Florida and patens type too tender to withstand severe winters. *J. H.*

SUTTON'S ROYAL JUBILEE PEA.—As this Pea becomes better known it is sure to be extensively cultivated, as it is suited alike for the poor man's and the rich man's gardens, and as an exhibition Pea it has few equals. It is a vigorous grower, and although the height of the haulm is given in Messrs. Sutton's catalogue as from 3 to 4 feet, it has this year attained a height of 6 feet—a surface-dressing of rotten dung to the thickness of 6 inches having been laid on both sides of the ranks when transplanted out of pots, in February, the haulms being heavily laden with large, handsome, sword-shaped pods, containing from nine to twelve large and deliciously-flavoured Peas each. All being well, I shall grow Royal Jubilee largely next year. This year the ranks of it are the admiration of all who see them. *H. W. Ward, Longford Castle*.

MILNE'S PATENT SADDLE BOILER—A CORRECTION.—In reference to the above boiler at p. 161, I find I have made a slight error as regards the room required to set it in, which in reality is as follows:—4 feet in depth, 5 feet in width, when set by itself; but if two are placed side by side somewhat less, and 5 feet 6 inches in length. The boiler itself is 4 feet long, 3 feet 5 inches wide, and 2 feet 4 inches in depth, thus commanding a considerable area for external flues should occasion require, and which would add materially to its existing heating capabilities. This is, however, a very simple matter, and could be adopted or dispensed with at will. I believe I am correct in saying that all those at present in use have no external flues, and I may also remark that all internal flue tubes are cast independent of the boiler itself, and are inserted and caulked in the usual way. *J.*

HARDY FRUIT TREES.—Our good friend and veteran horticulturist is hereby exonerated in full for his "Essay on Correction" (*Gardeners' Chronicle*, p. 161) of my article on "Hardy Fruit Trees" (*Gardeners' Chronicle*, 3rd series, vol. iii., p. 615), and I hope he will forgive me if I still adhere to my statement that some of the very best and most fertile of American Apples are not European introductions but seedlings from these introductions raised in America. To begin, I find Mr. Meehan not precise in his arguments against my paper. First he tells us that there have been no introductions of Russian Apples to America up to within the last ten years, and then in enumerating the best half dozen kinds of Apples grown in Canada (Ontario), he names at least two full-blooded Russian kinds, viz. Red

Astrachan and Duchess of Oldenburg, in the list, and these two kinds have long been naturalised in Canada, and Canada to me is simply a portion of the American continent. The fact is that Apples have been introduced to America "from Prussia and other parts of Northern Europe," including England, Germany, Holland, and France, for centuries, and all records of the transfer being lost some of them now figure as "of unknown origin," or as those "accidents" of which Mr. Meehan so often writes (on p. 161), he apparently being unable to put his finger on the name of any seedling Apple of undoubted American origin, although many such are mentioned in Downing's *Fruits and Fruit Trees of America*—a book far too rarely met with in the library of the English gardener. My own belief implicitly is that the best fruits for any climate and locality are those raised from seed in such climate or locality, either from wild species, or from such improved varieties as have succeeded exceptionally well after naturalisation; it follows that I recommended systematic hybridism and rearing of seedlings, instead of the "accidental" or "happy-go-lucky" plan which Mr. Meehan implies has hitherto been the rule in America. My original article was reprinted with favourable editorial comments as a leader in the *Garden and Forest*, and soon afterwards I was delighted to learn that Apples and other hardy fruits from Russia and other parts of northern Europe had quite recently been introduced by Professor Budd to the new experimental stations or Government gardens and trial grounds now organised and working in several, if not all the American States. In a word, accidental progress in America is, it seems, giving way before organised method, and the good results likely to attend these centres of culture can scarcely be over-rated. John Dominy, the celebrated and original hybridiser of Orchids and Nepenthes, did much for us in England in a lifetime happily still healthy and vigorous, yet he once said that an hybridiser should have nine lives, like a cat, instead of only one, seeing that we must often await results for many years. Now it seems that the work of these experimental stations, if carried on persistently from generation to generation, and if the records be duly kept will be the best way of solving the "*ars longa vita brevis*" difficulty to which Mr. Dominy alluded in his practical and homely manner. I am not a little surprised at the list of American Apples (on p. 161), which Mr. Meehan describes as "accidents." I confess the word "accident" is very useful, but every thoughtful person is well aware that nothing is really "accidental," and we use the word as a convenient way of expressing an occurrence of which we know nothing, but the cause or motive force is behind the final results all the same. Just as I write I find an able article in the *American Garden and Forest* for August 1, p. 265, based on a Presidential address delivered before a convention of nurserymen at Detroit, by Mr. Watrons, who emphasises the fact that Apple culture in the North-west of America suffers enormously in many localities from climatic and other causes; and this he attributes mainly to the fact that the Apple is of foreign ancestry, and not a development of a native race, as is the case with American Grapes, Strawberries, and Blackberries. In the great north-west districts we are told the seedlings from the native species of *Prunus* are fast superseding Plums of European origin. This article is well worthy of notice, containing, as it does, the germs of much successful fruit culture in America and other countries. While firmly believing that all fruits of absolutely native origin will mainly and in the long run, be found best able to withstand the erratic vicissitudes of climate in all countries, yet we must never lose sight of the fact that plants are not always found to thrive best in the places where Nature places them, and this is especially the case when plants are grown for some particularly artificial purpose or use. For example, a plant may exist naturally in a cold, northern country and exposure, and yet prove more fruitful in a warmer and more sheltered climate. The converse of this is very rarely true—there are notable examples, but they are few and unimportant as compared with the former rule. Hence I recommended the improvement of native species if possible, or of cultivated varieties of the same, or similar species, introduced from a colder and less suitable country or locality than that where they are to be naturalised. Now the Apples that have been introduced, mainly from England, Holland and Germany, often fail in America. Downing, indeed, tells us that our most noted Ribston Pippins give place in America to Baldwin, Newtown Pippin, Spitzenberg, and others raised in that country. F. W. Burbidge.

A PROLIFEROUS STRAWBERRY.

HORTICULTURAL editors are often appealed to to interpret the conditions in the schedules of flower shows. A frequent inquiry is as to whether Rhubarb is to be considered as a fruit or a vegetable—using the latter word in a culinary sense. A similar question is often put with reference to the Tomato. No such enquiry has ever reached us as to the Strawberry; every one seems quite satisfied that that should be called a fruit, and not only a fruit, but that particular fruit called a berry. It may be read that the Almighty might have created a better "berry," but that He did not. What, then, if the so-called Strawberry be not a berry at all, and, except in a very loose sense, not even a fruit? In point of fact, the true fruits in the Strawberry are the little dry pips commonly, but erroneously called seeds, and which spring from and are more or less imbedded in the fleshy end of the flower-stalk. Usually the flower-stalk or axis, after having given origin to the

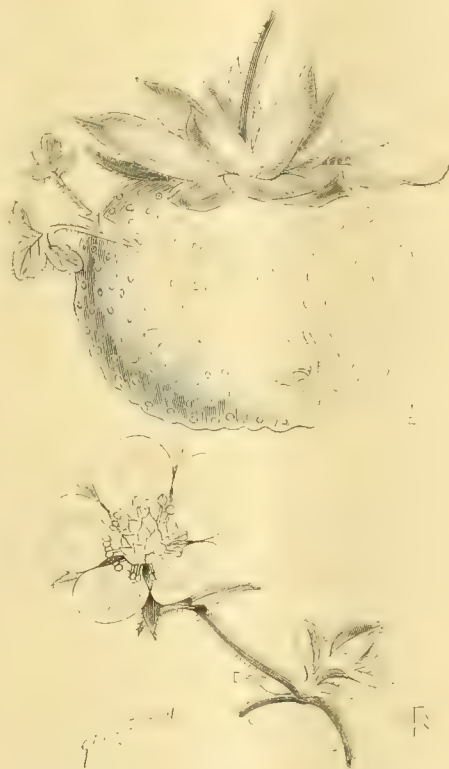


FIG. 23.—PROLIFEROUS STRAWBERRY, WITH FLOWER PRODUCED FROM THE SIDE.

several parts of the flower, ceases to grow, and disappears from sight: but in the Strawberry it swells out into that delicious succulent mass which is so nice that the partaker heeds not for a moment the botanical pedant who tells him it is not and could not be a berry. That it is really the dilated top of the flower-stalk is, however, shown on various grounds which it is unnecessary to discuss. Suffice it to say it is the office of a stalk to produce leaves, leaf-buds, shoots, or flowers, or all of them, as the case may be; and in the Strawberry before us we have three or four such buds springing from the sides of the berry, and one of them so perfectly organised as to have not only leaves (a) but adventitious roots, the commencement of a runner, (c), and a terminal flower. (Fig. 23).

TRADE NOTICE.

MR. JOHN G. BROWN, only son of the late Mr. Matthew Brown, of the firm of Dickson, Brown & Tait, and Mr. James Wilson, late head shopman with the same firm, have commenced business as seed and bulb merchants at 10, Market Place, Manchester, under the title of Brown & Wilson.

VEGETABLES.

ONION CULTURE.

A GARDENER remarked the other day that "the wet summer was driving the Onions all to top." I told him that it was natural a succulent and moisture-loving plant like the Onion should grow freely during a wet summer; but so far from regarding it as an evil, I thought it indicated a good crop of Onions, provided the stock were good. That is a matter of the first importance, and I have known stocks of Onions of very indifferent quality through planting all the smallest and roughest bulbs for seed. The Onion growers of Oxfordshire—the men who produce exhibition Onions from 1 lb. to 2 lb. in weight—so far from deploring moisture for their Onions, give them an abundance. I have known them give the beds a good soaking even when rain was certain. They, as practical and successful cultivators of the Onion, give plenty of manure below and plenty of moisture upon the surface.

To grow exhibition Onions a fairly moderate stiff and tenacious loam is the best. Onion-growers lay down the principle that the firmer the surface on which the Onions are growing the better is it for the fine development of the bulbs, especially in filling out the base, and getting it full and plump instead of hollow. A hard surface is of small moment, provided it is kept well moistened by rain or by means of the watering-pot. The soil for exhibition Onions is prepared about the month of October. A piece of ground being selected, a spit is dug out, and 6 to 8 inches in depth of good mellow manure is placed upon the subsoil, after being well forked up and loosened; then the spit from the adjoining soil is laid upon the manure, and so the work goes on until the whole piece is prepared. This is allowed to remain until January, when a good coat of soot is laid upon the surface, and it serves the double purpose of destroying insects and fertilising the Onions. In two or three days, if the weather is favourable, the surface is gently forked over, and made firm. It is then ready for the plants raised from seed, sown in pans or boxes in January, and they are transplanted to the beds. If the spring proves dry, the young plants are well watered, so that no check is received from drought, and throughout the summer no check is put upon the use of the watering-pot; and a daily supply almost is given, whether or not it promises to rain.

Top-dressing is followed by some growers, and eschewed by others. Mr. Wingrove, of Rousham Park, one of the best growers for exhibition in the present day, uses as a top-dressing manure from a spent Mushroom bed; but another, equally successful, never top-dresses, but waters abundantly.

One grower, who has to deal with a light soil of a shallow nature, uses for manure good fresh cow-dung, which he regards as more cooling and lasting, but he never top-dresses, preferring that the roots of the Onions should go downwards instead of rising to the surface, as the Onions are likely to suffer in hot dry weather in consequence, unless abundantly watered. R. D.

PLANTS AND THEIR CULTURE.

BULBS FOR FORCING.—The first lots of these should now be put in. When very early flowering is desired it is much better to plant early than to subject the bulbs to hard forcing later on, as the flowers will have more substance and will last longer in a cut state if they have not been forced too much. In putting them in consideration should be given as to whether they are merely grown for the production of cut flowers or are to be used as decorative plants. If for the former purpose then boxes will be more suitable than pots. These boxes should be about 6 inches deep, and of such a length and breadth as is most convenient; but for decorative purposes pots had better be employed. A practice which largely prevails in the market trade is to first put all the bulbs in boxes, and when they have made a little growth, transferring them to pots, when, by selecting

and putting together those which are at about the same stage of development, very even nicely filled pots may be had. This method gives excellent results for market purposes, but where the longevity of the flowers is of first importance they are better grown from the first in the flowering pots, having in each lot as many bulbs as can be conveniently got in; 6-inch pots are a favourite size. In filling the boxes no more room need be left between the bulbs than is just sufficient to allow of a thin layer of soil being placed round them. In both cases the bulbs should be planted so as to be just covered with the soil, which is best when of a rich loamy nature with plenty of sharp sand in it. Avoid the use of rank or half-decayed manure in the compost; it has a tendency to cause the roots to decay.

After planting the bulbs the boxes or pots should be placed on a dry or well drained bottom, and covered over with cocoa-nut fibre refuse, coal-ashes, or similar material, to the depth of several inches. If the soil has been properly moist when the bulbs were put in, it rarely happens that watering will be required until after they are removed from the plunging material; but if it is thought they are getting too dry, a slight damping of the plunging material will be sufficient.

The bulbs which should have immediate attention are the early white Roman Hyacinths, the Paper-white and double Roman Narcissus, which, with comparatively little forcing, may be had in flower by November. Of late years Narcissi or Daffodils have come to the front, and large quantities are now forced into flower in the winter, which, in the case of the earlier sorts, such as pallidus præcox, may be had not much behind the Roman Hyacinths. But although pallidus præcox is exceedingly neat, early, and useful, it is in the large trumpet sections that the most noble-looking flowers are to be found—such as Ard Righ, Golden Plover, maximus, princeps, &c. The Tenby Daffodil, obvallaris, with its shortened trumpet and compact habit is an excellent thing for forcing. Of the bicolor section there are some splendid forms, such as Empress and Horsfieldi, bicolor, and the broad-leaved Emperor and Rugilobus; of whiter Daffodils there are the various forms of moschatus, cernuus, and tortuosus; of the incomparabilis, Nonsuch or Peerless varieties Leedsii, Princess Mary, albidus, and Stella, are well known varieties. Then there are the Jonquilla, Poeticus, and Polyanthus Narcissus groups, from which large selections might be made. If these Daffodils are got in at once, they should, if treated similarly to the Roman and Italian Hyacinths, be fit to fill their places as they go over; in any case there should be no difficulty in their being plentiful by Christmas.

Violets.—Young plants which were put in in the early part of the season, and which have since been grown on in the nursery quarters, should now be placed in their winter-flowering position. If this operation is delayed much later the plants will not have time enough to thoroughly establish themselves before the dull short days are on us. A capital place in which to grow them is in an ordinary garden frame; and if a slight bottom-heat for a short time after planting can be had, so much the better, a small quantity of fresh fermenting material being best. It sometimes happens that the heat has not quite gone out of the frames in which Melons have been grown; and if such can be had, they will do very well; moreover, they would not require fresh moulding over, as the soil would not be exhausted. In any case, having prepared the frames there should be not less than about 8 inches deep of good loam inclined to be heavy rather than light; spread it evenly, and make it tolerably firm. All being now ready, carefully lift the plants in the nursery, with as much soil as possible adhering to the ball of roots. Plant them firmly in rows in the frames, allowing from 6–8 inches between the rows and plants, according to their size. After planting give them a good watering, but avoid watering all over with a rough rose, as this plasters down the surface of the bed and renders it uncongenial to the growth of the plants—rather water them individually; and unless the weather should prove extra dry, it rarely happens that much future watering is required. If the weather be cold or wet, the sashes may be kept over them, but always giving plenty of air—indeed, if the weather is fine, the sashes may be kept off, but again putting them on as the autumn advances, until in winter very little watering or airing will be required. If they are grown in pots the treatment is practically the same—merely plunging the pots in the frames instead of planting them out; they can then be removed from

the frames as required, 32-sized pots being a very suitable size to use. The double sorts are best adapted for this purpose; perhaps the best of them is Marie Louise, but some prefer the white Comte de Brazzas, and others the Neapolitan or Parma Violets. *F. Ross, Bletchingley.*

SOCIETIES.

ROYAL HORTICULTURAL.

AUGUST 14.—Last Tuesday's show was evidently influenced by the holiday time, as it was the smallest exhibition yet held in the Drill Hall. Messrs. Paul & Son and Mr. T. S. Ware were the leading exhibitors before the Floral Committee, and Messrs. J. Veitch & Sons' and Mr. Walker's collections of Gooseberries were points of interest in the fruit section.

Floral Committee.

Present: G. F. Wilson, Esq., in the chair; and Messrs. W. Wilks, J. Fraser, J. Walker, H. Herbst, W. Goldring, W. Holmes, C. Pilcher, H. Ballantyne, J. Dominy, J. O'Brien, E. Hill, G. Paul, C. Noble, and Dr. M. T. Masters.

Messrs. Paul & Son, Cheshunt, contributed a large collection of cut flowers of hardy herbaceous plants, and also nine boxes of cut Roses containing some very creditable blooms of the usual popular exhibition varieties. The blooms were of large size, well coloured, and in very fair condition. Among the best blooms were the following varieties:—Paul Néron (large), Victor Verdier, Madame Cusin (good colour), W. A. Richardson, Bruce Findlay, Madame Ch. Wood, Comtesse de Rosebery, and Captain Christy. There were several varieties of Carnations and Picotees, among which Mrs. Reynolds Hole, a terra-cotta coloured flower, stood out conspicuously. Autumn flowering Phloxes and Poppies in variety made a bright show. A mass of flowers of *Campanula carpatica* was very attractive, and so also were the flowers of *Polemonium Richardsoni* and *Arnebia echioides*. Centaureas were numerous; there were *C. macrocephala*, which makes a fine show in the border, but is somewhat unwieldy when cut; *C. ruthenica*, smaller; and *C. montana*, a very useful one. Other good plants were *Montbretia Pottsi*; *Geum coccineum*, very bright; several *Potentillas*; *Harpallium rigidum*; *Oenothera speciosa*, white, very faintly suffused with rose; and *Gypsophila paniculata*, which is very useful for intermingling with more heavy flowers in epergnes, &c.

From the Hale Farm Nurseries, Tottenham, Mr. T. S. Ware contributed a group of cut flowers of a varied nature. The most conspicuous object was a salmon-pink variety of *Papaver orientale*, which was awarded a First-class Certificate under the name of Blushing Queen. There was also a specimen of the typical plant. Shirley and Iceland Poppies and Phloxes made a gay display. A Canna, named Victor Hugo, deserves attention; it is rich red, with deep red-brown spots, and the leaves are flushed with the same colour. *C. Hippolyte Flandrin* was also shown, rich yellow and orange-brown spots, and as shown of a very dwarf habit. Other noteworthy plants were *Lilium elegans*, Batemanniae, *L. canadense*, *L. c. rubra*, *Milla biflora*, *Iris Kämpferi* vars., *Monarda didyma*, *Pentstemon heterophyllus* (?), with very pretty bright blue flowers, freely produced; and *Ferraria undulata*, a singular-looking Irid.

G. F. Wilson, Esq., Heatherbank, Weybridge, showed a few interesting plants, as *Gentiana asclepiadea*, in white and blue forms; *G. ornata*, a small-flowered species, and the pretty little *Stenogaster concinna*, with Gesnera-like flowers of white with the two upper lobes of the corolla lilac; also *Lilium longifolium* and a white *Maurandya*, from the Sandwich Isles. The old-fashioned white Rose, La Biche, was represented by a large boxful of cut blooms from Mr. J. Walker, Thame. Its chief merit lies in its floriferous nature.

A few double tuberous Begonias came from Messrs. H. Cannell & Sons, Swanley, Kent, C. Showell being the finest flower, it is rich rose, and the plant shown bore a flower quite 4 inches in diameter, of very fine form. Mrs. Cornwallis West, rich yellow flushed with salmon on the centre segments; and Mr. F. Jenkins, pale sulphur, were also good forms.

From the Royal Gardens, Kew, there were sent *Mucuna imbricata*, a leguminous plant, which was shown at South Kensington last year and attracted

considerable attention, with its racemes of large purple-black flowers (about 2 inches in length); *Pereskia bleo*, with pink Rose-like flowers not frequently seen in bloom; *Eucomis bicolor*, green, edged with purple, and the stem spotted with the same—a very pretty flower; *Littonia modesta* was also shown.

Mr. C. Turner, Royal Nurseries, Slough, showed a stand of Carnations and Picotees, exhibiting well grown flowers; Terra Cotta, Annie Douglas, and Dorothy being the best blooms.

A collection of numerous varieties of *Iris Kämpferi* came from Mr. W. Gordon, Twickenham, embracing a great range of colour, and all of large size. One of a purple-lilac colour, and another similar but with a white centre to each segment, were good. Also Coquette, rich blue; Red Gauntlet, white, with lilac margin; and The Bride, pure white. He also had *Lilium Leichtlinii*.

Lælia elegans was sent by Malcolm S. Cooke, Esq., Kingston Hill (gr., Mr. Cullimore), with two spikes of richly coloured flowers.

Odontoglossum crispum, Heaton variety, a form with large brown spots, was sent by Mr. J. Charlsworth, Heaton, Bradford. He also had *Bifrenaria cornuta*.

The new hybrid *Cypripedium* Charles Canham, recently fully described in our columns, came from Mr. Cowley, gr. to F. G. Tautz, Esq., Studleigh House, Shepherd's Bush, W. The sepal is green-brown with a white margin, petals lilac-purple with a hairy edge, lip green with brown suffusion, the flower being of good size.

Messrs. H. Low & Co., Clapton, showed two small *Cypripediums*, one called *C. concolor* Regnier and the other *C. c. unicolor*, pure pale yellow; and a well flowered plant of *Oncidium splendendum* came from G. C. Raphael, Esq., Castle Hill, Englefield Green, Staines (gr. Mr. W. Swan).

Messrs. R. P. Ker & Sons, Aigburth Nursery, Liverpool, sent *Croton Aigburth Gem*, which resembles *interruptus*, but is rich crimson with green blotches, while the young foliage is yellowish; it is a very pretty new *Croton*, justly deserving the certificate awarded. A similar award was made to Messrs. J. Laing & Sons, Forest Hill, S. E., for a Carnation, R. H. Elliott, yellow ground with rich crimson flakes, and good in form.

Mr. W. Williams, Walcot Nursery, Ryde, sent two good border Carnations. Mr. G. Davidson, Ammanford, South Wales, showed a white *Lobelia*; Miss Hope, a large-flowered sort, of tall habit; and a blue-and-white one, a sport from *Bluebeard*—came from Mr. T. Williams, Devizes. Mr. R. Dean, Ranelagh Road, Ealing, showed Phloxes, Stocks, Carnations, &c., the Mauve Beauty, double Stock, showing very well, and *Rosa alba* was a delicate rose Phlox.

Messrs. J. Cheal & Son, Crawley, Sussex, had a wire frame suitable for displaying a bunch of single Dahlias, Narcissi, &c.

FIRST-CLASS CERTIFICATES.

Papaver orientale var. *Blushing Queen*, from Mr. T. S. Ware.

Croton Aigburth Gem, from Messrs. Ker & Son.
Carnation B. H. Elliot, from Messrs. Laing & Mather.

Begonia C. Showell, from Messrs. H. Cannell & Sons.

MEDALS.

Silver-gilt Banksian.—To Messrs. Paul & Son, for collection of cut flowers.

Bronze Banksian.—To Mr. T. S. Ware, for collection of cut flowers.

Fruit Committee.

Present: T. F. Rivers, Esq., in the chair; and Messrs. W. Warren, R. D. Blackmore, G. W. Cummins, J. Cheal, J. Lee, W. Marshall, A. H. Pearson, J. Smith, and J. Wright.

Messrs. J. Veitch & Sons, Chelsea, showed a collection of about a hundred dishes of Gooseberries, also a few cordon trees in fruit, and a few dishes of other fruit, as *La Constante* Currant, very large; *Citron des Carmes* Pears, Waterloo Strawberry, Early Julien, Irish Peach, and Red and White Jun-eating Apples. Of the Gooseberries it is difficult to select any for special mention. We laid before our readers last year illustrations and remarks on a selection of the best varieties, most of which were shown on this occasion. The fruits were remarkably clean and plump. Some of the best examples shown were Ironmonger, London, Warrington, Yellow Champagne, Railway, Telegraph, Thumper, Pitmaston Green Gage, Village Green, &c.

Mr. J. Walker, Thame, and Messrs. Paul & Son, Cheshunt, also each contributed an extensive collection of Gooseberries composed of the favourite varieties.

A box of eighteen very fine examples of Peach Royal George were shown by Mr. J. Chambers, Westlake Nursery, Isleworth.

An instance of the effect of manuring on Apples was shown by Mr. W. Roupell, Roupell Park, S.E., who had the Gladstone Apple in its ordinary form—green with red mottling, and again of a bright red colour, the latter fruit being from a tree to which a dressing of soot and lime had been applied; both were grown on the Paradise stock. Red Juneating and Early Harvest were also shown, the latter a bright green round Apple of medium size.

Messrs. J. Cheal & Sons had specimens of Fay's Prolific Currant, a large red fruit, very freely produced. W. M. Baker, Esq., Hasfield Court, Gloucester (gr., Mr. Asplin), and Mr. Cap, gr. to Mr. W. G. Blair, Northcroft, Englefield Green, each showed Melons. Pea Mitchford Hero, came from Mr. T. Bunyard, Poplar Hill, Horningsea, Cambridge, a large pod, well filled.

From the Society's Gardens, Chiswick, were sent three varieties of Figs, which were De la Madeleine, Boudart, and Peine Dure, all good fruits, Plums St. Etienne and Prince of Wales, Cherry Madeleine and Montmorency à courte queue, and Apples Red and White Astrachan, and White Transparent, all being capital examples.

MEDAL.

Silver Banksian.—To Messrs. J. Veitch & Sons, for collection of Gooseberries.

COLD STORAGE OF FRUIT.

At the conclusion of the sitting a special sub-committee was appointed to investigate the effect of cold storage on fruit, the following gentlemen being nominated:—Messrs. J. Lee, T. F. Rivers, J. Wright, J. Smith, Dr. Hogg, W. Marshall, H. J. Veitch, J. Cheal, D. Tallerman, and A. F. Barron. The experiments and investigations are to be carried out in connection with the Leadenhall Market Cold Storage Co., Limited (D. Tallerman), 79½, Gracechurch Street, E.C. This is an important phase of fruit marketing, and one which the Society does well to investigate.

THE OXFORD CARNATION AND PICOTEE UNION.

This exhibition took place as usual in Mr. E. S. Dodwell's garden in the Stanley Road, Oxford, and proved to be of much more extensive and satisfactory a character than was anticipated. There were a large number of flowers staged for competition, and while many exhibited the effects of the season, there were yet some very fine blooms, many of the Picotees being fine and highly finished. Mr. Dodwell stated that a very abnormal growth had been experienced under very abnormal conditions, and he, in the whole length of his experience, never remembered such a July as that of the present year. A much larger tent than is usual was required to accommodate all the flowers, and in addition, Mr. Dodwell had something like 3400 pots in his Carnation-houses in glorious bloom, including a great many new yellow grounds of rare promise. The judging over, a party of some sixty persons sat down to luncheon in Cowley St. John's High School, under the Presidency of the Mayor of Oxford—a good number of ladies being present. In the evening the usual meeting of subscribers was held, and the lines laid down upon which the Union should proceed in 1889.

Carnations.—In the class for twelve blooms of Carnations, dissimilar, flakes and bizarres, eight prizes being offered, there were eleven competitors, Mr. Martin Rowan, Manor Street, Clapham, being placed 1st with a remarkably good lot, considering the season, the blooms reading from left to right as follows:—S.B. Robert Lord, P.P.B. Sarah Payne, S.F. John Witham, R.F. Jessica, C.B. Master Fred, S.B. Fred, P.F. George Melville, P.P.B. Rifleman, S.F. Thomas Tomes, P.P.B. William Skirving, S.B. Admiral Curzon, and R.F. Rob Roy. 2nd, Mr. J. Lakin, Temple Cowley, also with some fine flowers, consisting of P.F. Sarah Payne, S.F. Tom Lord, C.B. Captain Owen, very fine; S.H. Robert Lord, S.F. Seedling, R.F. Sybil, S.F. Alderman Buckell, P.P.B. Dr. Symonds, C.B. Master Fred, S.B. Admiral Curzon, P.P.B. Joseph Lakin, and S.B. Robert Houlgrave; 3rd, Mr. R. Sydenham, Birmingham; 4th, Mr. George Chaundy, Oxford; 5th, Mr. W. L.

Walker, Reading; 6th, Mr. Arthur Brown, Birmingham.

In the class for six blooms of flakes or bizarres, dissimilar, there were eighteen competitors for nine prizes, and here Mr. Tom Lord, Todmorden, was 1st, with R.F. Sybil, P.F. James Douglas, C.B. J. D. Hestall, S.F. William Mellor, C.B. Master Fred, and S.B. Robert Lord. 2nd, Mr. C. Phillips, Reading, with P.F. James Douglas, S.F. Alisemond, a very promising flower; R.F. Rob Roy, S.B. Admiral Curzon, S.B. Robert Lord, and C.B. John Harland. 3d, Mr. John Witham; 4th, Mr. W. Bacon, Derby; 5th, Mr. C. Henwood, Reading; 6th, Mr. S. Barlow, Manchester.

Picotees.—In the class for twelve blooms, dissimilar, there were eleven competitors, and here Mr. M. Rowan was 1st, with a very good lot, though some of the blooms showed signs of roughness. The varieties were H. Rose E. Mrs. Payne, L.P.E. Clara Penson, H. Red E. Mrs. Dodwell, L. Rose E. Nellie, H.P.E. Muriel, H. Rose E. Edith D'Ombra, L.P.E. Jessie, H. Scarlet E. Mrs. Sharpe, L. Rose E. Thomas William, H. Red E. J. B. Bryant, L.P.E. Elsie Grace, and H.P.E. Alliance. 2nd, Mr. Joseph Lakin, with H. Scarlet E. Mrs. Sharpe, L.P.E. Jessie, L. Rose E. Orlando, H.P.E. Zerlina, L.P.E. Mrs. Nicholas, H. Rose E. Seedling, H. Red E. Brunnette, H. Rose E. Seedling, H.P.E. Amy Robsart, H. Rose E. Seedling, L.P.E. Ann Lord, and H. Red E. Mrs. Dodwell. 3rd, Mr. R. Sydenham; 4th, Mr. George Chaundy; 5th, Mr. A. Brown; 6th, Mr. W. L. Walker.

In the class for six blooms there were twenty exhibitors for nine prizes; here Mr. Tom Lord was 1st, with fine blooms of H. Scarlet E. Mrs. Sharp, H. Red E. Mrs. Dodwell, L. Rose E. Mrs. Gegge, L.P.E. Mrs. Gorton, H.P.E. Amy Robsart, and L. Rose E. Miss Gorton. 2nd, Mr. John Witham, with H. Red E. John Smith, L. Rose E. Miss Wood, L.P.E. Ann Lord, H.P.E. Alliance, H.P.E. Tinnie, and H. Rose E. Lady Holmesdale. 3rd, Mr. J. Payne; 4th, Mr. A. W. Jones; 5th, Mr. Thomas Bower, 6th, Mr. J. S. Hedderley.

Selfs, Fancies, and Yellow Grounds.—There were ten stands of twelve dissimilar blooms in competition for eight prizes, the best coming from Mr. W. Reed, gr. to George Dodwell, Esq., Oxford, who had very fine blooms of The Maestro, crimson, flaked with maroon—very fine; Queen of the West, pink; Gladys, pink—very fine; Heroine, scarlet; and some very fine seedling fancies and yellow grounds. 2nd, Mr. Martin Rowan, with Sir Tony Belch, scarlet, flaked with maroon; Annie Douglas, Joe Willet, scarlet; Celia, pink; Prince of Orange, Imperator, purple; The Governor, Rev. Markham Hill, pale scarlet and maroon; Eurydice, deep rose and maroon; Mrs. Genge, pink; Black Knight, maroon; and Gladys, pink. 3rd, Mr. George Chaundy; 4th, Mr. Joseph Lakin; 5th, Mr. W. L. Walker; and 6th, Mr. R. Sydenham.

Single Blooms.—*Carnations.*—Of these there were large quantities, and the judges had a severe task in awarding the prizes. Scarlet Bizarres.—1st, 2nd, 3rd, 4th, and 5th, Mr. Samuel Barlow, with fine blooms of his new S.B. Robert Houlgrave.

Crimson Bizarres.—1st, Mr. T. Lord, with Master Fred; 2nd, Mr. J. S. Hedderley, with the same; 3rd, Mr. C. Phillips, with John Harland; 4th, Mr. P. E. Henwood, with Seedling; 5th, Mr. M. Rowan, with Master Fred.

Pink and Purple Bizarres.—1st, Mr. C. Phillips, with Faust; 2nd, with Duc d'Aumale; 3rd, with William Skirling; 4th, Mr. M. Rowan, with the same; 5th, Mr. P. Anstiss, with Seedling.

Purple Flakes.—1st, Mr. Hill, with James Douglas; 2nd, Mr. T. Lord, with Squire Trow; 3rd, Mr. J. Witham, with James Douglas; 4th, Mr. Storror, Stranraer, with Sarah Payne; 5th, Mr. C. Henwood, with the same.

Scarlet Flakes.—1st, Mr. J. S. Hedderley, with Sportsman; 2nd, Mr. C. Phillips, with Alisemond; 3rd, Mr. J. Lakin, with Mrs. Carter; 4th, Mr. W. L. Walker, with Alisemond; 5th, Mr. J. S. Hedderley, with Sportsman.

Rose Flakes.—1st, Mr. J. Lakin, with Lovely Mary (new), and 2nd, with the same; 3rd, Mr. M. Rowan, with Mrs. Bridgewater; 4th, Mr. T. Henwood, with Rob Roy; 5th, Mr. M. Rowan, with the same.

Selfs.—1st and 2nd, Mr. J. Lakin, with Emma Lakin, a grand pure white self; 3rd, Mr. A. Brown, with Emily Francis, a fine rose self; 4th, Mr. R. Dean, with Germania, yellow self; 5th, Mr. A. Brown, with Emily Francis.

Fancies.—Mr. J. S. Hedderley, with sport from Master Fred, rose, flaked with maroon; 2nd, Mr. W.

Reed, with Maestro, scarlet and maroon; 3rd, Mr. Reed, with Mrs. Dodswell, rosy-pink and maroon; 4th, Seedling of similar character; 5th, Mr. J. Bridgewater, with Dr. Guinness, rose and maroon.

Picotees.—Heavy Red Edge.—1st, Mr. J. Payne, with Brunette; 2nd, Mr. T. Lord, with Dr. Epps; 3rd, Mr. J. Payne, with John Smith; 4th, Mr. W. L. Walker, with the same; and 5th, with Dr. Epps.

Light Red Edge.—1st, Mr. C. Phillips, with Thomas William; 2nd, Mr. J. S. Hedderley; and 3rd, Mr. M. Rowan, with the same; 4th, Mr. Rowan, with Mrs. Gorton; 5th, Mr. Phillips, with Elsie Grace.

Heavy Purple Edge.—1st, Mr. Reed, with Amy Robsart; 2nd, Mr. J. Bridgewater, with Muriel; 3rd, Mr. T. Anstiss, with Pollie Brazil; 4th and 5th, Mr. M. Rowan, with Muriel.

Light Purple Edge.—1st, Mr. Rowan, with Baroness Burdett Coutts; 2nd, Mr. C. Phillips; 3rd, Mr. J. S. Hedderley, with Ann Lord; 4th, Mr. Hedderley, with Baroness Burdett Coutts; 5th, Mr. C. Phillips, with Mary.

Heavy Rose Edge.—1st, Mr. M. Rowan, with Mrs. Payne; 2nd, Mr. J. P. Sharp, with Mrs. Sharp; and 3rd, with Campannini; 4th and 5th, Mr. Rowan, with Mrs. Payne.

Light Rose Edge.—1st and 2nd, Mr. T. Anstiss, with Favourite; 3rd, Mr. R. Sydenham, with the same; 4th and 5th, Mr. M. Rowan, with Nellie.

Yellow Picotees.—1st, Mr. W. Reed, with Queen of Hearts; 2nd, with Alfred Gray; 3rd, with Alfrida; 4th and 5th, with Seedlings.

The premier Carnation was S.B. Robert Houlgrave, shown by Mr. S. Barlow; the premier Picotee was H. Rose E. Mrs. Payne, shown by Mr. M. Rowan; the premier self Emma Lakin, shown by Mr. J. Lakin; and the premier fancy The Maestro, shown by Mr. Reed.

Special prizes were awarded to Mr. Reed, for a stand of twelve yellow ground Picotees of Mr. Gyles Kilmerry strain, in which the flakes of colour are laid on in longitudinal markings; and twelve of Mr. E. S. Dodwell's own seedlings, in which the colour is laid more upon the petal edges.

A stand of very fine blooms of the following yellow grounds were shown by Mr. Charles Turner, Royal Nursery, Slough, viz., Colonial Beauty, Almira, Dorothy, Agnes Chambers, Annie Douglas, and Terra Cotta, four blooms of each being shown.

New Flowers.—First-class Certificates of Merit were awarded to Mr. Joseph Lakin for White Self Mrs. Lakin, and to the same for R.F. Lovely Mary, a seedling from Lovely Ann; to Mr. Arthur Brown for Pink Self Emily Francis (Johnson); to Mr. J. S. Hedderley for Carmine Self Royalty; and to Mr. Thomas Anstiss for H.P.E. Picotee 'Pollie Brazil, raised by the exhibitor; to C.B. Carnation, John Harrison, a seedling from E. S. Dodwell, raised by Mr. W. M. Hewitt, of Chesterfield: fine petal and colour, and a good grower.

EXCURSION OF THE ROYAL SCOTTISH ARBORICULTURAL.

A LARGE contingent of the members of this Society left Edinburgh on the 8th inst. for Jedburgh. The numbers were increased in the progress of the journey, till a party of between forty and fifty mustered for breakfast in the "Spread Eagle" Hotel, Jedburgh. Among the party were Dr. Cleghorn, St. Andrew's; Mr. James Watt, Carlisle; Mr. M. Dunn, Dalkeith Palace Gardens; Mr. John Methven, Edinburgh; Mr. Caverhill, factor Monteviot; R. V. Kyrke, Esq., Penywern, Mold; Mr. R. A. Meikle, factor, Chrichel, Wimborne, Dorsetshire; Mr. D. F. Mackenzie, factor, Morton Hall, Midlothian; Mr. G. Dodds, Wentworth; Mr. J. M. Forsyth, Woburn Abbey; Mr. J. Kay, Rothesay; Mr. J. Robertson, Panmure; Mr. Baxter, Dalkeith; Mr. Erskine, Edinburgh; Mr. Buchanan, Penicuik; Mr. Milne, Edinburgh; Mr. A. Clark, Linlithgow; Mr. C. M. Paterson, New Battle Abbey, &c.

Breakfast over, the party, under the guidance of Mr. Walter Laidlaw, custodian of Jedburgh Abbey, inspected the ancient remains of the abbey, and other points of historic interest in this border burgh. Jedburgh, like most other of the early ecclesiastical centres, is somewhat famous for its fruit trees. One ancient Pear tree in the convent garden, which was formerly attached to the abbey, continues to bear good crops of fair fruit, although it is alleged to be about 300 years old. Many other features of interest to those of archaeological bent were pointed out by the guide, but arboriculture being the chief object

the party had in view, the programme admitted of only a brief stay in the town.

Passing up the Jed Water the attention was directed to Lintlee, where the Earl of Richmond attacked Sir James Douglas with 10,000 men, but the latter turned the sweeping and plant branches of the Birches which abounded in Jed Forest to excellent account as a means of defence. Twining them together athwart from stem to stem the enemy's horse were thrown into confusion and easily routed. Very little of the old forest remains, the most notable relics of it being found on the estate of Ferniehurst, the property of the Marquis of Lothian, before reaching which, however, the party passed through the estate of Linthaugh, belonging to the Earl of Howie. Here were found some remarkable specimens of Black Italian Poplar, common Spruce, and Larch. The Poplars are said to be 110 years old; the tallest is 125 feet in height, with a girth of 13 feet at 3 feet from the ground. The largest Spruce, which girthed 10 feet, is eighty-five years old.

On the Ferniehurst estate two of the most remarkable relics of the ancient Jed Forest are found. Both are Oaks, and are named respectively "The Capon Tree" and "The King of the Wood." The latter is about 78 feet high, with a girth of 16 feet 6 inches, and is estimated to contain about 300 cubic feet of timber. The former, the top of which suffered considerable damage by the snows of the winter of 1872, has a girth of 26 feet 6 inches at 3 feet from the ground, and at 5 feet from the ground 24 feet 3 inches. At another point of the estate are some Lime trees of peculiar character. They are large, wide spreading trees, growing in a group of six, with an average girth of 16 feet 6 inches, and an average height of about 93 feet. But the most remarkable feature about them lay in the fantastic character of their huge lower limbs which, striking out horizontally beyond the line of the upper branches, rise perpendicularly with considerable bulk and weight of timber. In other parts of Ferniehurst clumps of Birch and Oak of considerable age are pointed out as remains of the ancient forest of Jed, but appear rather to be the suckers that may have sprung from the stools of the original trees than those themselves.

Leaving Ferniehurst, Howden Burn was next visited, where some fine Scots Firs were inspected, the largest of which girthed 8 feet 8 inches, and was 80 feet high—the bole clean and straight to 50 feet high.

Hartrigge, the seat of Lord Stratheden and Campbell, was next visited. Among the many fine trees in the park were noted a grand specimen of Scots Fir, with finely-balanced tabulated head, the bole girthing 10 feet 6 inches. Near the mansion-house some Oaks were found to girth 13 feet 10 inches, and some Hornbeam girthed 7 feet 10 inches.

On leaving Hartrigge the party drove on to Monteviot, the beautiful and extensive seat of the Marquis of Lothian. Here lunch was provided for the party by Lord Lothian, which, in the absence of whom, was presided over by Mr. Caverhill, his lordship's agent. A letter from Lord Lothian was read by Mr. Caverhill expressing his lordship's regret that he could not personally receive the visitors. After lunch the party proceeded to inspect the extensive park, and its wealth of trees and shrubs.

The river Teviot winds eastward through the park a little to the south of the mansion, its banks adorned with widespread lawns, shrubbery, and flower gardens, all in good taste, and enriched with grand clumps and individual specimens of the usual classes of park trees. The greater part of the plantations are comparatively young, having been planted by the present Marquis and his predecessor, while the late Marchioness also contributed largely to the development of the picturesque beauty of the place by her excellent taste in arboriculture.

Among the more interesting specimen trees noted was an Abies Pinsapo on the terrace west of the mansion, supposed to have been planted about twenty-five or thirty years ago, the bole of which girthed 5 feet 9 inches, and the height was 38 feet. An Abies nobilis in the flower garden, of about the same age as the last named has a girth of 5 feet 1 inch, and is 59 feet high, and near by this stood a grand A. Douglasii, having a spread of branches of 35 feet, and a height of 47 feet. These three Conifers are all of the same age. A remarkable Weeping Ash in the same part of the grounds had a spread of branches of 30 feet, and a height of 20 feet.

The visitors returned to their hotel to dine, being much impressed with the picturesque scenery they

had witnessed during the day, particularly with the extensive panorama they viewed from the top of Peniel Heugh, a lofty eminence within Monteviot Park, which commands a magnificent view of the valleys of the Teviot, the Tweed, and the Jed, and seven of the border counties, including that of Northumberland.

The company dined in the "Spread Eagle" Hotel, Jedburgh, Dr. Cleghorn in the early part of the evening occupying the chair, Mr. James Watt succeeding on his retirement. Messrs. Dunn and Kyrke acted as croupiers. Among the topics discussed at the dinner Mr. Watt alluded to the disposal of the surplus still lying in the hands of the Executive Council of the Edinburgh Industrial Exhibition of 1886. The Council had apparently a difficulty in deciding what to do with the surplus, which amounted to several thousands of pounds, and he suggested that it should be put to establishing a Forestry School in Edinburgh.

Leaving Jedburgh the following morning the excursionists drove to Ancrum, the seat of Sir W. Scott, Bart., a finely timbered park of limited extent where some remarkable Limes, Elms, purple and common Beech, and other ordinary classes of park trees abound. Several Limes were remarkable for their dimensions. The largest had a girth of 18 feet 11 inches, and the smallest girth was 15 feet. These, with their mighty spreading tops of 80 or more feet, were considered by the arboriculturists worth a day's march to see.

Leaving Ancrum, a drive of about 7 miles along the banks of the Teviot, brought the party to the "Craggs" entrance to Minto grounds, the seat of the Earl of Minto. Here there were no relics of old forests to excite the curious in tree lore, but there was to be found instead, on every hand, to the extent of about 1000 acres, as grand evidence of arboriculture as is to be found in the South of Scotland. The park is one of the most picturesque of a most picturesque county. The chief attraction in the woodlands were the Larches, which here, alike in numbers and in size, rival the famous Larches of Dunkeld, Perthshire. The older trees are in the beautiful glen which traverses the park from north to south. They were planted in 1736, the greatest girth taken was 12 feet 1 inch, the greatest height 135 feet, with about 80 feet of clear, almost untapered stem. Younger trees on other parts of the estate, of about eighty years of age, promise by their luxuriance and health to perpetuate the fame of Minto for its Larches. But many other kinds of trees thrive equally well here. To give dimensions would be tedious, but some magnificent Silver Firs should not be passed over. The largest of these girthed 11 feet 9 inches, and was 120 feet in height.

From Minto the party passed through Denholm Dean, a beautiful wooded glen, by the southern bank of the Teviot, on to Cavers, the seat of Captain Palmer Douglas, and thence to Hawick where they took tea, and several of the excursionists returned to their respective destinations.

At Cavers one notable Ash was pointed out, which is locally known as the "Pope Tree." It is said to be 300 years old, and is 16 feet girth, the top, however being much mutilated.

TRENTHAM HORTICULTURAL.

JULY 26.—This Society held its first annual exhibition in Trentham Gardens, by the kind permission of the Duke of Sutherland. Although many years ago the horticultural exhibition at Trentham was among the first events of the kind in the northern portion of the county, in recent times the show had been abandoned. This season a new Trentham Horticultural Society was formed, and met with very favourable support. The Marquis of Stafford became its President; the Duke of Sutherland, Lord Ronald Gower, Duchess of Sutherland, and others became patrons. The weather, after a somewhat threatening morning, was fine in the afternoon, and between 7000 and 8000 persons attended. On entering the marquee the visitor was struck by the groups of ornamental foliage and flowering plants, arranged for effect, which ran along each side of the marquee, and terminated at the end with a fine collection from Trentham Gardens, including a display of choice Orchids, which were disposed among Ferns. Other groups also contained fine plants, and considerable taste had been shown in the arrangement, one of the most conspicuous being that of W. Thompson, Esq., Walton Grange, Stone, who had good Orchids. In the cut flower division the chief feature was the

Roses sent by Messrs. B. R. Cant, Colchester; stands of Carnations and Picotees came from Mr. Charles Turner, Slough. Messrs. Laing & Sons, Forest Hill, contributed a selection of Begonias and Caladiums, &c. Mr. Blair, Trentham Gardens, was mainly instrumental in organising the Society, and he also managed the show.

PLANT PORTRAITS.

AMELANCHIER OLIGOCARPA, *Garden and Forest*, July 18.

ANHELTONIUM LEWINII, Hennings, *Gartenflora*, August.—A Mexican Cactaceous plant with very thick fleshy root, contracted stem, tufted succulent leaves, with spines at the tip, surrounding a dome-shaped flower-stalk, with numerous pale rose flowers. The whole plant measures only about 3 inches across.

APPLE RED ASTRAKAN, *Bulletin d'Arboriculture*, July.

BEGONIA GERANIODES, *Bulletino della R. Società Toscana di Orticultura*, July.—Natal. Acaulescent, flowers white.

BEGONIA GLOIRE DE LUCERNE.—*Illustrierte Monatshefte*, July.—A cross between Begonia Frederick Schlegel and B. corallina.

CATTLEYA HARRISONIE VIOLACEA, *Orchid Album*, t. 333.

CATTLEYA WARNERI, *Revue de l'Horticulture Belge*, August.

CHEERY, ROYALE HATIVE (EARLY ROYAL), MAY DUKE, *Bulletin d'Arboriculture Belge*, August.

CYPRIPEDIUM AMESIANUM (VILLOSUM × VENUSTUM), *Orchid Album*, t. 340.

DENDROBIUM FYTCEANUM ROSEUM, *Orchid Album*, t. 336.

DENDROBIUM MACROPHYLLUM, *Orchid Album*, t. 339.

HABRANTHUS NEWALLII, *Garden*, August 4.

HOULLETTIA BROCKLEHURSTIANA, *Orchid Album*, t. 337.

ODONTOGLOSSUM VUYSTEKEANUM, *Orchid Album*, t. 334.

PHLOX STELLARIA, *Garden and Forest*, July 25.

POLYGONUM BALDSCHUANICUM, Regel, *Gartenflora*, t. 1278.—A climber; leaves cordate, ovate, acute; flowers numerous, small, pink, in branching panicles. Native of Bokkara.

ROSE, LOUIS VAN HOUTTE, H.P., *Revue de l'Horticulture Belge*, August.

SCHOMBURGKIA UNDULATA, *Orchid Album*, t. 335.

VANDA LAMELLATA BOXALLI, *Orchid Album*, t. 338.

ZYGOPETALUM BRACHYPETALUM b. STENOPETALUM, Regel.—A variety differing from the type in its narrow segments and five-ribbed disc.

COLONIAL NOTES.

QUEENSLAND.

ROCKHAMPTON BOTANIC GARDENS.—The establishment of the botanic gardens was contemplated from the time when the town was first surveyed, as the original plans show various sites were set apart for gardens and public parks. In 1872 the reserve of 100 acres, with a frontage to the Murray Lagoon, was selected as the most suitable. The lagoon ensures a permanent supply of good water, and the soil is light sandy loam, of good depth, and very easily worked. The then Premier, now Chief Justice of Queensland, Sir Charles Lilly, approved of the selection, and has always taken an interest in the progress of the gardens. At a meeting of trustees held in September, 1873, the present Superintendent, Mr. J. S. Edgar, was appointed. A few weeks afterwards a contract for fencing was let, the clearing of the land of the indigenous scrub was commenced at the same time, and within a short period 6 acres were cleared and securely fenced. This piece has been used for nursery and experimental work, tropical fruits and economic plants generally receiving special attention. So far the results have been very gratifying. Most of the valuable fruits of

the Tropics find a congenial home in our climate. Mangos—of which there are over twenty varieties in the gardens—and many other trees bear good crops annually.

As soon as the nursery had been well started, the general clearing and laying out of the reserve was taken in hand. Most of the ground was heavily timbered, with scrub underneath, which made the clearing a tedious and expensive affair. The funds at the disposal of the trustees not being sufficient to clear it all at once, tracks for the main avenues were cleared and planted with suitable trees. The row of Bunya Bunya (*Araucaria Bidwillii*) on each side of the centre walk are well grown trees for their age. Some of them have already reached a height of 40 feet. The Banyan (*Ficus bengalensis*) in twelve years have a spread of branches 60 feet in diameter. The finest sight in the gardens is undoubtedly the avenue of Cocoa-nuts (*Cocos nucifera*), in fruit, with stems from 10 to 20 feet high. The leaves meet overhead. The parallel borders in which they are grown are 20 feet wide, and are closely planted with Crotons. Between 400 and 500 plants were required to fill the borders. The shade given by the leaves of the Cocoa-nuts is sufficient to preserve the bright colours of the Crotons during the hot summer months. There are about forty varieties in the collection, and when in full leaf the display is very much admired by visitors. Large sheds have been erected, and covered with 3×1 inch hardwood battens, 2 inches' space being left between each. In these plant-houses all plants can be grown for which hothouses are required in colder climates. The only glass structures in use are a few propagating frames.

To fresh arrivals from Europe during our winter and spring months it is always a matter of surprise to see home vegetables and their favourite annuals growing side by side with Mangos, Jack Fruit, Pine-apples, Tamarinds, Cocoa-nuts, Coffee, Bananas, &c.; yet each year is proving more clearly that there are few annual plants of the temperate zone of commercial value that cannot be grown in Central Queensland during the cool season.

Fruits of tropical and subtropical countries have been well tested. Appended is a list of the most prominent that have been successfully fruited. [A list of about fifty tropical fruits was appended, which the limitations of our space forbid us from printing. Ed.]

The majority of these fruits are best adapted for the coast country. The finest Grapes are grown inland at elevations of 1000 feet and upwards. Large areas on the Peak Downs, Springen, and on the Drummond range, are well suited for the cultivation of the Grape Vine. The winter is cold enough to allow the plants to go to rest in the season for two or three months, which they never do near the coast. In these inland districts good Peaches, Nectarines, Apples, and Pears have been grown, but no systematic experiments have been made to find out the varieties of these fruits best suited to the climate. Unless the Government take up the matter, and start small experimental gardens on some elevated position inland, not much progress will be made in this direction. There is not the slightest doubt that Grapes, Peaches, Nectarines, Apricots, American Plums, Pears, Apples, Date Plums, Quinces, and other fruits can be grown in Central Queensland, but a large amount of experimental work will have to be done to find out the right sort to plant, and the proper site to plant them in. Coffee, Arrowroot, Tapioca, Ginger, Olives, and many more plants of commercial value, grow easily here, but the high prices of labour will prevent their cultivation to any extent for some time. Fifty species of Palms have been introduced into the gardens. Some of the first planted are fine specimens. In a few years the collection of Palms will be one of the features of the place. *Rockhampton*.

THE WEATHER.

MEAN TEMPERATURE OBSERVED AT CHISWICK DURING THE WEEK ENDING AUGUST 13. (AVERAGE OF FORTY-FOUR YEARS.)

Aug. 10	...	61°·8	Aug. 23	...	61°·3
" 20	...	61°·6	" 24	...	61°·2
" 31	...	61°·5	" 25	...	61°·0
" 12	...	61°·3	Mean for the week	...	61°·1

[Accumulated temperature indicates the combined amount and duration of the excess or defect of temperature above or below 32° F. for the period named, and is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.			
	Above or below the Mean for the week ending Aug. 13.	ACCUMULATED.		
		Above 42° for the Week.	Below 42° for the Week.	Above 42° difference from Mean since Jan. 3, 1888.
Principal Wheat-producing Districts.	Day-deg.	Day-deg.	Day-deg.	Day-deg.
0. SCOTLAND, N. ...	2 below	78	0	— 186 + 201
1. SCOTLAND, E. ...	0 (aver.)	101	0	— 347 + 157
2. ENGLAND, N.E. ...	1 above	124	0	— 347 + 73
3. ENGLAND, E. ...	3 above	156	0	— 275 + 154
4. MIDLAND COS. ...	2 above	146	0	— 378 + 150
5. ENGLAND, S. ...	2 above	143	0	— 374 + 204
Principal Grazing, &c., Districts.				
6. SCOTLAND, W. ...	0 (aver.)	106	0	— 255 + 107
7. ENGLAND, N.W. ...	0 (aver.)	127	0	— 276 + 117
8. ENGLAND, S.W. ...	0 (aver.)	128	0	— 343 + 254
9. IRELAND, N. ...	1 below	111	0	— 238 + 67
10. IRELAND, S. ...	1 above	126	0	— 209 + 113
— CHANNEL ISLANDS	0 (aver.)	139	0	— 285 + 154

DISTRICTS.	RAINFALL.			BRIGHT SUNSHINE.	
	More or less than the Mean for the Week.	No. of Rainy Days since Jan. 3, 1888.	Total Fall since Jan. 3, 1888.	Percentage of possible duration for the Week.	Percentage of possible duration since Jan. 3, 1888.
Principal Wheat-producing Districts.	Tenths of Inch.		Ins.		
0. SCOTLAND, N. ...	4 more	146	22.7	8	29
1. SCOTLAND, E. ...	3 less	128	18.8	11	30
2. ENGLAND, N.E. ...	4 less	118	17.3	27	26
3. ENGLAND, E. ...	5 less	120	15.9	39	28
4. MIDLAND COS. ...	6 less	112	15.5	40	26
5. ENGLAND, S. ...	5 less	113	17.2	45	27
Principal Grazing, &c., Districts.					
6. SCOTLAND, W. ...	5 less	121	26.0	15	41
7. ENGLAND, N.W. ...	3 less	122	17.5	31	28
8. ENGLAND, S.W. ...	7 less	123	20.1	28	33
9. IRELAND, N. ...	1 more	126	22.8	18	28
10. IRELAND, S. ...	5 less	115	22.8	24	33
— CHANNEL ISLANDS	4 less	134	18.5	57	38

THE PAST WEEK.

The following summary record of the weather for the week ending Aug. 13, is furnished from the Meteorological Office:—

"The weather has continued cold, rainy, and unseasonable in the north-western and northern parts of the kingdom, but in all other districts a decided improvement has taken place, fine and dry conditions being generally prevalent.

"The temperature has again been below the mean in 'Scotland, N.,' and 'Ireland, N.,' but in most of the other northern and western districts it has just equalled the mean, while over the eastern, central, and southern parts of England, it has varied from 1° to 3° above. The highest of the maxima, which were recorded in most places, either on the 9th or 10th, ranged from 85° in 'England, S.,' and 'England, E.,' and 84° in the 'Midland Counties,' to 79° in 'England, N.E.,' and the 'Channel Islands,' and to between 67° and 77° elsewhere. The lowest of the minima, which were registered on somewhat irregular dates, ranged from 39° to 49° in Scotland, and from 44° to 51° over England, while in Ireland

the minimum was 48°, and in the 'Channel Islands' 52°. During the night of the 9th—10th the thermometer did not fall below 63° at several of our southern and south-eastern stations, while in London the minimum was no lower than 65°.

"The rainfall has been rather more than the mean in 'Scotland, N.,' and 'Ireland, N.,' but considerably less in other districts. Over eastern, central, and southern England the fall has been very slight.

"Bright sunshine shows a decided increase over the greater part of England, but a decrease over Ireland, Scotland, and the west of England. The percentage of the possible amount of duration ranged from 8 to 15 in Scotland, from 18 to 28 in Ireland, and from 27 to 45 over England. In the 'Channel Islands' the percentage was 57."

NOTICES TO CORRESPONDENTS.

INTELLIGENT READERS, do PLEASE NOTE that letters relating to ADVERTISEMENTS, or to the supply of the Paper, should be addressed to the PUBLISHER, and that all communications intended for publication, as well as specimens and plants for naming, should be addressed to the EDITOR. Such communications should be written on one side only of the paper, and sent as early in the week as possible. Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

BEGONIA: *D. M. C.* Your flower had withered when we received it; but, so far as we can tell, there are many better.

BUNCH OF GRAPES: *R. H. P.* Seeing that the growth is from one eye we should consider it to be one bunch.

CARNATIONS: *C. Lorenz.* In spite of the elaborate way in which they were packed, these arrived utterly shrivelled. A layer of moss should have been placed over the flowers. Cotton-wool, though so generally adopted, we look on as the worst possible packing material. Another time please to address the Editor.

CARNATIONS (SEEDLING): *W. W.* A very good lot, varied in colour, of good size and form.

CHISWICK: *T. H.* There is no difficulty in obtaining admission. Make yourself known, and you will be admitted. Strangers, and non-gardeners, pay 6d. for admission. You may cut your Aucubas now; do not delay too long.—*W. C.* If you make yourself known as a gardener you may be admitted without fee on any day except Sunday; otherwise you may have to pay 6d.

FUNGUS: *B. G.* The Giant Puff-ball (*Lycoperdon giganteum*). We suspect the heavy dressing of pig-manure with the tan was the cause of the decay of the Rhododendrons. We do not think the fungus is the cause of the malady. If a slice of the fungus be taken when it is still snow-white, and fried in batter, it will be found to have a very delicate flavour. It is quite harmless, but must not be eaten if at all discoloured.

INSECTS: *Southampton.* The insects found in considerable numbers in a lately-built house as very destructive, are a small species of the numerous family of Longicorn beetles. They are named *Obrium minutum*. Please send any further particulars to Professor Westwood, Oxford. *W.*

NAMES OF PLANTS: *D. T.* 7. *Potentilla argyrophylla*; 8. *Geranium sanguineum* var.; 9. *Scabiosa columbaria* var.; 10. *Achillea ptarmica*.—*C. A. L.* 1. *Stachys betonica*; 2. *Verbascum lychitis*; 3. *Digitalis grandiflora*; 4. *Cephalaria tartarica*; 5. *Digitalis lutea*; 6. *Inula helenium*.—*W. E.* *Dianthus liburnicus*; *Helichrysum angustifolium*.—*E. Cooper.* *Iris Robinsoniana*, and *Fuchsia venusta*.—*Sir J. W.* 1. *Pterocarya caucasica*; 2. *Cladrastis tinctoria*, alias *Virgilia lutea*; 3. *Syringa Emodi*; 4. *Abies nobilis*; 5. *A. magnifica*.—*G. W. W.* *Rubus chamaemorus*.—*J. A. M.* *Hymenocallis littoralis*, *Salieb*. *Zeylanicum* and *maritimum* belong to *Pancratium*, the other species you mention to *Hymenocallis*. The two genera are quite distinct in fruit and seeds. *J. G. Baker.*—*J. M. D.* 1. *Dendrobium Fytcheanum*; 2. *Acrides maculosum*.—*W. A. G.* 1. *Adiantum concinnum latum*; 2. *A. concinnum*; the name formerly given was a misprint; 3 has a resemblance to an erect form of *A. decorum*, but it may

be the variety you mention.—*H. James.* Numbers detached. *Jasminum revolutum*—yellow flower, climber; shrub with lilac bract is *Leycesteria formosa*; small yellow flower with much divided leaf is *Corydalis lutea*; hardy shrub, *Hibiscus syriacus*, *alias* *Althaea frutex*.—*T. K. & Co.* *Richardia*. Double spathe forms of *Arum* (don't call it a Lily!) are not uncommon. The Poplar seems to be the common *Aspen* (*P. tremula*).—*Mrs. E. Asperula cynanchica* (*Rubiaceae*), closely allied to the Bed-straws (*Galium*), common on limestone downs.—*E. C.* *Broughtonia sanguinea*.—*J. T. D.* *Euphorbia lathyris*.—*L. J.* *Spiraea ariifolia*.—*L. and B.* 1, *Melica nutans*; 2, *Aira flexuosa*; 3, *Juncus maritimus*; 4, *Carex vesicaria*; 5, *Juncus lamprocarpus*, Ehrh.; 6, *Carex sylvatica*; 7, *Sesleria coerules*; 8, *Nardus stricta*.—*E. J. H.* *Potentilla*; we cannot name from the specimen sent, send more material and leaves.—*C. W. D.* *Allium macranthum* (*N. America*).—*J. Morton.* *Achillea ptarmica*, *Calystegia sepium*, *Erigeron speciosus*.—*F. Dunn.* *Francoa ramosa*.—*J. H.* 1, *Zelkova crenata*; 2, *Rubus odoratus*.—*G. W.* *Wild Mignonette*, *Reseda lutea*, *Linaria spuria*, *Medicago echinus*, and *Berteroa incana*.

PEAS: *J. H.* A malformation, due to the union of two or more stems.

PELARGONIUM NOT FLOWERING: *Inquirer.* Without knowing the treatment given, we cannot say for certain why your plant has not flowered. Probably it has had too much water and too little sun-heat, like many other plants this year.

PINK ESCHOLZIA: *X. Y. Z.* There is such a variety in which the outer surface of the petals is rose-coloured.

RASPBERRIES: *J. W. B.* A fair average crop would be about $1\frac{1}{2}$ to $1\frac{1}{2}$ ton per acre; or on land of very superior quality, and in a good season, as much as $2\frac{1}{2}$ tons per acre. *W. B. C.*

THE ROYAL HORTICULTURAL SOCIETY: *Spade.* We share your views as to the Associateship to a certain extent. We think it a very unfortunate arrangement, but one that will die of itself. We altogether demur to your proposition, that any intentional insult to the craft was intended. The Associateship should in our opinion be an honor without price conferred after examination on deserving candidates. Men of the stamp you name whose brains are at the service of the Society, but whose means preclude their subscribing, should be elected Honorary Members. The Fellows might recommend each year to the Council, a certain number, and a general meeting might confirm the elections or otherwise. The Drill-Hall meetings have been avowedly experimental, and can be dropped at the end of the year if thought desirable. Whether the public, or even the members of committees, would go to Chiswick fortnightly, is extremely doubtful. It is true they went in numbers to the Apple Congress, and we hope they will do so again.

TOMATO: *L. B. G.* One of the diseases caused by fungi. See p. 44 for full details.—*R. T.* Although, botanically speaking, this is a fruit, it is used at table as a vegetable or a salad. On the ground, therefore, that schedules are drawn up from the point of view of practical horticulture, and not of botany, we should, in the absence of any provision to the contrary, disqualify a collection of fruit containing Tomatos.

TOMATO SAUCE: *C. S.* For present use: Take a dozen ripe Tomatos and press the seeds and juice from them. Place them in a stewpan with a quarter of a pint of stock and a pinch of cayenne. Let them stew slowly until they are quite soft, then press them through a fine sieve, and put the pulp back into the stewpan with a little salt. Let it simmer for a few minutes, and serve very hot, and about the thickness of cream. If liked, a blade of mace, two or three shallots, and two or three cloves, may be stewed with the Tomatos, but most lovers of Tomatos prefer that they should retain their natural piquancy and flavour, which is masked if too many ingredients are added to the sauce. If to be stored, put the Tomatos into an earthen jar in a cool oven. When they are quite soft, separate the pulp from the skins. Mix with this, and half the juice that flowed from the tomatos while baking, the following ingredients:—To each dozen of Tomatos a dessert spoonful of salt, a dessert spoonful of powdered ginger, a pinch of cayenne, and two table-spoonfuls of vinegar. Boil all up together, put the sauce into perfectly dry, wide-mouthed bottles, and store it in a cool dry

place. It must be frequently examined to ascertain if it is in good condition. If it looks watery and thin, turn it out of the bottles and boil it up again, with a little more cayenne and ginger. Some cooks add a *souppcon* of garlic, but we do not recommend it. Tomato sauce is difficult to make so that it will keep long. To ensure this, so much spice and artificial flavouring must be added that the Tomatos are apt to lose their natural flavour. Store in moderate-sized bottles, as the sauce will not keep when once the bottle has been opened.

VINE DISEASES: *Anateur, Goswell, Quill Pen.* All cases of "so-called scalding." See reply to correspondents last week.

COMMUNICATIONS RECEIVED.—*E. C.*—*J. R.*—*H. W. W.*—*F. W. B.*—*C. W. D.*—*E. J. C.*—*A. O. W.*—*H. C.*—*Genava*.—*F. T.*—*Sydney*.—*J. C. & Co.*—*J. W.*—*W. W.*—*J. M. V.*—*Natal*.—*W. S.*—*H. W. W.*—*J. S.*—*G. R. King*.—*J. H.*—*W. Kelly*.—*W. C.*—*C. A. Wood*.—*W. Cornwallis*.—*West*.—*T. Mehan*, Philadelphia.—*C. C.*—*F. W. B.*—*J. C. & Co.*—*A. O. W.*, Chester.—*W. Broughton*.

Correspondents sending plants or fruits to be named, or asking questions demanding time and research for their solution, must not expect to obtain an answer to their enquiries in the current week.

MARKETS.

COVENT GARDEN, August 16.

[We cannot accept any editorial responsibility for the subjoined reports, which, however, are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list, and who are responsible for the quotations. It must be remembered that these quotations represent averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the supply in the market, and they fluctuate, not only from day to day, but often several times in one day, and therefore the prices quoted as averages for the past week must not be taken as indicating the particular prices at any particular date, and still less can they be taken as guides to the prices in the coming week. ED.]

MARKET lighter, with business falling off, the soft fruit being nearly finished. Prices unaltered. *James Webber, Wholesale Apple Market.*

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
<i>Aralia Sieboldi</i> , doz. 6 0-18 0		<i>Ficus elastica</i> , each. 1 6-7 0	
<i>Balsams</i> , per doz. 2 0-4 0		<i>Fuchsias</i> , doz. 3 0-8 0	
<i>Bouvardias</i> , per dozen 9 0-12 0		<i>Heliotropes</i> , dozen... 3 0-6 0	
<i>Calceolarias</i> , dozen 3 0-6 0		<i>Hydrangeas</i> , dozen... 9 0-18 0	
<i>Carnations</i> , per doz. 6 0-18 0		<i>Liliums</i> , var., doz... 18 0-30 0	
<i>Cockscombs</i> , per doz. 2 6-4 0		<i>Lobelias</i> , per dozen 3 0-8 0	
<i>Colours</i> , dozen 2 0-4 0		<i>Marguerites</i> , doz. 6 0-12 0	
<i>Crassula</i> , per doz. 9 0-12 0		<i>Mignonette</i> , 12 pots 3 0-6 0	
<i>Cyperus</i> , per dozen 4 0-12 0		<i>Myrtles</i> , per dozen 6 0-12 0	
<i>Dracena terminalis</i> , per dozen 30 0-60 0		<i>Palms</i> in var., each 2 6-21 0	
— <i>viridis</i> , per doz. 12 0-24 0		<i>Pelargoniums</i> , doz... 6 0-12 0	
<i>Eucynomys</i> , in var., per dozen 6 0-18 0		— <i>Ivy</i> -leaf, dozen... 3 0-6 0	
<i>Evergreens</i> , in var., per dozen 6 0-24 0		— <i>scarlet</i> , dozen... 3 0-6 0	
<i>Ferns</i> , in var., doz. 4 0-18 0		<i>Rhodanth</i> , per doz... 4 0-6 0	
<i>Foliage plants</i> , various, each 2 0-10 0		Scented <i>Geranium</i> , per dozen 3 0-6 0	
		— <i>Verbena</i> , per doz. 4 0-6 0	
		<i>Zinnia</i> , per dozen 4 0-6 0	

BEDDING-OUT PLANTS.

Per dozen, 1s. to 2s.; per box, 1s. to 3s.

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
<i>Asters</i> , 12 bunches... 4 0-6 0		<i>Panseys</i> , 12 bun. ... 1 0-2 0	
— <i>French</i> , per bun. 1 0-1 6		<i>Pelargoniums</i> , 12 spr. 0 6-1 0	
<i>Bouvardias</i> , per bun. 0 6-1 0		— <i>scarlet</i> , 12 spr. 0 2-0 4	
<i>Carnations</i> , 12 blms. 1 0-2 0		<i>Pinks</i> , 12 bun. ... 3 0-6 0	
— dozen bunches... 4 0-6 0		<i>Poppies</i> , 12 bun. ... 4 0-6 0	
<i>Chrysanthemums</i> , 12 blooms ... 1 0-4 0		<i>Primulas</i> , double, 12 sprays ... 0 9-1 0	
<i>Cornflower</i> , 12 bun. 1 6-3 0		<i>Pyrethrums</i> , 12 bun. 2 0-4 0	
<i>Eucharis</i> , per dozen 3 0-6 0		<i>Rhodanth</i> , 12 bun. 4 0-6 0	
<i>Forget-me-nots</i> , 12 bunches ... 2 0-4 0		<i>Roses</i> , Tea, per doz. 0 6-1 6	
<i>Gardenias</i> , 12 blooms 1 6-4 0		— <i>coloured</i> , dozen 2 0-4 0	
<i>Gladiolus</i> , doz. sprays 0 8-1 6		— <i>red</i> , per dozen ... 0 6-1 0	
<i>Heliotropes</i> , 12 spr. 0 6-1 0		— <i>12 bunches</i> 2 0-6 0	
<i>Lavender</i> , 12 bun. 3 0-4 6		— <i>Suifano</i> , dozen... 0 6-0 9	
<i>Lilium longiflorum</i> , 12 blooms ... 3 0-5 0		<i>Stephanotis</i> , 12 spr. 2 0-4 0	
<i>Marguerites</i> , 12 bun. 3 0-6 0		<i>Sweet Peas</i> , 12 bun. 2 0-4 0	
<i>Mignonette</i> , 12 bun. 1 0-3 0		<i>Sweet Sultan</i> , 12 bun. 2 0-4 0	
		<i>Tuberose</i> , 12 blms. ... 0 4-0 9	

VEGETABLES.—AVERAGE RETAIL PRICES.

	s. d. s. d.		s. d. s. d.
<i>Artichokes</i> , p. doz. 4 0-...		<i>Mustard and Cress</i> , punnet ... 0 4-...	
<i>Beans</i> , Kidney, lb. 0 4-...		<i>Onions</i> , per bunch ... 0 5-...	
<i>Beet</i> , red, per dozen 1 0-2 0		<i>Parsley</i> , per bunch ... 0 4-...	
<i>Carrots</i> , per bunch ... 0 9-...		<i>Potatoes</i> , per cwt. ... 4 0-5 0	
<i>Cauliflowers</i> , each ... 0 6-...		— <i>kidney</i> , per cwt. 4 0-5 0	
<i>Celery</i> , per bundle ... 1 6-2 6		<i>Shallots</i> , per lb. ... 0 6-...	
<i>Cucumbers</i> , each ... 0 9-1 0		<i>Spinach</i> , per bush. 3 0-...	
<i>Endive</i> , per dozen 4 0-...		<i>Tomatoes</i> , per lb. 0 9-1 0	
<i>Green Mint</i> , bunch ... 0 4-...		<i>Turnips</i> , per bunch, new ... 0 5-...	
<i>Herbs</i> , per bunch 0 4-...		<i>Vegt. Marrows</i> , each 0 2-...	
<i>Leeks</i> , per bunch ... 0 6-...			
<i>Lettuce</i> , per dozen 1 6-...			
<i>Mushrooms</i> , punnet 1 0-1 6			

POTATOS.—Jerseys, unsaleable; English, 2s. 6d. per bushel.

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
<i>Cherries</i> , half-sieve... 2 0-5 0		<i>Lemons</i> , per case ... 1 0-21 0	
<i>Currants</i> , blk., half-sieve ... 3 0-3 6		<i>Melons</i> , each ... 1 0-3 0	
— <i>Red</i> , half-sieve... 2 0-3 0		<i>Peaches</i> , dozen ... 2 0-10 0	
<i>Grapes</i> , per lb. ... 1 0-3 0		<i>Pine-apples</i> , Eng., lb. 2 0-3 0	
		— <i>St. Michael</i> , each 2 0-5 0	

SEEDS.

LONDON: August 15.—Messrs. John Shaw & Sons, seed merchants, of 37, Mark Lane, E.C., describe to-day's market as exceedingly firm. The article still most in favour is white Clover seed, in which a further rise is noted. Alsike and Trefoil also tend upwards. New English Trifolium is offering at moderate rates. Samples of new winter Tares and Rye are now coming to market. Lower prices are taken for Canary seed. There is no change in Hemp seed. Blue Peas keep steady. In sowing Mustard and Rapeseed there is no quotable alteration. Feeding Linseed is firm.

CORN.

Averages.—Official statement showing the average price of British corn, imperial measure, in the week ended August 11:—Wheat, 34s. 6d.; Barley, 24s. 9d.; Oats, 18s. For the corresponding week in 1887:—Wheat, 33s. 3d.; Barley, 20s. 7d.; Oats, 16s. 10d.

FRUIT AND VEGETABLES.

SPITALFIELDS: August 15.—Plentiful supplies of all kinds of fruit, farm and market garden produce; the demand, however, rather slow. Quotations:—Fruit: Green Gages, 4s. to 5s. per half-bushel; Cherries, 2s. 6d. to 5s. 6d. per half sieve; Strawberries, 3d. to 6d. per pound punnet; black Currants, 2s. 3d. to 3s. per half sieve; red Currants 2s. to 2s. 3d. do.; white Currants, 2s. 6d. to 3s. do.; Gooseberries, 2s. to 3s. do.; Plums, English, 3s. 6d. to 4d. per half-flat or basket; foreign do., 2s. to 3s. do.; Pears, 2s. to 3s. per half-bushel; Apples, 2s. 6d. to 3s. 6d. do.; English Tomatos, 4s. to 6s. per peck; foreign do., 2s. to 3s. 6d. per box. Vegetables: Cabbages, 1s. 3d. to 2s. per tally; Scarlet Runners, 4s. per bushel; Broad Beans, 1s. to 1s. 6d. do.; Peas, 1s. 6d. to 2s. do.; do., 3s. to 4s. do.; per sack; Vegetable Marrows, 6d. to 6d. per dozen; frame Cucumbers, 3s. to 4s. 6d. per dozen; common do., 1s. to 2s. do.; Turnips, 1s. 6d. to 2s. 6d. per dozen bunches; Carrots, 1s. to 2s. do.; spring Onions, 1s. 3d. to 2s. do.; Parsley, 9d. to 1s. 3d. do.; Mint, 1s. to 1s. 6d. do.; foreign Onions, 6s. to 7s. per case; do., 4s. to 5s. per bag; Cos Lettuces, 6d. per score; Endive, 1s. to 1s. 6d. per doz.; Walnuts (for pickling), 1s. 6d. to 2s. per half sieve; Mangels, 15s. to 20s. per ton.

STRATFORD: August 14.—Supply has been good during the past week, and a fair trade was done at the following prices. Quotations:—Cabbages, 2s. tv to 3s. per tally; Apples, English, 5s. to 6s. 6d. per bushel; ditto Bordeaux, 7s. to 8s. per case; Gooseberries, 2s. 6d. to 3s. per half sieve; Currants, black, 3s. to 3s. 6d. do.; red, 2s. 6d. do.; Dutch Plums, 2s. per bushel; Pears, 2s. to 3s. 3d. do.; Tomatos, 1s. to 3s. per box; Green Gages, 3s. to 3s. 3d. per flat.

POTATOS.

BOROUGH AND SPITALFIELDS: August 14.—The blight continues to interrupt the trade, which is extremely dull and irregular; lower prices in many cases taken, but not shown in the extreme quotations. Regents, 65s. to 75s.;—Shaws, 60s. to 70s.; Hebrons, 70s. to 84s.; kidneys, 70s. to 80s. per ton.

SPITALFIELDS: August 15.—Quotations:—Beauty of Hebron, 2s. to 2s. 6d.; Early Rose, 1s. 6d. to 2s. 6d.; English Regents, 3s. to 3s. 6d.; do. kidneys, 3s. to 4s.; Jersey do., 3s. to 4s.; do. flukes, 3s. 6d. to 4s. 6d.; Cherbourg flukes, 3s. to 4s. per cwt.

STRATFORD: August 14.—Quotations:—Myatt's, 55s. to 80s.; Beauty of Hebron, 40s. to 70s.; Early Rose, 35s. to 50s. and Regents, 60s. to 70s. per ton.

HAY.

Averages.—The following are the averages of the prices obtained at the various metropolitan markets during the past week:—Clover, prime, 98s. to 137s.; inferior, 76s. to 86s.; hay, prime, 94s. to 130s.; inferior, 76s. to 84s.; and straw, 26s. to 48s. per load.

BEESEON'S MANURE.—The Best and Cheapest Fertiliser for all purposes. Write for Circular containing the Leading Gardeners' and Market Growers' Reports. Sold in Tins, 1s., 2s. 6d., 5s. 6d., and 10s. 6d. each, or 1 cwt. Bags, sealed, 13s. By all Seedsmen, or apply direct to W. H. BEESEON, Carbrook Bone Mills, Sheffield.

SAVE HALF THE COST.

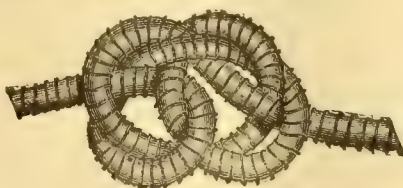
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BEDFORDSHIRE
SILVER SAND,
Coarse and Fine,

Is admitted by the leading Nurserymen to be the Best Quality obtainable in the Trade.
Consumers should Buy Direct from the Owner of these Celebrated and Extensive Pits, which contain a practically inexhaustible supply of Splendid Sand, and thus save half the ordinary cost. NO TRAVELLERS OR AGENTS.
Apply direct to the Proprietor for Samples and Price.
Free on Rail or Canal. All Orders executed with the utmost promptness and under personal supervision. Special Railway Rates in force to all parts.
GEO. GARSIDE, Jun., F.R.H.S., Leighton Buzzard, Beds.

GISHURST COMPOUND, used by leading Gardeners since 1859 against Red Spider, Mildew, Thrips, Green Fly, and other Blight. 1 to 2 ounces to the gallon of soft-water; 4 to 16 ounces as winter dressing for Vines and Orchard-house Trees; and in 1 other from the cake against American Blight. Has outlived many preparations intended to supersede it. Boxes, 1s., 3s., and 10s. 6d.

GISHURSTINE keeps Boots dry and soft on wet ground. Boxes, 6d. and 1s., from the Trade. Wholesale from PRICE'S PATENT CANDLE COMPANY (Limited), London.

GLASS HOUSES for SALE, 36 feet long by 18 feet, with division in centre, with flower stages, &c. Apply to F. P., care of Mr. Leonard, Plumber and Glazier, Och Street, Abingdon.



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The Sphincter Grip Spring Steel Galvanised Armoured Hose is the most valuable improvement in Hose since 1840. Its lasting qualities are ten times greater than any Hose not armoured. Its complete success has caused some parties to infringe the Patents owned and controlled solely by us; and we therefore notify all such that the making, vending, or use of any armoured wire-wound Hose not of our manufacture is an infringement of one or more of our several Patents, any violation of which will be promptly prosecuted. Brass plates set between the Hose and wire denote our Manufacture and the Patents.

For Price Lists and particulars of
The Original and Only Genuine Sphincter Grip
Armoured Hose,
APPLY TO THE

S.C.A. HOSE CO. (Ltd.),
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(Unprecedentedly low prices.)

GLASS.—CHEAP GLASS.
8s. 6d. per 100 feet 15 oz. 12x10, 18x12, 18x14, 24x14,
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12s. per 100 feet 21 oz. 16x12, 16x14, 20x16, 24x18, &c.
Putty, 6s. 6d. per cwt.; White Lead, genuine, 21s.; Our
Specialty, 17s. 6d. per cwt.; Paints ground in Oil, Stone Ochre,
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Varnish, from 5s. 6d. per gal.—Full price List on applica-
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To Horticulturists.—Great economy in Fuel, and other
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SMOKELESS ANTHRACITE.—For infor-
mation as to the mode of using this coal, and prices
delivered to any railway station, apply to the **TRIMSARAN**
CO. (Limited), 62, Leadenhall Street, London, E.C.

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GARDEN NETTING, 2 yards wide, 14d. or per 100 yards,
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SCRIM CANVAS, 1 yard wide, 3d.; 1½ yard, 4d.; and
2 yards, 6d. per yard.
TIFFANY, 38 inches wide, in 20 yard pieces, 3s. 6d. per piece.
SHADING BLINDS made up any size.
RICK CLOTHS, TARPULINS, Corn and Potato SACKS,
FLAGS, TENTS, &c., for Sale or Hire.
TOBACCO PAPER, RAFFIA, and Garden MATS of all kinds.

To Nurserymen, Seed Merchants, and Florists.
J. BLACKBURN and SONS are offering Arch-
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Petersburg Mats and Mat Bags, Raffia Fibre, Tobacco Paper,
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14x12	20x15	
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No. 81. GALVANISED AFTER MADE.
For training Peas instead of
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6 feet by 3 feet ... 2s. each.
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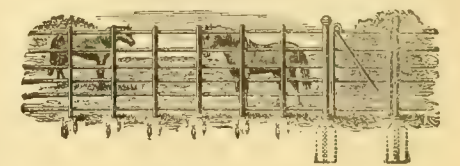
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FUMIGATING PAN
Is vastly superior to any other.
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MUSHROOM SPAWN
MOST SUPERIOR, 5/- PER BUS.
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CERTAIN SUDDEN DEATH
To all Grubs, Aphids, Lice, Red Spider, Thrip, Mealy
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PERFECTLY
HARMLESS } to the Hands and Skin, but will cure
Ringworm in Animals, and all diseases
produced by parasites.
FIR TREE OIL
(SOLUBLE) INSECTICIDE
A combination of Hydrocarbon Oils, made soluble in
Water, for destroying ALL INSECTS & PARASITES
that infest Trees and Plants, whether at the Roots or
on the Foliage.
Sold by Seedsmen and Chemists, 1s. 6d., 2s. 6d., & 4s. 6d.;
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A Treatise on FIR TREE OIL as an INSECTICIDE,
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Wholesale: Hooper & Co.; Corey, Roper, Fowler & Co.;
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all Letters so addressed are opened by the authorities and
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Accidents all the Year Round.

Provide against them by Policy of the

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Moderate premiums—Favourable conditions—new concessions.
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PlaceCopies of each Journal are filed at the
above Offices for the use of Advertisers.**WANTED**, at the Chiswick Park Club, a
middle-aged man as WORKING GARDENER and
GROUNDMAN, willing to make himself generally useful.
He must have thorough knowledge of Making out and Pre-
paring Tennis Courts. A cottage is provided.—Apply in own
handwriting, stating wages required, enclosing copies of testi-
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DENER. Flower and Kitchen Garden, and Con-
servatory.—Apply with references, &c., CHARLES S. BAR-
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to Grow Soft-wooded Plants and Cut Flowers for
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W. M. RUMSEY, Joyning's Nurseries, Waltham Cross, N.**WANTED**, a MAN for the Pleasure Grounds;
one who can Mow well. Wages 18s., and lodgings.—
C. GOLDSMITH, Kelsey Manor Gardens, Beckenham.**TRAVELLER**.—A Nurseryman having a
large stock of select Hardy Shrubs, Fruit Trees, &c., &c.
(in the finest possible condition), is open to negotiate with a
good TRAVELLING SALESMAN (on Commission only). He
will be allowed to Sell Cheaply.—Terms with proofs of ability
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engaging in other business not horticultural.**WANTED**, a SHOPMAN, with a thorough
knowledge of Seeds, Plants, and Bulbs. Must be of
good address, energetic, and methodical. Wages to commence
at 28s. per week.—Apply, giving full particulars, to J. R. S.,
Gardeners' Chronicle Office, 41, Wellington Street, Strand, W.C.**WANTED**, for a young but rapidly-growing
Seed and Florist's Business, in Scotland, a thoroughly
efficient SHOPMAN well versed in Vegetable and Flower
Seeds, Bulbs, &c., and having a knowledge of Plants and
Flowers. Must have at least ten years' experience and be
thoroughly recommended as accurate, energetic, and trust-
worthy in every respect.—Address, giving full particulars of
training, age, wages, &c., CANDORE, *Gardeners' Chronicle*
Office, 41, Wellington Street, Strand, W.C.**WANTED**, a young Man, as COUNTER
ASSISTANT, who has served a few years in a good
house.—Must be industrious, and of good address.—Applica-
tions, stating wages expected, &c., to J. W. M., 23, Upper
Sackville Street, Dublin.**WANTED**, a PORTER. Smart young Man,
accustomed to Bulb Trade.—SMALL AND CO., 23,
Lime Street, E.C.

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Letters addressed "Poste Restante" to initials or to fictitious
names are not forwarded, but are at once returned to the
writers.**NOTICE TO ADVERTISERS.**—In many instances
Remittances in Payment of Repeat Advertisements are
received without name, address, or anything beyond the
postmark on envelope by which to identify the sender; this
in all cases causes a very great deal of trouble, and fre-
quently the sender cannot be identified at all.Advertisers are requested when Remitting to give their
Names and Addresses, and also a Reference to the Adver-
tisement which they wish repeated.

Gardeners, Farm-Bailiffs, Foresters, &c.

DICKSONS (Limited) are always
in a position to RECOMMEND MEN of the
highest respectability, and thoroughly practical at their
business. All particulars on application.
Telegraphic and Postal Address "DICKSONS, CHESTER."

RICHARD SMITH AND CO.

beg to announce that they are constantly receiving
applications from Gardeners, seeking situations, and that they
will be able to supply any Lady or Gentleman with particulars,
&c.—St. John's Nurseries, Worcester.

SCOTCH GARDENERS.

—JOHN DOWNIE (of the late firm of Downie & Laird),
Seedsman, 144, Princes Street, Edinburgh, has at present on
his List a number of SCOTCH GARDENERS, waiting re-
engagements. He will be pleased to supply full particulars
to any Lady, Nobleman, or Gentleman requiring a trustworthy
and competent Gardener.

B. S. WILLIAMS begs to intimate that he

has at present in the Nursery and upon his Register
some excellent Men, competent either to fill the situation of
HEAD GARDENER, BAILIFF, FOREMAN, or JOURNEY-
MAN. Ladies and Gentlemen requiring any of the above will
please send full particulars, when the best selections for the
different capacities will be made.—Holloway, N.

GARDENER (HEAD).—Age 27, married

when suited.—C. PAY can with confidence recommend
to any Gentleman requiring a steady, trustworthy man as
above.—M. JONES, The Gardens, Hamptworth Lodge, Downton.

GARDENER (HEAD).—Age 38, married;

can be highly recommended as experienced and trust-
worthy. Disengaged September 1. Reference given.—JOHN
PENTLAND, Bramble Hill, Lyndhurst, Hants.

GARDENER (HEAD).—Age 40, married;

experienced in all departments; also Land and Stock.
Wife understands Dairy. Good character.—F. G., Cotton
Road, Potter's Bar, Middlesex.

GARDENER (HEAD); age 30.—A GENTLE-

MAN wishes to recommend his Head Gardener to any
Lady or Gentleman requiring the same. Could Manage Land
and Stock if required.—T. FORD, 5, Statens Gardens,
Twickenham.

GARDENER (HEAD), where one or more are

kept.—Age 30, married, no family; thoroughly ex-
perienced in the Cultivation of Flowers, Fruit and Vegetables.
Good personal character.—A. H., 4, Cambridge Terrace, St.
Leonards, Mortlake.

GARDENER (HEAD).—Age 35, married;

to any Lady or Gentleman requiring the services of a
thorough practical man. Twenty years' experience in all
branches. Four and a half years' good references.—THOMAS
CARTER, The Gardens, Ospringe House, Faversham, Kent.

GARDENER (HEAD); age 32.—THOMAS

FLETCHER, Gardener to the late William Abbott, Esq.,
The Abbey, Kensing-on, is seeking a fresh appointment.
Thoroughly practical in all branches. Excellent character and
references.—THOMAS FLETCHER, The Gardens, The Abbey,
Campden Hill, Kensington, W.

GARDENER (HEAD); age 32.—Mr. WEST-

COTT, Head Gardener to His Grace The Duke of Cleve-
land, Raby Castle, Durham, will be glad to recommend his
Foreman, James Tullett, to any Lady or Gentleman requiring
a thoroughly practical good Gardener.—Sixteen years' good
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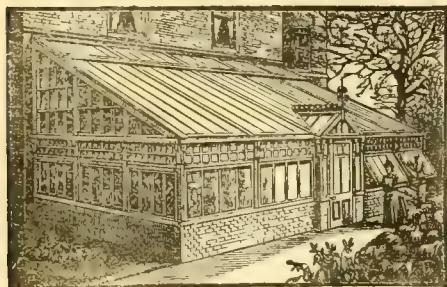
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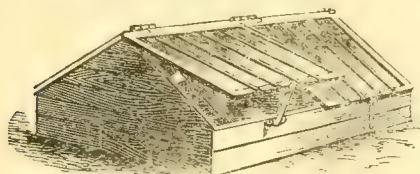
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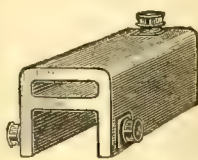
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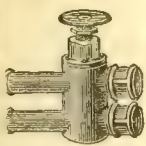
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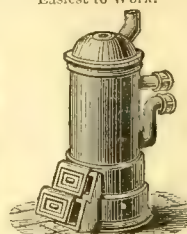
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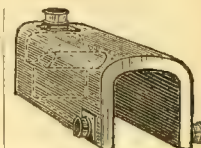


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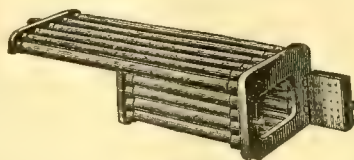
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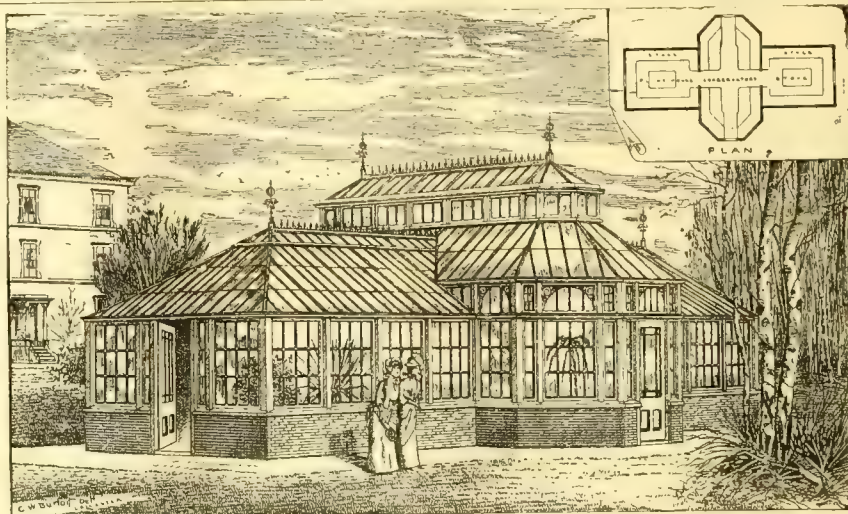
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ESTABLISHED 1841.
No. 2487.

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Hyacinths, Tulips, Crocus, Lilies, &c.

C. G. VAN TUBERGEN, Jun., Haarlem.

Holland.—Wholesale CATALOGUE now ready, and may be had free on application to

Messrs. R. SILBERRAD AND SON, 25, Savage Gardens, Crutched Friars, London, E.C.

SIMPLE INSTRUCTIONS by which an

abundance can be insured of delicious MUSHROOMS.

See Seed LIST, Free.

RICHARD SMITH AND CO., Seed Merchants and Nurserymen, Worcester.

GEORGE LEE has some good strong Plants

of LAXTON'S "KING OF THE EARLIES" STRAWBERRY, 5s. per 100; good plants, 3s. 6d. per 100. Also

"COMTE DE BRAZZA" VIOLET, fine for pit or frame work, 15s. and 20s. per 100.—Clevedon, Aug. 25.

A FINE HOUSE of MUSCATS for SALE,

at once; 10 miles from town.

Apply, Mr. FRIEND, Staunmore Park, Middlesex.

SULPHIDE OF POTASSIUM (Harris).—A

certain cure for Mildew on Plants, Red Spider, Aphids, &c. Enough to make 32 gallons of solution, free for 1s. 3d.

The only kind to use is "Harris's" specially prepared Sulphide of Potassium. Sole Manufacturers:—

PHILIP HARRIS AND CO. (Limited), 9, Bull Ring, Birmingham.

PEACHES, PEACHES, ME ONS, &c.—

Highest Market Prices guaranteed for really good and well-packed fruit of the above.—HENRY RIDES (late Wise & Rides), Fruit and Flower Salesman, Covent Garden, W.C.

Surplus Cut Flowers.

HOOPER AND CO. (Limited) RECEIVE and

DISPOSE of any quantity of above at best Market Prices. Boxes, &c., supplied.—Address, Commission Department, HOOPER AND CO. (Limited), Covent Garden, W.C.

SQUELCH AND BARNHAM,

North Row, Covent Garden, W.C., are OPEN TO DISPOSE OF any quantity of MUSCATS and BLACK GRAPES, TOMATOS, CUCUMBERS, FRENCH BEANS, STRAWBERRIES, CHOICE FLOWERS, &c. Highest Market Prices obtained. Account Sales daily; Cheques weekly or as preferred by Sender. Baskets and Labels supplied. References given.

MESSRS. GREGORY AND EVANS,

NURSERYMEN, Sidcup, and 285, 286, 287, 288, Flower Market, Covent Garden, W.C., are open to RECEIVE

CONSIGNMENTS of CHOICE CUT FLOWERS in any quantity for their Commission Department. Boxes and Labels supplied.

Telegram Address—"COMMISSION, SIDCUP."

Geranium Cuttings.

WANTED, VESUVIUS, WEST

BRIGHTON GEM, MRS. POLLOCK, MACMAHON, HENRY JACOBY, good Pink and Salmon. State price, and if desired to EXCHANGE, what plants required, to

G. B. FISCHER, Nurseryman, 30, High Street, Clapham, S.E.

WANTED, ORANGE TREES, LEMONS,

&c., standards or wall-trained. Must be clean and healthy. A quantity of Succession PINES FOR SALE.

Full particulars to GARDENER, Singleton, Swansea.

WANTED, Standard FIG TREES, three

Brunswick, three White Marseilles, 4 to 5 feet high, 3 or 4 years old. State price to

JOHN LAING AND SONS, Nurserymen, Forest Hill, S.E.

ROMAN HYACINTHS, Lilium candidum, Narcissus, Paper White and Double Roman, Anemone fulgens, &c.—Bulbs in splendid condition, from Louis Bremond fils, Orléans. Inspection invited, or samples sent on application to WILLIAM DENMAN, 7, Catherine Street, Covent Garden, W.C. See large Advertisement on page 205.

The Best Present for a Gardener. VINES and VINE CULTURE.

The most complete and exhaustive Treatise on Grapes and their Culture ever published.

New Edition.

Price 5s., post-free 5s. 6d.

A. F. BARRON, Royal Horticultural Society, Chiswick.

TO THE TRADE.—Please forward a Copy of

your PLANT CATALOGUE to

J. H. TROY, Box 85, Mamaroneck, New York.

CYCAS REVOLUTA.—For Sale, cheap, a

splendid specimen, with 8 large leaves. Apply to

ALFRED CARPENTER, Fratton Nursery, Fratton, Portsmouth.

"NOW IN BLOOM," in great perfection, large

quantities, "MRS. REYNOLDS' HOLE," the most beautiful of all BORDER CARNATIONS. Inspection invited, or blooms gratis and post-free to likely purchasers and admirers.

DICKSONS (Limited) Nurserymen, CHESTER.

Telegram and Postal Address—"DICKSONS, CHESTER."

ADIANTUM CUNEATUM,

MAIDENHAIR FERN.—Strong, healthy Plants in

Thumbs, 16s. per 100; well-furnished stuff, in 4's, 50s. per 100.

Cut Fern, 6s. per dozen bunches. For cash with order.

H. ROSE, Oakfield Nursery, Hampton.

Camellias, Azaleas, Rhododendrons, Palms, Orchids,

&c. Plants grown specially for English use.

C. VUYLSTEKE, NURSERYMAN,

Lochristy, Ghent, Belgium.

Wholesale CATALOGUE now ready, and may be had.

free on application to

Messrs. R. SILBERRAD AND SON, 25, Savage Gardens, Crutched Friars, London, E.C.

MR. DODWELL'S GRAND CARNATIONS.

The finest grown. 5000 Unbloomed Seedlings, warranted of the highest parentage, unrivalled whether for bedding or forcing for spring flowering. 3s. 6d. per doz.; 21s. per 100. Special terms for quantities. Particulars on application.

The Cottage, Stanley Road, Oxford.

CHEAP BULBS.—We are this season offering

First-class Bulbs at Lower Prices than have ever been placed before the public. LIST, Free, now ready.

J. R. PEARSON AND SONS, Chilwell, Notts.

BOUVARDIA, PRESIDENT CLEVELAND,

supercedes all other scarlet varieties. Strong plants in 4's, or smaller plants for Parcel Post. Price on application.

H. B. MAY, Dyson's Lane Nursery, Upper Edmonton.

Now in Full Bloom.

BEGONIAS.—Awarded Four Gold Medals.

Unequalled as a floral display. Visitors are cordially invited; free admission. Frequent trains from the City and West End to Catford Bridge and Forest Hill Stations.

JOHN LAING AND SONS, Stanstead Park, Forest Hill, S.E.

STRAWBERRIES.

Apply for Descriptive CATALOGUE, Post-free.

THOMAS RIVERS AND SON, Sawbridgeworth, Herts.

To Orchid Growers.

LIVE SPHAGNUM MOSS,

fresh and clean, 5s. per bag.

JOHN BURNS, Fellside, Kendal.

PASTUPLANTA, the best Artificial Manure.

It enriches the soil with the fertilisers drawn from it by plants; no unpleasant smell; admirably adapted for all pot plants. In bags: 112 lb., 19s.; 56 lb., 11s. 3d.; 28 lb., 6s. 9d.; 14 lb., 4s.; 7 lb., 2s. 3d. In tins, 1s. each. Sole Manufacturers,

PHILIP HARRIS AND CO. (Limited), 9, Bull Ring, Birmingham.

W. H. LASCELLES AND CO.,

HORTICULTURAL BUILDERS,

121, BUNHILL ROW, LONDON, E.C.

Plans and Estimates Free.

See large Advertisement, August 4, page 121.

SALES BY AUCTION.

Bulbs from Holland.

Sales every MONDAY, WEDNESDAY, and SATURDAY, in Large and Small Lots, to suit all Buyers.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., every MONDAY, WEDNESDAY, and SATURDAY, at half-past 12 o'clock precisely each day, first class consignments of HYACINTHS, TULIPS, CROCUSES, and other BULBS, arriving daily from well-known Farms in Holland.

On view morning of Sale, and Catalogues had.

Thursday Next. (Sale No. 7728.)

VALUABLE IMPORTED and ESTABLISHED ORCHIDS.
MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, August 30, at half-past 12 o'clock precisely, a COLLECTION of WELL-GROWN ESTABLISHED ORCHIDS, including some fine varieties, many in flower and bud. Also a valuable importation of ORCHIDS from Borneo, many collected in quite a new district, including:—*Cypripedium Dayana*, *C. Hookeri*, *C. Lawrencei*, *Saccolabium Hendersonianum*, *Phaius* species, &c. On view morning of Sale, and Catalogues had.

Special Sale of Orchids in Flower and Bud.

MR. J. C. STEVENS begs to announce that his NEXT SPECIAL SALE of ORCHIDS in FLOWER and BUD will take place at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, September 13, at half-past 12 o'clock precisely, and he will be glad if gentlemen desirous of entering plants for this Sale will SEND LIST AS SOON AS POSSIBLE.

Valuable Established Orchids.

MR. J. C. STEVENS begs to announce that he has received instructions from Robt. Warner, Esq., of Chelmsford, to offer for SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., about the MIDDLE of OCTOBER, a portion of his well-known COLLECTION of ORCHIDS, comprising many fine specimens of *Vandas*, *Cypripediums*, *Lælias*, *Cattleyas*, *Odontoglossums*, *Masdevallias*, &c.

Further particulars in future Advertisements.

Dutch Bulbs.

Every MONDAY, THURSDAY, and SATURDAY.
Great Unreserved Sales.

MESSRS. PROTHEROE and MORRIS will SELL by AUCTION, at the Central Sale Rooms, 67 and 68, Cheapside, London, E.C., every MONDAY, THURSDAY, and SATURDAY, at half-past 11 o'clock precisely, extensive consignments of first-class HYACINTHS, TULIPS, CROCUS, NARCISSUS, and other BULBS, from Holland, lotted to suit the Trade and Private Buyers.

On view morning of Sale, and Catalogues had.

Tuesday Next.

ORCHIDS IN FLOWER.

MESSRS. PROTHEROE and MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on TUESDAY NEXT, August 28, at half-past 12 o'clock precisely, a large quantity of ORCHIDS in FLOWER, from various collections, including *Cattleyas*, *Odontoglossums*, *Oncidium*, *Cypripediums*, *Masdevallias*, &c. Also *Oncidium macranthum*, grand variety, 45 flowers just opening.

On view morning of Sale, and Catalogues had.

Tuesday Next.

Direct Importation of ORCHIDS for unreserved Sale, just received in fine condition. Nine cases.

MESSRS. PROTHEROE and MORRIS will include the above in their SALE on TUESDAY NEXT, August 28, consisting of—

Four cases of *EPIDENDRUM BICORNUTUM*, including several large masses.
250 *Odontoglossum Percutitum* 100 *Oncidium serratum*
200 " *triumphantum* 100 *Odontoglossum hastilatum*
100 " *nebulosum* 100 " *hum*
Maxillarias, *Adu aurantiaca*, &c.

On view morning of Sale, and Catalogues had.

Stamford Hill, N.

EXPIRATION OF LEASE.—CLEARANCE SALE.

MESSRS. PROTHEROE and MORRIS will SELL by AUCTION, on the Premises, the Nursery, High Road, Stamford Hill, N., near Stoke Newington Railway Station, on TUESDAY, August 28, at 1 o'clock, without reserve, by order of Mr. W. Chitty, the stock of well-grown GREENHOUSE PLANTS, 1000 FERNS of sorts, 100 White AZALEAS, 1000 CHRYSANTHEMUMS, 2000 IVIES in pots, &c. May be viewed one week prior to the Sale. Catalogues may be had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, London, E.C.; and Leytonstone, E.

Belsfield, Windermere.

IMPORTANT CLEARANCE SALE, by order of the Executors of the late H. W. Schneider, Esq., without reserve.

MESSRS. PROTHEROE and MORRIS will SELL by AUCTION, on the Premises, Belsfield, Bowness-on-Windermere, about 1½ mile from the Windermere Station, on WEDNESDAY and THURSDAY, August 29 and 30, at 12 o'clock precisely each day, the whole of the well-known collection of STOVE and GREENHOUSE PLANTS, including many large and handsome specimens *Crotons*, *Camelias* and *Azaleas*, 100 large *Eucharis* in splendid condition, handsome *Palm* and *Fern*, a few choice *Orchids*, *Fruiting and Succession Pines*, a considerable number of *Table and Decorative Plants*, together with the erections of 4 span-roof Greenhouses and hot-water piping.

May be viewed the day prior to the Sale. Catalogues had of Mr. NICOL, the Head Gardener, on the Premises, and of the Auctioneers and Estate Agents, 67 and 68, Cheapside, London, E.C., and Leytonstone.

N.B.—The very eligible FREEHOLD ESTATE of about 9 acres, with noble Mansion and extensive Stabling, delightfully situated on the borders of the lake, is FOR SALE, with possession.

Wednesday Next, August 29.

SPECIAL SALE of NEW ORCHIDS, consisting of a very grand lot of a new golden-yellow *Orchid*, *CATTLEYA CHRYSOTOXA*, a most superb novelty of great beauty and elegance. A splendid importation of *CATTLEYA SANDERIANA* VARIETY in superb order with fine leaves and dormant eyes among them extra mass. A simply grand lot of the very magnificent *CYPRIPEDIUM CURTISI* growths and leaves, and in finest masses.

Also the lovely new *ONCIDIUM FORSTERMANNI*, a new species carrying great spikes of yellow, chocolate barred and spotted flowers. The sale will include fine growing plants well-established of the new *LÆLIA EYERMANNII*, the rare *ONCIDIUM CURTUM*, and the almost unique *ONCIDIUM BRUNNEOLANUM*, together with a splendid lot of *SOBRALIA XANTHOLEUCA*, the noblest and finest species of the genus. A grand lot of the rare and fine *ORNITHOCEPHALUS GRANDIFLORUS*, and a large importation of *ODONTOGLOSSUM VEXILLARIUM* VARIETY, of which the dried flowers will be shown; and many other rare and fine *Orchids* in splendid condition.

MESSRS. PROTHEROE and MORRIS beg to call special attention to the above which they have received instructions from Mr. F. Sander to SELL by AUCTION at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on WEDNESDAY NEXT, AUGUST 29, at half-past 12 o'clock precisely.

On view morning of Sale and catalogues had.

Kingston-on-Thames.

By order of the Executors of the late Mr. Thomas Jackson. IMPORTANT SALE of VALUABLE FREEHOLD and LEASEHOLD PROPERTIES.

MESSRS. PROTHEROE and MORRIS are favoured with instructions to SELL by AUCTION, at the Mart, Tokenhouse Yard, London, E.C., on THURSDAY, August 30, at 2 o'clock precisely (first in one lot, and if not thus sold, then in separate lots), the VALUABLE FREEHOLD ESTATE known as the Kingston Nursery, Kingston, Surrey, having important building frontages to Fife Road and Clarence Street of 600 feet, and containing an area of about 2 acres, with the whole of the Trade Buildings, comprising 20 Greenhouses, all heated by hot-water piping, Counting-house, Stables, and Sheds. The Goodwill of the old-established Nursery and Seed Business, will be included in this lot; the substantially-built Freehold Detached Residence adjoining, containing 8 Bedrooms, fitted Bath-room, 3 Reception-rooms, Kitchen, and office.

For SALE, with vacant possession, also the desirable FREEHOLD HOUSE, double fronted Shop and Premises, No. 13, Thames Street, Kingston, with Stabling and two Cottages in the rear; together with the several Leasehold Nurseries known as the Kingston Hill Nursery, containing an area of 12 acres 3 rods 10 perches; the Nursery in Park Road, Norbiton, area 10 acres; and the Long Ditton Nursery, Long Ditton, area 15 acres 0 rods 13 perches. The Purchaser or Purchasers will have the option of taking the Stock in the respective lots at a valuation to be made in the usual way; but if not thus taken, the vendors reserve the right of disposing of the same on the Premises by Auction or otherwise.

May be viewed. Particulars, Plan, and Conditions of Sale may be had at the various Nurseries; at the Mart, E.C.; of Mr. W. G. SUDBURY, Estate Agent, Market Place, New Malden; of G. C. SHERRARD, Esq., Solicitor, 26, Lincoln's Inn Fields, W.C.; and Kingston-on-Thames; or of the Auctioneers, Estate Agents, and Surveyors, 67 and 68, Cheapside, London, E.C., and Leytonstone.

Friday Next.

Fine importation of *CATTLEYA TRIANÆ* just to hand in splendid condition; *ODONTOGLOSSUM CRISPUM*, *Pachy* variety, and an assortment of semi-established unfloated ORCHIDS, by order of Mr. G. T. White, of Finchmore Hill.

MESSRS. PROTHEROE and MORRIS will include the above in their SALE by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY NEXT, August 31, at half-past 12 o'clock precisely.

On view morning of Sale, and Catalogues had.

Friday Next.

MESSRS. PROTHEROE and MORRIS are instructed by Messrs. Seeger & Tropp, of Lordship Lane, S.E., to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY NEXT, August 31, at half-past 12 o'clock precisely, a grand importation of *LÆLIA PURPURATA*, nearly all with sound flower-sheaths, the largest specimens having over 200 buds, of which a great quantity are furnished with healthy leaves and 20 flower-sheaths; the beautiful *SOBRALIA LEOCOXANTHA* (true), as figured in the *Orchid Album*, vol. vi, and in the *Journal of Horticulture*, August 8 last; a fine plant of *MAXILLARIA SANDERIANA*, a splendid specimen of *VANDA SANDERIANA*, with 4 strong healthy growths, well established; the rare and beautiful *CYPRIPEDIUM* (C. SEGERIANUM), bulbs; a new hybrid *CYPRIPEDIUM* (C. HARRISIANUM), now offered for the first time; the very rare *ONCIDIUM INCURVUM ALBUM* in bloom, and many other ORCHIDS.

On view morning of Sale, and Catalogues had.

Peterborough.

PRELIMINARY NOTICE.

TWO DAYS' UNRESERVED SALE of the whole of the remarkably well-grown STOVE and GREENHOUSE PLANTS, nearly new Exhibition Plant VAN, NURSERY STOCK, &c., the Freehold Nursery having been disprised of.

MESSRS. PROTHEROE and MORRIS are instructed to SELL the above by AUCTION, on the Premises, The Fastgate Nurseries, Peterborough, on TUESDAY and WEDNESDAY, September 11 and 12. Further particulars will appear next week.

Auction and Estate Offices, 67 and 68, Cheapside, London, E.C.

Edmonton.

ANNUAL TRADE SALE of GREENHOUSE PLANTS.
MESSRS. PROTHEROE and MORRIS are instructed by Mr. H. B. May to SELL by AUCTION, on the Premises, the Dyson's Lane Nursery, Upper Edmonton, on MONDAY, September 17, thousands of GREENHOUSE PLANTS, &c.

Fuller particulars will appear in future advertisements.

The Ascot Nurseries, Berks.

(Opposite the Racecourse, and about 15 minutes' walk from the Railway Station.)

Important to Gentlemen, Nurserymen, and Others, desirous of securing one of the most valuable and celebrated NURSERIES in the Trade, with all the thriving STOCK, as a going concern, in one Lot, for SALE, by order of the owner, who is relinquishing the business in consequence of ill-health.

MESSRS. PROTHEROE and MORRIS are instructed to SELL by AUCTION, at the Mart, Tokenhouse Yard, London, E.C., on FRIDAY, September 7, at 2 o'clock P.M. punctually, in one Lot, the valuable long LEASEHOLD ESTATE distinguished as the ROYAL NURSERIES, ASCOT, together with the Goodwill of the old-established Nursery Business so successfully carried on by the late Mr. John Standish and the present Proprietor. The Nursery contains an area of about 22 Acres, cropped with a General Assortment of Nursery Stock; also 38 Greenhouses, containing a total superficial area of about 44,000 feet, heated by about 10,000 feet of hot-water piping, and numerous Pits all stocked with an extensive collection of Hard and Soft-wooded Greenhouse and Stove Plants. The Leasehold Residence, containing 10 Rooms, 3 well-built Cottages, and suitable Trade Buildings for carrying on a large Business.

May be viewed prior to the Sale. Particulars, Plans, and Conditions of Sale may be obtained on the Premises; at the Mart, E.C.; of Messrs. MACKNELL, MATON, and GODLEE, Solicitors, 21, Cannon Street, E.C.; and of the Auctioneers, Surveyors, and Estate Agents, 67 and 68, Cheapside, London, E.C.

Swanley Junction, Kent.

GREAT UNRESERVED SALE of immense quantities of unusually well grown GREENHOUSE PLANTS.

MESSRS. PROTHEROE and MORRIS are instructed by Mr. P. Ladds to SELL by AUCTION, on the Premises, The Nurseries, Swanley Junction, Kent (adjoining the Swanley Junction Railway Station), on THURSDAY, September 13, at 11 o'clock punctually in consequence of the unusually large number of lots, immense quantities of GREENHOUSE PLANTS, including the following:—

24,000 winter flowering Heaths	2000 <i>Crotons</i>
20,000 <i>Genistas</i>	1000 <i>Palms</i>
6000 <i>Solanums</i>	5000 Zonal <i>Geraniums</i>
12,000 winter-flowering Carnations	Queen of Whites improved
7000 <i>Adiantum Cuneatum</i>	2000 <i>Ferns</i> in variety
10,000 Tea Roses (all best varieties)	300 specimen <i>Gardenias</i>
1000 <i>Clematis Jackmanni</i>	Quantity of small Heaths
	600 White <i>Primulas</i>

Variety of other stock.

The Stock may now be viewed. Catalogues had of Mr. P. LADDS, on the premises, and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

Lee, Kent, S.E.

GREAT ANNUAL TRADE SALE, to commence punctually at 11 o'clock, in consequence of the large number of lots.

MESSRS. PROTHEROE and MORRIS are instructed by Messrs. B. Maller & Son, to SELL by AUCTION, on the Premises, The Burnt Ash Lane Nurseries, Lee, S.E., adjoining the Railway Station, on TUESDAY, September 18, at 11 o'clock punctually, without reserve,

25,000 Winter-blooming HEATHS, beautifully grown, and remarkably well set with bloom buds, including:—

15,000 <i>Erica hyemalis</i>	Alsephilla <i>australis</i> , in 2 and 16-pots
5,000 " <i>gracilis</i>	500 <i>Euphorbia</i> , well grown.
Large quantities of <i>Melanthera ventricosa</i> , <i>perspicua</i> , <i>erecta</i> , <i>Cavendishii</i> , <i>Caffra</i> , and other kinds	<i>Boronia megastigma</i>
15,000 Small <i>E. hyemalis</i> and 5,000 Small <i>E. gracilis</i> , for growing on	Quantity of extra strong <i>Maréchal Niel</i> and other Tea Roses
8,000 <i>Solanum capsicastrum</i> , in berry	4,000 <i>Grevillea robusta</i>
6,000 <i>Bouvardias</i> , single and double	<i>Ficus elastica</i>
2,000 <i>Genistas</i> , very fine	Greenhouse <i>Fassion-flowers</i>
2,000 <i>Adiantum cuneatum</i>	<i>Poinsettias</i>
3,000 <i>Lomaria gibba</i> , true, compact variety, and other Ferns	<i>Ampelopsis Veitchii</i>
	<i>Stephanotis</i>
	<i>Plumbago capensis flore alba</i>
	Large <i>Gardenias</i> for cutting
	500 <i>Clematis Jackmanni</i>

Beautifully Coloured *Crotons*, &c.
May be viewed. Catalogues may be had on the Premises, or of the Auctioneers and Valuers, 67 and 68, Cheapside, E.C., and Leytonstone, E.

N.B.—Messrs. P. & M. desire to call the attention of intending purchasers to the Stock to be offered as above. The Plants are remarkably well grown, fit for immediate Sale, and the whole will be found in an equally good condition as former years.

Lea Bridge Road, Leyton, E.

ANNUAL TRADE SALE of GREENHOUSE PLANTS.

MESSRS. PROTHEROE and MORRIS are instructed by Mr. J. Fraser to SELL by AUCTION, on the Premises, the Lea Bridge Road Nurseries, Leyton, E., on WEDNESDAY, September 19, thousands of GREENHOUSE PLANTS, &c.

Fuller particulars will appear in future Advertisements.

Sidcup.

ANNUAL TRADE SALE of GREENHOUSE PLANTS.

MESSRS. PROTHEROE and MORRIS are instructed by Messrs. Gregory & Evans, to SELL by AUCTION, on the Premises, The Longlands Nursery, Sidcup, on FRIDAY, September 21, thousands of GREENHOUSE PLANTS, &c.

Fuller particulars will appear in future advertisements.

Sales by Auction continued on p. 204.

CATTLEYA CHRYSOTOXA.

ODONTOGLOSSUM VEXILLARIUM, VAR.

ONCIDIUM BRUNLEESIANUM.

CYPRIPEDIUM CURTISI.

ONCIDIUM FORSTERMANNIANUM.

CATTLEYA SANDERIANA, VAR.

LÆLIA EYERMANIANA.

ONCIDIUM CURTUM.

SACCOLABIUM MEASURESIANUM.

ORNITHOCEPHALUS GRANDIFLORUS.

SOBRALIA XANTHOLEUCA.

WEDNESDAY NEXT, at PROTHEROE'S.

Sales by Auction continued.

Enfield Highway. N.

The Brimsdown Nursery, adjoining Brimsdown Station, Great Eastern Railway.

TWENTIETH ANNUAL TRADE SALE.

MESSRS. PROTHOROE AND MORRIS are instructed by Mr. John Maller to **SELL BY AUCTION**, on the Premises, The Brimsdown Nursery, Enfield Highway, N., on **THURSDAY, September 20**, at 11 o'clock precisely, in consequence of the unusually large number of lots, without Reserve, upwards of 1200 lots of remarkably well-grown **STOVE and GREENHOUSE PLANTS**, mostly in 48-pots, and fit for immediate Sale, consisting of:—

15,000 winter-blooming Heaths, including *hyemalis*, *gracilis*, *Caffra*, *Wilmorea*, &c., and extra large *E. Cavendishii*
5,000 *Solanums*, exceptionally well grown
5,000 Ferns, *Adiantums*, *Pteris*, &c.
3,000 Tree Carnations, leading varieties
500 *Epacris*, sorts
5,000 *Bouvardias*
3,000 *Genistas*
1,000 *Geraniums*, Improved Queen of Whites, &c.
1,000 double white *Primulas*
1,000 Stove and Greenhouse Climbers
Dipladenias, of sorts
Allamandas
Bougainvilleas
Stephanotis
Tascanias
1,000 *Passifloras* and *Ampe-lopis Veitchii*
Crotons and *Dreanenas*, beautifully coloured
1,000 *Palms*, *Ficus*, *Grevilleas*, &c.
Large *Azaleas* for cutting

Many thousands of small *Ericas*, *Genistas*, Ferns, &c.; large quantities of *Acacias*, *Gardenias*, *Euphorbia jacquiniiflora*, *Chrysanthemums*, *Poinsettias*, *Euonymus ovatus aureus*, in stores, &c., suitable for the Trade, and other extensive buyers. May be seen any day prior to the Sale. Catalogues may be had on the Premises, or at the Brunswick Nursery, Tottenham; and of the Auctioneers, 67 and 68, Cheapside, London, E.C., and 1, Leytonstone, E.

N.B.—The Auctioneers desire to call the attention of intending purchasers to this **GREAT ANNUAL TRADE SALE**, which has hitherto taken place at the Brunswick Nursery, Tottenham; but, in consequence of the Lease of that Nursery having nearly expired, the Sale this year, and in future, will take place as above, adjoining the Brimsdown Station, G.E.R. The whole of the Stock is in first-rate condition, the *Ericas* being especially well set for flower, and the *Solanums* unusually well berried. There will also be this season a Sale at **THE BRUNSWICK NURSERY**, Tottenham, on **THURSDAY, September 27**, of which a separate Advertisement will appear.

Cheap Bulb Sales.

MESSRS. SMAIL AND CO. will **SELL BY AUCTION**, at 123, Fenchurch Street, City, E.C., on **TUESDAY, THURSDAY, and SATURDAY NEXT, August 28, 30, and September 1**, at 12 o'clock each day, large Consignments of First-class **HYACINTHS, TULIPS, CROCUS**, and other **DUTCH BULBS**, specially lotted to suit all Buyers.

Addresses of intending Purchasers Booked for Catalogues of these Weekly Sales.

To Nurserymen, Florists, and Others.

MESSRS. SEARLE, HALTON, and BOWYER, will **SELL BY AUCTION**, upon the Premises, Town Road Nursery, Edmonton, on **THURSDAY, August 30, 1888**, at 2 o'clock precisely, in 250 Lots, without reserve—the Lease, 12 years unexpired, at the low rent of £25—comprising good **DWELLING-HOUSE, STABLES, and COACH-HOUSE**, and 1 Acre of **GROUND**; also the erection of 14 Greenhouses, with their Boilers, Piping, Brickwork, Doors, Staging, Sash-bars, and other Joiner's work, and 21-oz. Glazing, Potting-loam, Flower-pots, Pit-lights, Heavy and Light Spring Carts, Covered Van, Set of Harness, 4000 Maidenhair Ferns, 600 Ivy Plants, small crop of Wurzel, &c.

On view morning of Sale. Catalogue of the Auctioneers, Tottenham.

WANTED TO RENT, an Acre or Two of **LAND**, with 300 or 400 feet of Glass and Dwelling-House.

FLORIST, *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

To Grape, Fruit, Tomato Growers, Market GARDENERS, &c.

TO BE DISPOSED OF, an Old-established **BUSINESS** in the Channel Islands, in full Work. Apply in the first instance by letter, addressed to **A. R. C. H.**, Bedford Villa, Teddington. Principals only treated with.

To Gardeners and Florists.

TO BE SOLD, 5 Acres of **FREEHOLD LAND**, for erection of Glass-houses or for Gardening purposes; also some Smaller Allotments. Payment by instalments, if required.

Particulars of **BENINGFIELD and TIDY**, Ware, Herts; 16, Union Court, Old Broad Street, London, E.C.

FOR SALE, or to be **LET**, a **NURSERY**, 2 Acres of Ground, several Glasshouses, and a comfortable little House. Between Putney and Wandsworth. Agent, Mr. **FRED. W. GLAZIER**, 1, Park Side, Hyde Park Corner, W.

TO BE LET, a compact **NURSERY**. 9000 feet of Glasshouses, recently erected and thoroughly heated, together with Dwelling-house, Stables, Outbuildings, and Retail Shop. The whole centrally situated in fashionable watering place. Goodwill low. Part or whole stock at valuation.

A. E., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

To Nurserymen, Florists, and Others.

TO BE LET, in Plots, splendid **LAND**, near North London Station, Great Eastern Railway, close to old main thoroughfare. Three Greenhouses and Dwelling House would be erected for suitable tenants. Moderate rent.

Apply to Mr. **ALFRED RICHARDS**, Estate Agent, Tottenham.

Sandy, Bedfordshire.

About 10 minutes' walk of the Great Northern and London and North-Western Railways.

TO BE LET, with immediate possession, a small **DWELLING-HOUSE** with Yard, Stabling, Onion Loft, a span-roof Greenhouse or Vinery, 30 feet by 15 feet; Lean-to Pits adjoining, 35 feet by 6 feet; Lean-to Glasshouse, 15 ft. by 9 ft. 6 in.; span-roof Pits adjoining, 33 feet by 9 feet, with Nursery Ground. Total area, 2 roods 20 perches. For further particulars, apply to Mr. **GEORGE JACKSON**, Auctioneer, Hitchin, Herts.

TO LET, at Syston, from November next, 4 Acres of **GARDEN**, planted with Fruit Trees; five Greenhouses fitted with Hot-water; Grass Field, and good House and Buildings.

Apply to **R. BEVAN**, White Swan, Syston, Leicester.

TO BE LET, an old-established **MARKET NURSERY**, well stocked, at a valuation; about 1 acre. Rent moderate. Or **PARTNER** accepted. **R. E.**, 28, Colenso Road, Clapton Park, E.

NATIONAL CHRYSANTHEMUM SOCIETY.

ROYAL AQUARIUM, WESTMINSTER.—Early **CHRYSANTHEMUM and DAHLIA EXHIBITION, SEPTEMBER 12 and 13**. Schedules free on application. The Floral Committee will meet September 12, October 10, 24; November 7, 21; December 5, and January 9.

WILLIAM HOLMES, Hon. Sec., Frampton Park Nurseries, Hackney, E.
PLEASE NOTE.—Intending Members should join at once, and so secure the full advantages for the current season—viz., admission to 4 Grand Exhibitions, 7 Floral Meetings, and the usual privileges. Ordinary Member, 5 s., and Fellows, 21s. per annum.

ORCHIDS.

THE LIVERPOOL HORTICULTURAL CO.

(**JOHN COWAN**), Limited,

Wish to call the attention of all lovers of

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TO THEIR

NEW ILLUSTRATED AND DESCRIPTIVE

CATALOGUE

Which will be sent Post-free on application.

THE VINEYARD AND NURSERIES, GARSTON, near LIVERPOOL.

CREEPERS FOR WALLS.—By planting what is suitable, an ugly object may easily be made beautiful. Most being in pots, can be sent and put out at any time. Descriptive LIST and advice Free.—**RICHARD SMITH and CO.**, Nurserymen and Seed Merchants, Worcester.

Kent—The Garden of England.

STRAWBERRIES true to Name.

GEO. BUNYARD and CO.'S New LIST, embracing, Noble, Waterloo, &c., and the 30 best kinds, may now be had on application. Splendid Plants in little pots, and Runners. The Old Nurseries, Maidstone.

FERNS!—FERNS!—FERNS!

Look at the price To the Trade.—*Pteris tremula*, 9 inches high, 12s. and 14s. per 100; small do., 10s.; *P. magnifica cristata*, 10s. and 12s. per 100; *P. cretica*, 10s. per 100; *P. cretica albo lineata*, 10s. per 100. All good stuff, in small 60's, Cash with order. Free on rail. **J. E. SMITH**, Fern Nurseries, 140, Loughborough Road, Brixton, S.W.

FOR SALE, a fine, perfectly matched Pair of **VAREGATED AMERICAN ALOES** in nearly new 22-inch boxes; one **ALSOPILOA AUSTRALIS**, stem about 3 feet, clean and healthy. **CHARLES POCKOCK**, The Nurseries, Wincanton.

SPECIAL OFFER OF FERNS.—*Pteris tremula*, *P. cretica*, *P. cretica cristata*, *P. serrulata cristata compacta*.—**CINERARIAS and PRIMULAS** in best Covent Garden strains. All in thumbs, fit for immediate potting. Also *Pteris tremula*, good stuff, in 48's, to offer in quantity. Prices per 100 or 1000 on application.

R. FENGELLY.

Dyson's Lane, Upper Edmonton.

NOW IN FULL BLOOM.—BEGONIAS.

Awarded Four Gold Medals; unequalled as a floral display. Visitors are cordially invited; free admission. Frequent trains from the City and from the West End to Catford Bridge and Forest Hill Stations.

JOHN LAING and SONS, Stanstead Park, Forest Hill, S.E.

CARTERS' EARLY BULBS,

To produce beautiful White and Coloured Flowers for Christmas and Easter Decoration.

	PRICE
	Per 100 p. doz.
	s. d. s. d.
White Roman Hyacinths	17 6 2 6
The Largest Bulbs of the Year	
Double Roman Narcissus	10 6 1 6
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Crocus, large white, yellow, and purple	2 6 0 6
The Easter Lily	
The White Easter Lily. We hold the entire stock of the largest cultivator of this lovely Lily.	Each 1 0 10 6
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Detailed CATALOGUE Gratis and Post-free.

All Parcels Carriage Free.

Royal Seedsmen by Sealed Warrants,

237 & 238, HIGH HOLBORN, LONDON.

SEEDLING PLANTS OF CHOICE FLORISTS' FLOWERS.

WE HAVE MUCH PLEASURE in offering the following in strong, healthy, transplanted young stuff, from our superb strains of Choice Florists' Flowers. **Free and Safe by Post at Prices quoted.**

	Per dozen.—s. d.
AURICULAS, Alpine, very choice, strong young plants, for blooming next season	2 6
CALCEOLARIAS, herbaceous, splendid strain of beautifully spotted and tigned flowers	2 6
CARNATIONS and PICOTEEs, from choice named flowers	per 100, 10s. 6d. 1 6
CARNATIONS, yellow ground varieties	3 6
CINERARIA hybrida, from a grand strain, per 100, 10s. 6d.	1 6
large flowered, dwarf, very fine, per 100, 17s. 6d.	2 6
HOLLYHOCKS, Chater's superb double, per 100, 16s.	2 6
Chater's superb double, extra strong plants	3 6
PRIMULA sinensis, choicest red or white, per 100, 10s. 6d.	1 6
sinensis, splendid mixed, including nearly 20 superb varieties	per 100, 10s. 6d. 1 6
sinensis, splendid mixed, extra strong plants	per 100, 16s. 2 6
sinensis alba magnifica, splendid pure white	3 6
sinensis, Crimson King, magnificent colour	3 6
sinensis, Fern-leaved, choice mixed, per 100, 10s. 6d.	1 6
sinensis, double-flowered, mixed, limited quantity,	6 for 2s. 3 6
PRIMULAS, double, pure white, splendid for furnishing an abundance of cut bloom throughout the autumn and winter. Well rooted strong young plants from 3-inch pots, per 100, 45s.; per dozen, 6s.; 3 for 1s. 9d.	

DANIELS BROS., TOWN CLOSE NURSERIES, NORWICH.

"ONLY THE BEST."

CHEAP BULBS FOR FORCING, &c.

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ROMAN HYACINTHS	15 0
DOUBLE ROMAN NARCISSUS	8 0
PAPER WHITE NARCISSUS	7 0
VAN THOL TULIPS	4 6
SECOND-SIZE NAMED HYACINTHS for forcing, our own selection, assorted colours	21 0
UNNAMED HYACINTHS for bedding	14 6
15 per cent. discount, cash with order. Carriage paid. NAMED HYACINTHS, best quality, equally cheap.	

GARAWAY CO., DURDHAM DOWN, CLIFTON, BRISTOL.

B. MALLER and SONS beg to offer to the Trade a very extensive and unusually well-grown stock of *ERICAS* (*Hyemalis* and other varieties), *EPACRIS*, *SOLANUMS*, *GENISTAS*, *CYCLAMEN*, *BOUARDIAS*, *ADIANTUM CUNEATUM*, and other *FERNS*; *GARDENIAS*, *STEPHANOTIS*, *BORONIA MEGASTIGMA*, *FICUS ELASTICA*, *CROTONS*, *GREVILLEAS*, *Tea ROSES*, &c.

An inspection invited.

Trade CATALOGUES forwarded on application.

The **ANNUAL SALE BY AUCTION** will be held on **TUESDAY, September 18**.

Burnt Ash Lane Nurseries, Lee, S.E.

NOTICE

TO THE

HORTICULTURAL TRADE.

HAVING for some years past, owing to the particular nature of my business as a Horticultural Agent, recognised to the fullest extent the absolute importance of securing speedy transit and quick delivery, in the case of all plants sent from the Continent to England and *vice versa*; and having myself suffered great inconvenience, annoyance, and loss from causes which could easily have been avoided, had the shippers entrusted with plants possessed any practical knowledge of their nature and requirements, I beg to inform you that, my business with the Continent having become so extensive, I am now obliged, in self defence, to take up the business of a

SHIPPING AND FORWARDING AGENT.

I am so well aware of the serious consequences of a few hours frost in the case of plants left on the wharf for a night—as frequently happens—and which by a little care in warehousing can be easily avoided, to the great benefit of sender and buyer, that I have determined in future to give all such details my closest personal attention, and beg you to recognise the advantages which will thus be gained by your shipping all your consignments to this country through me.

I have secured admirable premises for this branch of my business at 12, Cooper's Row, Crutched Friars, London, E.C., and with the available accommodation at the various wharves for the proper and prompt warehousing of the most tender plants, am in a position to assure you that I possess every facility for conducting the business in a manner that I am sure will give satisfaction to those who may favour me with their patronage and support.

WILLIAM DENMAN,

7, Catherine Street, Covent Garden,
London, W.C.

The Business will be carried on under the style of

DENMAN & CO.,

HORTICULTURAL, SHIPPING, AND
FORWARDING AGENTS,

12, COOPER'S ROW, CRUTCHED FRIARS,

LONDON, E.C.

TELEGRAMS—OLEKMA, LONDON.

SUTTON'S BULB CATALOGUE

NOW READY.

SUTTON'S BULBS GENUINE ONLY DIRECT FROM SUTTON & SON'S, READING.

As a Supplement
TO THE
GARDENERS' CHRONICLE
FOR
Next Week, September 1,
WILL BE
Published an Ink Photograph
OF
SPRING GARDENING
AT FELIXSTOWE.



THE

Gardeners' Chronicle.

SATURDAY, AUGUST 25, 1888.

THE BOARD OF AGRICULTURE.

THE *Times* of the 21st inst. published the text of the Ministerial Bill for establishing a Board of Agriculture, which was read a first time just before Parliament adjourned. Our great concern in this Bill is due to the fact that in this Act "the expression 'agriculture' includes horticulture and forestry." This recognition of the importance of horticulture as a national industry is, we believe, due to the well-timed interposition of the Royal Horticultural Society, through its President, Sir Trevor Lawrence. In any case, an excellent opportunity is now offered for the Society to follow up the matter, and bring home to the public and the Government the fact, that horticulture has claims on their estimation comparable only with those of agriculture itself. Moreover, that the prosperity of agriculture in the future depends, so far as the rearing of crops is concerned, on the inculcation of the scientific principles, and on the adoption of the practical methods which render horticulture a progressive art, able to confront new conditions as they arise. Horticulturists can benefit the State very materially, and although the State of itself, unsupported by public opinion, can do little good, and may do harm, yet it is certain that if practically worked, and not fettered and cramped with officialism and red tape, the Board of Agriculture may stimulate and encourage progress. But the first thing is to get the public to look on horticulture as something more than recreation—something beyond a means of supplying the luxuries of the rich. Our readers do not need to be told that horticulture is beneficial in other ways than those named, and they will not dissent from our statement that our power for good is incalculable. To enable us to do this we require a wider general scheme of instruction in the principles and in the technicalities of our art; we stand in need of laboratories and experimental gardens; we want competent instructors to visit our villages and gardens; we demand a much more comprehensive sense of duty and a more active propaganda on the

part of our horticultural societies; but we need say no more on these heads at present. It must suffice now to cite those portions of the proposed Bill which are of main import, and to solicit the comments of our readers, so that, when the time comes, the Bill may be amended in those parts where amendment is desirable:—

"1.—(1). There shall be established a Board of Agriculture consisting of the Lord President of the Council, Her Majesty's principal Secretaries of State, the First Commissioner of Her Majesty's Treasury, the Chancellor of Her Majesty's Exchequer, the Chancellor of the Duchy of Lancaster, and the Secretary for Scotland. It shall be lawful for Her Majesty the Queen from time to time to appoint any member of the Privy Council to be President of the Board during Her Majesty's pleasure, and if he is not one of the above officers of State he shall be a member of the Board.

"2.—(1) There shall be transferred to the Board of Agriculture—(a) The powers and duties of the Privy Council under the Acts mentioned in Part I. of the first schedule to this Act; (b) the powers and duties of the Land Commissioners for England under the Acts mentioned in Part II. of the first schedule to this Act, or under any other Act; (c) all powers and duties vested in the Commissioners of Her Majesty's Works and Public Buildings under the Survey Act, 1870.

"(2) The Board of Agriculture shall also undertake the collection and preparation of statistics relating to agriculture, the inspection of, and reporting on, any schools which are not public elementary schools, and in which technical instruction, practical or scientific, is given in any matter connected with agriculture, and in aiding any school which admits such inspection, and in the judgment of the Board is qualified to receive such aid.

"(3) The Board of Agriculture may also make, or aid in making, such inquiries and experiments, and collect or aid in collecting such information as they may think important for the purpose of promoting the advancement of agriculture.

"3. It shall be lawful for Her Majesty the Queen in council from time to time by order to transfer to the Board of Agriculture such powers and duties of any Government department as are conferred by or in pursuance of any statute, and appear to Her Majesty to relate to agriculture, and to be of an administrative character.

"(2) There shall be paid out of money provided by Parliament to the President, if not one of the officers of State above mentioned, or any other officer of State receiving a salary, the annual salary of £2000 a year, and to the secretary, officers, and servants of the Board such salaries or remuneration as the Treasury may from time to time determine.

"(3) All expenses incurred by the Board of Agriculture in the execution of their duties under this Act, to such amount as may be sanctioned by the Treasury, shall be paid out of money provided by Parliament.

"7.—(1) The office of President of the Board of Agriculture shall not render the person holding the same incapable of being elected to or sitting or voting as a member of the Commons House of Parliament, and shall be deemed to be an office included in schedule H of the Representation of the People Act, 1867, schedule H of the Representation of the People (Scotland) Act, 1868, and schedule E of the Representation of the People (Ireland) Act, 1868.

"8.—(1) There shall be transferred and attached to the Board of Agriculture such of the persons employed under the Privy Council or any other Government department, in or about the execution of the powers and duties by this Act transferred to the Board of Agriculture, as the Privy Council, or Government department, with the sanction of the Treasury, determine.

"(2) There shall be transferred and attached to the Board of Agriculture all persons employed under the Land Commissioners for England.

"(3) The Board of Agriculture may by order from time to time distribute the business of the Board among the several persons transferred thereto in pursuance of this Act in such manner as the Board may think right, and those officers shall perform such duties in relation to that business as may be directed by the order.

"Provided that such persons shall, while they continue in office, be in no worse position as respects

their tenure of office, salaries, or superannuation allowances, than they would have been in if this Act had not passed.

"(4) In the event of a transfer of any powers or duties to the Board of Agriculture being made by Order in Council in pursuance of this Act, such order shall extend this section to the persons employed in or about the execution of the powers and duties so transferred, but nevertheless with such modifications as to Her Majesty in Council seem necessary.

"9. After the establishment of the Board of Agriculture no person shall be appointed to the Office of Land Commissioner for England.

"Provided that any person who holds office as Land Commissioner at the passing of this Act may be assigned such position in or under the Board of Agriculture as the Board may appoint, so that he is not placed in any worse position as respects his tenure of office, salary, or superannuation allowance than he would have been in if this Act had not passed.

"11. In this Act the expression 'agriculture' includes horticulture and forestry.

"13. This Act may be cited as the Board of Agriculture Act, 1888.

"FIRST SCHEDULE.

"Part I.—Acts relating to Powers and Duties of the Privy Council transferred to Board of Agriculture.

—40 and 41 Vict. c. 68, the Destructive Insects Act, 1877; 41 and 42 Vict. c. 74, the Contagious Diseases (Animals) Act, 1878; 47 & 48 Vict. c. 13, the Contagious Diseases (Animals) Act, 1884; 47 and 48 Vict. c. 47, the Contagious Diseases (Animals) Transfer of Parts of Districts Act, 1884; 49 and 50 Vict. c. 32, the Contagious Diseases (Animals) Act, 1886.

"Copyhold Acts.—4 and 5 Vict. c. 35, the Copyhold Act, 1841; 6 and 7 Vict. c. 23, the Copyhold Act, 1843; 7 and 8 Vict. c. 55, the Copyhold Act, 1844; 15 and 16 Vict. c. 51, the Copyhold Act, 1852; 21 and 22 Vict. c. 94, the Copyhold Act, 1858; 31 and 32 Vict. c. 89, an Act to alter certain provisions in the Acts for the commutation of tithes, the Copyhold Acts, and the Acts for the inclosure, exchange, and improvement of land; and to make provision towards defraying the expenses of the Copyhold, Inclosure, and Tithe Office; 50 and 51 Vict. c. 73, the Copyhold Act, 1887.

"Metropolitan Commons.—29 and 30 Vict. c. 122, the Metropolitan Commons Act, 1866; 32 and 33 Vict. c. 107, the Metropolitan Commons Amendment Act, 1869; 41 and 42 Vict. c. 71, the Metropolitan Commons Act, 1878; 45 and 46 Vict. c. 15, the Commonable Rights Compensation Act, 1882.

"Other Duties.—14 and 15 Vict. c. 53, the Inclosure Commissioners Act, 1851; 15 and 16 Vict. c. 62, an Act to alter and amend certain Acts relating to the woods, forests, and land revenues of the Crown; 29 and 30 Vict. c. 70, an Act to extend the provisions of the Acts for the inclosure, exchange, and improvement of land to certain portions of the Forest of Dean called Walmore Common and the Bearce Common, and for authorising allotments in lieu of the forestal rights of Her Majesty in and over such commons; the Poor Allotments Management Act, 1873; 44 and 45 Vict. c. 41, the Conveyancing and Law Property Act, 1881; 45 and 46 Vict. c. 15, the Commonable Rights Compensation Act, 1882; 45 and 46 Vict. c. 38, the Settled Land Act, 1882; 46 and 47 Vict. c. 61, the Agricultural Holdings (England) Act, 1883; 47 and 48 Vict. c. 67, the Improvement of Lands (Ecclesiastical Benefices) Act, 1884.

"SECOND SCHEDULE.

"Enactments Repealed.—6 and 7 Will. IV., c. 71, an Act for the Commutation of Tithes in England and Wales, section 2; 4 and 5 Vict. c. 35, the Copyhold Act, 1841, sections 1, 2, 4, 5, 7, 8, and 9; 8 and 9 Vict. c. 118, the Inclosure Act, 1845, sections 2, 6, and 8; 14 and 15 Vict. c. 53, the Inclosure Commissioners Act, 1851, the whole Act, except section 9; 25 and 26 Vict. c. 73, an Act for continuing the Copyhold Inclosure and Tithe Commission, and entitling the Commissioners to Superannuation Allowance, the whole Act so far as unrepealed; 40 and 41 Vict. c. 68, the Destructive Insects Act, 1877, section 6; 41 and 42 Vict. c. 74, the Contagious Diseases (Animals) Act, 1878, subsection 2 of section 8, and subsection 6 of section 58; 45 and 46 Vict. c. 38, the Settled Land Act, 1882, section 48 down to 'may require of the three several bodies of Commissioners aforesaid,' being the end of subsection 5 inclusive."

NEW OR NOTEWORTHY PLANTS.

SACCOLABIUM CERINUM, n. sp.*

This was exhibited at the last Ghent show. Though it is no fashionable Orchid it attracted a good deal of interest, as the rather dark ligulate bilobed leaves and the porrect inflorescence of numerous ascending waxy flowers, orange, with an apricot colour spur, excited the curiosity, and numerous visitors were not quite sure, *cujus generis*, the curiosity might be. It is a Sondaic introduction made by Mr. F. Sander. It was exhibited by Mr. James Bray, Rue Courte des Pierres, Gand. *H. G. Rehb. f.*

BOLLEA HEMIXANTHA, n. sp.†

This is very near Bollea Lalindei. It has a similar large flower. Colour quite distinct. Sepals and petals white. Lip yellow, with thirteen parallel darker yellow keels forming a mighty crest and numerous small warts and styloid processes at the base. This is quite a novel and peculiar feature of the plant. The white column is much dilated at the base, with yellow basilar angles, the yellow base being covered with minute dark red spots. It was kindly forwarded me by Mr. F. Sander, who had it from New Grenada (United States of Columbia, if you like it better). *H. G. Rehb. f.*

ROSES.

NEW ROSES IN 1888.

ONE of the great disappointments connected with this very abnormal season has been that an opportunity has been missed of seeing, as we had hoped to do, the new and semi-new Roses in larger quantities than we have done. By new Roses I mean those which have only recently been put into commerce; and by semi-new those which have been in the market for a year or two. It was the more disappointing, as several of these claimants for favour are from new sources, and we all looked forward, in the case of some of them, to see them largely exhibited by their raisers; but this was not to be—the lateness of the season, and its stormy, rainy character hindered that, and many of them were only sparingly exhibited. I was, however, enabled to grow many of these in my own garden, and thus to notice their character—which is, after all, the most satisfactory plan, as one can compare wood, foliage, and habit of growth with those Roses which are supposed to bear some likeness to them.

There are two of our home-raised Roses which have established themselves in the opinion of all who have seen them as first-rate novelties—Sir Rowland Hill and Earl of Dufferin—and these I must note first.

Sir Rowland Hill, raised by Mack & Son, of Catterick — was exhibited by them at Edinburgh, where it obtained the Gold Medal of the National Rose Society, and also the unanimous approval of all Rose growers who saw it, as a first-class novelty — has, if possible, risen in estimation. It is a Rose of a most beautiful and novel

* *Saccolabium cerinum*, n. sp. — Aff. *Saccolabio compresso* Lindl. Caulis validus brevis; foliis ligulatis obtuse bilobis; pedunculo porrecto bibrachiatum, apice flexuoso; racemis densifloribus ascenduntibus; bracteis linearibus acutis ovaria pedicellata subaequantibus; sepalis oblongis; lateralibus nunc subcurvatis; tepalis ovatis per lineam mediam incrassatis; labello calceolari excavato tridentato; dentibus lateralibus retusis acinaculatis, dente medio convexo apiculato; calcaris compresso cylindrico obtuso ovarium pedicellatum subaequantem; anthera rostrata, vertice apiculata; caudicula geniculata. Ex Sonda insulis imp. *H. G. Rehb. f.*

† *Bollea hemixantha*, n. sp. — Aff. *Bollea Lalindei*, Rehb. f.; labello imo basi ante unguem callis parvis numerosis styloideis seu verruciformibus obsito, carinis contiguis lamellosis dorso obtusiusculis ad 13. lamina a basi cordata triangulari, inverse replicata seccato; columna apice angustiori infra multum dilatata, basi leviter. Sepala ac tepala albidula. Labello flavum carinis obscurioribus. Columna alba, basi utrinque ac infra cum ungue flava punctis numerosis in basi—Zygopetalum hemixanthum. Ex nov. Grana, et imp. exc. Sander. *H. G. Rehb. f.*

colour—a deep claret, flushed with bright scarlet, recalling to some persons' minds an old Rose, Lacharme's Souvenir de Dr. Jamain, but the colour is far beyond that, while in size and substance of petal it is superior, being stout and well formed. When dying off it becomes almost black, and like all Roses of these dark colours requires protection from the sun's rays (when they do shine!). The plant is of vigorous growth, and altogether it is a very great gain both to Rose growers and Rose exhibitors.

Earl of Dufferin.—This Irish Rose, raised by Messrs. A. Dickson & Son, of Newtownards, Co. Down, is a most beautiful high-coloured Rose, of strong constitution and vigorous habit; the flowers are of a brilliant rich crimson colour, with a high pointed centre, the outer petals somewhat recurving, and the brilliant tints of brownish-crimson are seen to great advantage. Last year a good deal of criticism was evoked by a statement in the *Gardeners' Chronicle*, from Scotland, that it was identical with Prosper Langier. This was indignantly denied, and the denial was correct; the two Roses are perfectly distinct, and although the French Rose is a good one, it is not to be compared for a moment with Earl of Dufferin either in the colour or shape of the flower; others have called it a dark Maurice Bernhardt, and others a better Pierre Notting; but I think we may safely say that it is a perfectly distinct Rose, of very superior qualities, likely to be a universal favourite, and to reflect great credit on its raiser.

Lady Helen Stewart, by the same raiser, is a flower that, had it not been for the preceding Rose being sent out at the same time, would have, perhaps, attracted more attention. It is a very bright red Rose, of good habit, and very free flowering; it has not often been exhibited, but I was pleased with it in my own garden.

Duchess of Leeds (Mack & Son).—A very pretty Rose, which may be described as a pink La France, with a dash of Marie Finger in it. I question if it will be an exhibition Rose, as it lacks size; but as a garden Rose allowed to grow at will, it will be most valuable, especially for cutting. Sprays of it will do very well for baskets of Roses, as its exceedingly bright and lively colour will lighten up other flowers.

Mrs. John Laing.—One of Mr. Bennett's seedlings. The colour is a beautiful soft pink. The flower is large in size and good in form, very free, and a good autumnal bloomer. Although full it is not so liable to spoil as Her Majesty, and has been on several occasions shown well and attracted much attention. The award of the National Rose Society's Gold Medal when it was exhibited as a seedling seems to have been fully justified.

Madame Joseph Desbois.—This Rose was sent out as a hybrid Tea—a fashion which the French raisers seem to have adopted; if they do it with the idea that a Rose so described is likely to find more favour with us, I think they are grievously mistaken. As a rule, such Roses are regarded with suspicion.

Grand Mogul.—I have not seen more than one or two blooms of this Rose exhibited; those that I saw were good in form, brilliant crimson shaded with dark maroon-crimson. As I have not grown it myself I can only say that, as I saw it, it was a brilliant Rose; those who have grown it tell me that in growth and bloom it bears a strong resemblance to Jean Soupert, both in growth and flower.

Miss Ethel Brownlow.—A Tea Rose raised by Messrs. Dickson & Son, the raisers of Earl of Dufferin; very distinct in colour, salmon-pink, shaded with yellow at the base of the petals, the centre high, and outer petals somewhat reflexed. Of vigorous growth, likely to be an acquisition owing to its distinct character.

Luciole.—A Tea Rose raised by J. Guillot, and one that will apparently uphold his good reputation as a raiser. The bud is long and pointed—the true Tea bud; the colour a bright carmine-red, but with some of those extraordinary combinations of colours which make the Tea Roses so ravissante—fawn, copper colour, bronzy-red, are all mixed together, or rather placed to-

gether in the flower without being mixed, blending with one another, and constituting a strikingly beautiful flower.

Lady Alice.—This is a sport from the well known Lady Mary Fitzwilliam, and at times distinct from it; the colour is creamy-white with a faint yellowish tint at the base; in cooler weather it has more colour.

Looking a little further back we come to some Roses which have been well shown this year or from some other cause are worthy of more extended cultivation.

Gloire Lyonnaise.—It was unfortunate that this Rose should have been brought out as a yellow hybrid perpetual; this it certainly is not—it is a white Rose with a very faint suspicion of primrose at the base of the flower, and as a garden Rose will be, I think, much appreciated. It is one of those light Roses which will stand a good deal of rain without being damaged by it, and for such a purpose it may be safely recommended. It is evidently a perpetual, with a good dash of Tea blood in it.

Victor Hugo.—This has established itself as a very fine dark Rose, bright crimson-red, shaded with darker colour, perhaps in ordinary seasons it may not be so dark as during the past cold season, when such Roses as Prince Arthur and General Jacqueminot came out in colours that made them hardly recognisable.

Marshall P. Wilder.—To all intents and purposes this is a reproduction of Alfred Colomb, whether obtained as a seedling or from a vigorous shoot I do not know. When shown this year, attempts were made by some to show its difference from the older flower, but I believe the general opinion is that it must be bracketed with Alfred Colomb.

American Beauty.—Notwithstanding the somewhat effusive praises bestowed in some of the catalogues on this flower, it was nowhere to be seen this year, and it was generally considered to be but a synonym for Madame Ferdinand Jamain, a Rose sent out by Ledechaux more than ten years ago, and of so indifferent a character that it never found a place in our catalogues.

Lord Bacon.—This has been well exhibited this year, and is one of those deep crimson Roses which are ever acceptable; it is shaded with scarlet, and is a very beautiful flower.

Madame Sussane Rodocnachi.—An exceedingly pretty Rose, with light silvery-white shading; very distinct, and has been done well even in this wet season.

Comtesse de Fregneuse.—A very pretty Tea-scented Rose, bright primrose-yellow; very free flowering and good.

Souvenir de Gabriel Drevet.—Silver-white with bright rose centre, and oftentimes a mixture of colours hard to describe; it is of good size, and a valuable addition to our lists.

Pride of Reigate.—In my opinion simply an abomination. One might as well admire a fair face pitted with small-pox as this spotted thing, which neither on the exhibition table nor in the garden can do anything but spoil its surroundings.

Viscountess Folkestone is an exceedingly pretty hybrid Tea, of bright and pleasing colour; it is very free flowering, and for its beauty we may forgive its hybrid character; but still not admit it amongst pure Tea Roses.

Such are the flowers which have come across my line of vision this year; it shows that, after all—I, the great number of new Roses is no indication of worth, and that every year a quantity of rubbish is brought forward which might have been passable a few years ago, but is now useless; and, 2ndly, that notwithstanding the great perfection to which the Rose has been brought there are still prizes to be gained by raisers of seedlings, and the encouragement which has been given to our home-raised flowers will, I hope, enable them to show that they do not do these things better in France.

NEW ROSE, LADY CASTLEREAGH.

A week or two since I received from Messrs. Alexander Dickson & Sons, of Newtownards, Co.

Down, Ireland, some blooms of a new Tea-scented Rose, which I think is likely to prove a useful addition to this beautiful class, as their Miss Ethel Brownlow has already done. It is a well-shaped flower, and evidently both vigorous in growth and profuse in its blooming; the colour is very pale pink or white, with salmon-pink in the centre. It is not quite like any Rose in this class.

It is pleasant to be able to record that our Irish friends are not behindhand, and that two, at any rate, of their first batch of Roses—Earl of Dufferin and Miss Ethel Brownlow—have grown in the estimation of the Rose world. *Wild Rose.*

THE CHEMISTRY OF VEGETATION, IN REFERENCE TO THE GROWTH OF THE POTATO.

(Continued from p. 185.)

AVOGADRO—MOLECULES.—The paper of Gay-Lussac mentioned above (on the combination of gases, 1809) attracted the attention of an Italian physicist, Avogadro. A paper which he wrote in comment appeared in 1811.* It is referred to here because it contains the suggestion that there must be two kinds of molecules (he uses this word as Dalton had used particles and afterwards atoms). He speaks of compound molecules and elementary molecules. His paper is a much more weighty matter than a question of nomenclature. But from that time the introduction of the word "molecule" into the atomic theory has led to much confusion—nay, even acrimony and ridicule. Chemists and physicists have used the words with different significance, and, like the two stalwart knights of yore, who each saw only one side of the suspended shield, while ever ready for doughty deeds, they have belaboured one another with wordy fight. It seems at last to be generally admitted among chemists, whatever physicists may please to do, that the word atom shall be used for a single atom, and molecule for a group (two or more) of atoms held together by that unknown "affinity."

There are many difficulties, as especially in what is called dissociation, and the fight cannot be said to be over. To give a rigid definition of a molecule would be rash. But the way in which, among chemists, the word is now used may be illustrated.

Two atoms of H and one of O



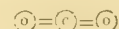
unite and form one molecule of water



To carry out Roscoe's illustration of a mazy dance an atom of H has but one hand (or one quantivalence). It is called a monad.† O is called a dyad—it is divalent—to carry out the illustration it has "two hands," and can take a partner in each hand. Linked together they make one molecule of water. Or again, one atom of C can unite with one or with two atoms of O. C is "four-handed," a tetrad. It can form a molecule of carbon monoxide



—where two "hands" of the C are left free: or a molecule of carbon dioxide with two atoms of O



This dioxide is called commonly carbonic acid.‡

The combining weight of a molecule is the sum

* Essai d'une manière de déterminer les masses relatives des molécules élémentaires des corps et les proportions selon lesquelles elles entrent dans ces combinaisons. *Journ. de Physique*, lxxiii., 1811.

† μονος, monos, one, δυο, duo, two, τρεις, three, τετρας, tetras, four.

‡ Each stroke against the circles represents the "valency" of the element concerned. Whatever may be thought as to whether it was or was not a good word to adopt, it is to no purpose to discuss here. Experiments have led to the conclusion that a form of force or forces, expressed by the word molecule, actually exists in Nature.

of the atomic weight of all the atoms in it. Thus carbon dioxide molecule has twice 16 for O, that is 32, and one 12 for C. That makes 44.

GAY-LUSSAC AND BERZELIUS.

It is to Gay-Lussac, already mentioned, that we have to turn for the earliest successful attempts to bring chemistry to bear on elucidating the composition of plants. In conjunction with Thénard, on January 15, 1810, he communicated a paper* to the Institute on the analysis of fixed organic compounds. Their method was to get the carbon to unite with oxygen in the form of carbonic acid; the hydrogen to unite with oxygen to form water. Their difficulty was to find a means of collecting the results and to find a suitable agent to supply the oxygen. They collected over a mercury trough, and for a supply of oxygen they employed "muriate suroxygéné de potasse," which we now call potassium chlorate (some call it chlorate of potass). All the chlorates readily give up oxygen on heating, and potassium chlorate is a very convenient form. They had to devise their apparatus, of which they appear not a little proud, as they speak of the especial merit of the tap they invented. With this they analysed sugar, gum, starch, &c. The paper is one of interest, for to the present day the carbon in analyses is estimated as carbonic acid and the hydrogen as water.† The object is to ascertain the weight of carbonic acid and of water obtained. As the relative proportion of carbon to oxygen in carbonic acid and of hydrogen to oxygen in water is known, the actual weight of carbon and hydrogen given off is obtained by calculation. Now, though the same principle is followed, a totally different apparatus is used; either the "combustion tube" of Liebig or some modification of it. Their results are given in percentages.

It was a question at that time whether the laws of multiple proportion held good with regard to the composition of animal and vegetable bodies. Berzelius energetically took this subject up. Plants and animals were called organised bodies, and the study of their chemistry came to be called organic chemistry. Berzelius in 1814 much improved the methods for its study. He was the first to give, among other things, the composition of starch, not as Gay-Lussac, and Thénard, and others had done in percentages, but in a formula. His earliest published result was $C_{12}H_{12}O_{12}$, figures which, however, were modified. W. S. M.

(To be continued.)

VEGETABLE PRODUCTS IN VERA CRUZ.

THE growth of Tobacco in the State of Vera Cruz is said to be increasing considerably, the present production amounting to nearly 6,000,000 lb. per annum, and the average cost being about 5½d. per pound. About 23 per cent. is exported to foreign countries, and of this export somewhat less than half is of manufactured tobacco, and comes chiefly to England, the remainder is consumed in the Republic. For the highest quality of Tobacco as much as 10s. 6d. per 100 leaves has been obtained, but this quality is very scarce. Notwithstanding its primitive method of cultivation, Vera Cruz Tobacco

is obtaining—and deservedly—a rapidly increasing reputation, and the tobacco manufacturers of this part are increasing the size of their factories and the number of their operatives, and paying greater attention to the selection and the sorting of the leaves, and are, in fact, producing a very superior article to the Vera Cruz cigar of two years ago, or even of last year. This improvement in the manufacture will, of course, increase the market, and also give great encouragement to the planter; but what is chiefly wanted is capital, combined with the better cultivation which is so necessary, but so difficult to obtain, in the present financial condition of the majority of planters.

VANILLA.

The Vanilla bean grows wild in the cantons of Misantla and Papantla, and it is also cultivated there in a primitive manner by the Indians. It is prepared for market by the cultivators and collectors, and often before it is quite ripe. This is especially the case with the wild Vanilla, one family taking it early lest another family should get it when quite ripe for harvest. The systematic and rational cultivation of Vanilla in the cantons just mentioned would certainly be a remunerative business. At present the quantity produced is about 8000 mils (i.e., 1000 pods), worth about £3 to £3 10s. per mil.

FRUITS.

The fruits of the State of Vera Cruz are of great variety, and grow in such abundance as to be exceedingly cheap. The production of Pine-apples is about 500,000 per annum; they are grown in fields, and their local value is about 1d. to 1½d. apiece. Plantains are a fruit universally consumed, and over 10,000 per annum are actually harvested; their local value is less than 1d. per 10 lb.

PITA FIBRE.

This fibrous plant grows wild in Vera Cruz, and can be cultivated with very little care. Its fibre sometimes measures 3 yards long, and is very silky in appearance; but unfortunately its preparation for market is at present difficult and expensive. The State Government is, however, about to offer a large reward for a machine to reduce Pita to a marketable state without injuring its beautiful fibre, and without making its cost of production too high, having regard to its market value. It is most probable that such a machine will be produced, and if so, Pita will become, undoubtedly, the first article of produce and export of this State.

TREES AND SHRUBS.

ABIES MAGNIFICA (PICEA OF GARDENS).

WE have received from Sir John Walrond a cone of this species with the following interesting details:—"Two plants were bought twenty-seven years ago, both under the name of *Picea nobilis*, but they differed so greatly one from the other in habit that it was suspected that one of them might prove to be *magnifica*. The difference in habit consisted in this—1st. That all the lower branches of the possible *magnifica* died back, leaving a bare trunk for about one-third of its height, the leader remaining healthy, while all the *nobilis* remain feathered to the ground. [Whether this is a specific or merely an individual character remains to be seen.] 2nd. The possible *magnifica* never produced a cone, while much younger plants of *nobilis* cone freely. The supposed *magnifica* has coned at Bradfield for the first time this year." The cone obligingly sent by Sir John Walrond is undoubtedly that of *A. magnifica*; it is a thick, oblong, blunt cone, golden-brown in colour, and with the bracts concealed within the scale, as shown in *Gardeners' Chronicle*, June 12, 1875. The young bark is covered with a rufous pubescence. The upturned leaves are four-sided, and not grooved. The leaves of *magnifica*, seen from the under surface of the shoot, are much curved, with the convexity downwards.

In *A. nobilis* the leaves are broader, flatter, distinctly grooved on the upper surface, and not so strongly curved as in *magnifica*. The cones also are more tapering and glorious in their golden-bronze bracts reflected over the purple scales.

A. magnifica is later before starting into growth in spring than is *A. nobilis*.

The very beautiful but puzzling cone sent to us from the Cranston Nursery some year or two ago, must not be overlooked. Its leaves are more like those of *magnifica*, being either not grooved at all or only grooved at the base. The projecting bracts are like those of *nobilis*, but not reflected, while the general shape of the cone is that of *magnifica*.

MEASUREMENTS OF CONIFERÆ—BRADFIELD, 1887.

	Planted.	Height.
	1855	Ft. In.
<i>Sequoia gigantea</i> (Wellingtonia)...	...	54 0
<i>Abies lasiocarpa</i> (Lowii) ...	About 1857	63 1
.. <i>Nordmanniana</i> ...	About 1857	50 0
.. <i>cephalonica</i> ...	About 1857	52 9
.. <i>grandis</i> ...	1876	45 0
.. <i>nobilis</i> ...	About 1857	49 0
.. <i>magnifica</i> ...	About 1855	43 3
.. <i>grandis</i> ...	About 1860	43 3
.. <i>grandis</i> ...	About 1858	53 9
<i>Picea Menziesii</i> ...	About 1857	57 2
.. <i>orientalis</i> ...	(?)	42 10
<i>Cupressus Lawsoniana</i> ...	About 1860	36 9
<i>Thuja gigantea</i> (Lobbii) ...	About 1859	45 10

J. W.

PLAGIANTHUS LYALLI.

THIS is a Malvaceous shrub, or low tree, occurring on the mountains of New Zealand, deciduous above 3000 feet, but evergreen below that level. The leaves are shortly stalked, from 2–4 inches long, ovate, cordate, acuminate, deeply crenate, glabrous above, covered with white stellate down beneath. The flowers are placed at the ends of short axillary stalks, are white in colour, and each about three-quarters of an inch across. The botanical history of the species is given in Sir Joseph Hooker's *Hand-book of the New Zealand Flora* (1867), p. 30, a coloured illustration being also given in the *Flora of New Zealand*, i., 31, t. 11. For garden purposes, the illustration at fig. 24, p. 209, will suffice to show what a beautiful shrub it is. The specimen from which our figure was taken was obligingly supplied by W. E. Gumbleton, Esq., of Belgrove, Queenstown, near Cork. It is hardy in Southern Ireland, but is worth shelter in colder spots.

HARDY FLOWERING PLANTS.

ARUM DRACUNCULUS.—A very showy and attractive hardy Arad is this species, said to have been introduced to our gardens from Southern Europe more than 300 years ago, and yet how strange it seems that we do not meet with it more frequently in private collections than we do, considering its hardy character, freedom in flowering, and easy culture, which facts must be taken as my excuse for drawing attention to it in your columns at the present time. To those of your readers who are interested in the cultivation of hardy perennial plants, and who have not as yet made its acquaintance, a brief description may be acceptable, and may approximately be stated thus:—Rootstock tuberous, stems erect, leafy, densely spotted or blotched with green and grey—hence the popular name, Dragon plant—2 to 3 feet high. Leaves palmately or pedately divided on long stalks, divided into seven to ten linear-lanceolate, undulate segments, 3–6 inches long, with dark green shining surface. The greatest point of attraction, however, will be found to centre in the spathe or coloured bract, the inner surface of which is of a deep chocolate or brownish-purple, from 8 to 12 inches long, 6 inches wide at its broadest part, obliquely campanulate in shape, tapering

* *Journal de Physique*, 1810, vol. lxx., pp. 257–266, reprinted in *An. de Chemie*, lxxiv., pp. 47–64.

† The following very simple experiment, that can be made without special apparatus, is instructive for those who have not had a chemical training. It needs only a clean plate and a damp cloth with a candle, lamp, or gas-jet. Leaving impurities out of consideration, the gas supplied to our houses is hydrogen and hydrogen in combination with carbon. Paraffins and oils for lamps are liquid combinations of carbon and hydrogen. Candles are also combinations in solid form of carbon and hydrogen. The phenomenon of combustion in each case is similar. The carbon unites with the oxygen of the air and forms carbonic acid. The hydrogen unites with the oxygen and forms water which passes away as invisible vapour, the temperature being high from combustion. But if a plate kept cool with a damp cloth on it be held close over the flame the water becomes visible in drops. The fact of carbon (freed from its combination with hydrogen) being present can be seen by holding the plate near the top of the blue part of the flame.

to a point at the top; base convolute. Spadix 6-8 inches long, of a lustrous dark purple hue. Altogether the plant has a most singular and striking appearance when in flower, the latter is not conspicuous, and situate at the base of the spadix. I may also add that, when in this condition, its odour is the reverse of agreeable or pleasant, and for this reason it ought never to be cut and stood in water to remain in a close room. As to treatment, it will be found to do well in rather a damp, loamy soil, and shady situations, but it will also grow fairly well under less favourable conditions, and may be in-

peduncles or upper branches, the whole forming rather a long loose panicle. When fully expanded, the disc florets are of a deep golden-yellow, outer or ray florets pale lavender, narrow, and somewhat numerous, having a triple row. Its time of flowering extends over a period of four or five weeks—July and August. The plant is very hardy, and will stand through our severest winters without protection. When growing in strong loamy soils it ought to be lifted, divided, and replanted about every second or third year, or it will form such dense masses as to require more than ordinary attention in tying up to

place in a garden, although I may say it will do very well in a drained border, where it can enjoy plenty of sun. In flower July and August, and may be increased by division in spring or autumn.

BUPHTHALMUM SALICIFOLIUM

belongs to the natural order Compositæ, and is worthy of a place in all choice collections of hardy perennial plants. Under good cultivation it will grow 2 feet high, and form quite a bushy plant if left undisturbed for three or four years; and it will produce in abundance flowers that will be found useful for decorative pur-



FIG. 24.—*PLAGIANTHUS LYALLI*: HARDY SHRUB: FLOWERS WHITE: POLLEN GRAIN MAGN. 200 DIAM. (SEE P. 208.)

creased by division early in the spring, just as root-action begins. In flower July and August.

STENACTIS SPECIOSA

should be grown in all gardens where cut flowers are in request; its freedom in flowering, together with its handsome appearance, renders it one of the most useful border plants we have at this time of the year. The flowers are much like some of the Michaelmas Daisies in general appearance, and, like those plants, this belongs to the natural order Compositæ, and to the tribe Asteroideæ. Under good cultivation the plant grows from 2 to 3 feet high. Stems slightly branched; leaves entire, linear; flower-heads $1\frac{1}{2}$ –2 inches across, solitary on the

sticks. May be raised from seed or increased by dividing in spring.

ERIGERON ALPINUS.

This is a British plant, and so closely do the flower-heads resemble those of the last-named, that a novice might easily mistake one for the other if two flowers were cut from the plants and placed side by side. In general appearance, however, the character and habit of the plants are quite distinct, the one under notice growing from 6 to 12 inches high only; the leaves also are much shorter, and the flower-heads produced in the form of a loose corymb. It is well adapted for growing on a rockery, and which, strictly speaking, may be said to be its proper

poses. Stems erect, much branched. Leaves entire linear, or, as the specific name implies, Willow-leaved. Flower-heads deep golden-yellow, 2 inches across, solitary on long wiry peduncles. We do not frequently meet with this species, nevertheless it is probably destined to become a favourite when better known, and will be found a useful second or third row plant in a mixed border. A well-drained soil and sunny position will be found to suit it; and it may either be raised from seed sown in pots in a cold frame, or increased by dividing in the spring. Flowers July and August.

POTENTILLA LUTEA.

I can hardly say that this is a good thing, but it

is noteworthy chiefly as a rarity, and as a species seldom met with outside botanical gardens and the best private collections, and that fact must be accepted as my reason for alluding to it here. As compared with William Rollisson and others of our hybrid varieties it is far from being attractive or showy in appearance. The plant grows from 3 to 4 feet high, and is exceedingly floriferous. Stems slightly pilose. Stipules long and pointed, distinct from the enlarged base of the leaf-stalk. Leaflets five, oblong, toothed and scabrous. Flowers are produced in the form of a rather large, loose terminal corymb, and are pale yellow in colour, being, when fully expanded, $\frac{3}{4}$ inch across, petals free or separate from each other, and rather shorter than the calyx. Will grow luxuriantly in a calcareous soil, and may be increased by division in spring or autumn. In flower July and August.

GENOTHERA YOUNGII.

An evening Primrose, and decidedly one of the best we have in our gardens at the present time, and which ought to be cultivated in all collections of hardy plants where space can be afforded. Its bright golden-yellow flowers give a charm and splendour to a mixed border just now that cannot be equalled or surpassed by any other plant that I am acquainted with. Taking a single flower, it will be found to closely resemble *G. Fraseri* in colour, but in all other respects it is quite distinct from that well-known and widely-grown plant, the stems being more branched and of a deep reddish tinge, leaves not so broad or long, flowers more numerous, larger, and on longer footstalks than *G. Fraseri*. The plant grows about 3 feet high, and delights in a good sandy loam or peaty soil or even a chalky compost, providing the border is well drained. Flowers in July and August; may be increased by division early in spring.

CORYDALIS LUTEA.

A British species, belonging to the Fumitory family, and being an erect spreading plant of from 6 to 9 inches high, it is eminently adapted for growing on rockeries. The plant forms a tufted rootstock. Although they will live and produce flowers for four or five successive years, the plants cannot strictly speaking be regarded as truly perennial, and it will be found best to raise plants from seed every third or fourth year. Leaves of a beautiful pale green, much divided, the segments wedge-shaped. Flowers in racemes, pale yellow, from 4 to 6 inches long, each flower having a short and rather broad spur. To succeed with this species, and ensure its living through severe winters, it must be grown in rather a poor sandy loam; and where this does not exist it will be found a good plan to mix a few small stones or broken pieces of cinder along with the soil to secure ample drainage.

VERATRUM NIGRUM.

This is quite a remarkable and noteworthy herbaceous perennial, said to have been introduced into this country from Siberia so long ago as 1596—a circumstance that justifies one in expressing surprise that it is so seldom met with, comparatively speaking, in private gardens. It is proof against our severest winters without any protection whatever, and is not over-particular as to soil or situation; add to this the fact of its flowers being a nearer approach to black in colour than any other of our hardy flowers, and we have here a species that ought to be found in all gardens where hardy perennials are made a special feature of the place. In one of the mixed borders here there was a plant just coming into flower at the time of writing, and it promises to be the most conspicuous in the gardens we shall have during the next two or three weeks, the spike being fully 6 feet high with every prospect of its lengthening another foot or 18 inches. What a picture it will present when at its best, may, by those who are acquainted with the species, be more easily imagined than described. The plant will also be found an interesting and attractive object for many weeks previous to flowering, chiefly by reason of its handsome coriaceous

foliage, which in shape is broadly ovoid, acuminate, from 8–10 inches wide and 12–15 inches long, more or less corrugated. Root-stock may be divided in spring as soon as growth begins. Flowers in August. *J. Horsfield, Heytesbury.*

CULTURAL MEMORANDA.

ALSTRÖMERIAS.

THESE stand almost unrivalled among herbaceous plants, as they are exceedingly floriferous, and endure a long time when cut. They are not hardy enough to succeed in all places, but will do well in any ordinary favoured spot in most gardens, the best situation for them being on a sloping south border, or under the foot of a sunny wall, where, with the slightest surface protection, they will stand the winter. The most suitable soil is a light sandy one, and if not naturally well drained, the bed or border intended for them should be dug out a yard or so deep and have 6 inches of brick rubbish placed at the bottom, and over this some half-rotten leaves or strawy manure, to keep the interstices open and clear. This done the soil may be returned, and in doing this it will be advisable to mix in with it some leaf-mould and road-scrappings, as the plants like a loose run, that they may be able to send their fibrous roots down freely; and unless they can strike deep the frost kills the crowns. To prevent this, at starting it is necessary to plant well below the surface, or it is a good plan to sow seed where the plants are to remain and grow, which saves transplanting; and this is a difficult matter with *Alströmerias*. The best time to sow is as soon as the seed is ripe, as though it does not germinate then it lies safe in the ground, and will come up the following spring, and by the end of summer the plants will be fully established. To render them safe for the winter cover with cocoa-nut fibre or rough leaf-mould. *J. S.*

LAYERING CARNATIONS.

There is no readier or surer way of raising a stock of Pinks and Carnations than layering in prepared soil having a surfacing of sand. Put 2 or 3 inches of this mould around each plant, remove a couple of the grasses from the base of each shoot, make a clean cut half way through and 1 inch long, in an upward direction from the bottom joint; bend the shoot, pressing the tongue thereby formed into the sandy soil, and secure it there by a small crook, giving water through a fine rose to settle the soil. This should be done as soon as the bulk of the bloom is over—usually early in August.

EPIPHILLUM SALMONEUM.

The large salmon-sulphury coloured flowers of this plant are very sweet and delicate looking, and are useful decorative plants, not only in the greenhouse and conservatory, but also for rooms. Cuttings put in singly at the end of autumn, in 3-inch pots filled with a mixture of three-parts light loam and one of leaf soil, with a surfacing of silver-sand, and plunged in a hand-light containing 4 or 5 inches deep of sawdust in a stove, will soon root. They do not require much water at the roots, but when the soil becomes dry, sufficient water to thoroughly moisten it should be given. Standards, pyramids, and large plants of any desired shape may be obtained more quickly by grafting on to the *Pereskia*, and growing on heat and moisture; the moss round the graft and stock being kept moist until the union is completed. *H. W. W.*

PHACELIA CAMPANULATA.

Among the numerous meritorious plants introduced by Mr. Thomson, of Ipswich, this is one of the most beautiful, as the richness of its lovely blue flowers is unrivalled. Some few years ago, when seed was first received, great care and pains were taken in raising plants, as it was thought to be what gardeners term "miffy," and a bad doer. It is, however, one of the best annuals, as it comes up outdoors from self-sown

seed, and grows freely if in suitable soil. No garden should be without some plants in the borders, where it may be sown either in patches in the ordinary way, and thinned out, or raised in pots in frames, and planted out after. The flowers are bell-shaped, about half an inch across, and are held erect. *J. S.*

ORCHID NOTES AND GLEANINGS.

ÆRANTHUS CURNOWIANUS.

THIS is a valuable addition to the set of small but lovely Orchids, chiefly represented by *Angræcums*, which have been introduced in recent years from Madagascar. It is well worth the small space it occupies in the Orchid-house. The distichous leaves are only 2½ inches long by ½ inch broad, bilobed at the apex, slightly scabrous, and of leathery texture. The comparatively large flowers are solitary on short peduncles, and measure nearly 2 inches in diameter. The sepals and petals are lanceolate; the lip is broadly ovate, with a slender tapering spur, 4 inches long. The whole of the flower is a pure glistening white, except the lower part of the spur, which changes to green. This species was described by Reichenbach in the *Gardeners' Chronicle* for March 10, 1883. A plant is now flowering at Kew, which grows well in sphagnum, suspended near the glass in the warm-house.

ORNITHOCYLUS FUSCUS.

A plant of this, sent to Kew from Burmah by the Rev. Mr. Parish, two or three years ago, is now in flower. It is an uncommon species (sometimes known as *Ærides difforme*), with small flowers, having a lip of very singular structure. The pendent racemes of forty or more flowers are produced from the axils of the fleshy oblong leaves, which are 4 inches long, and unequally bilobed at the tips. The sepals and petals are brownish-yellow, marked with purple lines. The curiously formed lip has a short conical spur, and is three-lobed; the prominent middle lobe is erect, horse-shoe shaped, and fringed, being of a reddish-purple colour. This plant requires the same treatment as *Ærides*.

STENOGLOTTIS FIMBRIATA.

Either with or without flowers, this is a very distinct and attractive little Orchid, and being of easy culture it deserves to be seen oftener than it is at present. Being a native of South Africa—a part of the globe which does not yet appear to have many attractions for Orchid collectors—is a fact which perhaps accounts for its rarity in this country. Several plants brought by Mr. Watson from the Cape are in flower now at Kew. The leaves are very ornamental, being deep green, with several longitudinal rows of black spots; they are 4 inches long, have a wavy outline, and spread horizontally near the surface of the soil. The rose-pink flowers are densely produced on scapes 6 inches high, and have a three-lobed lip spotted with purple. These plants are, in their native state, found growing on boulders near the banks of the Buffalo River. The Kew plants grow in the cool-house, and, in imitation of their natural conditions, are fastened on a piece of limestone, with sufficient sphagnum to cover the fleshy roots. To this treatment they have adapted themselves perfectly, and now form a pretty picture. They may also be grown in pots in a compost of leaf-mould and fibry peat, with a surfacing of sphagnum. *W. B.*

LÆLIA ELEGANS AT THE WOODLANDS, STREATHAM.

IN the fine collection of Orchids belonging to R. H. Measures, Esq., the numerous beautiful and dissimilar varieties of *Lælia elegans* are now making a very fine show, the still rare *L. Turneri* being the handsomest and most stately in growth and flower. Some of the plants have stout pseudo-bulbs, over 3 feet in height, many of them furnished with very strong flower-spikes of eight to ten flowers. Of the beautiful collection the most beautiful is

L. e. incantans, n. var., *Gardeners' Chronicle*, September 17, 1887. Flowers 6–7 inches across, wax-like in texture, sepals and petals quite unique in colour, being Indian-yellow or yellowish-nankeen, the front coloured portion of the labellum being brilliant dark purple. Evidently of the same strain is *L. e. Measuresiana*, n. var., *Gardeners' Chronicle*, February 12, 1887. This has sulphur-coloured sepals and petals, and richly coloured violet front lobe and tips to the side lobes of the labellum, the tube being pure white. Also, following in the same way, is the lovely *L. e. Nyleptha*, which was illustrated in the supplementary sheet of the *Gardeners' Chronicle*, February 11, 1888. The sepals and petals are cream-coloured, or pale sulphur-yellow, the tube of the labellum being pure white and the expanded front lobe of the labellum, which is $2\frac{1}{4}$ inches across, as well as the erected tips of the side lobes, rich dark crimson. *L. e. Mooreana* is of the true *Turnerii* colour, viz., sepals and petals dull rose and the lip purplish-crimson, but the flowers are more compact and the labellum shorter, reminding one much of the grand Veitchian hybrid *Cattleya Chamberlainiana*.

L. e. cyanthus is also of the rose-petalled strain, but very distinct and beautiful. The tube of the labellum is sulphur colour, and the front lobe rich maroon. The finest of all, *L. e. Tautziana*, is sending up three stout spikes. Other distinct forms in flower are *L. e. Houtteana*, *L. euspatha*, *L. e. Schilleriana*, and various forms of white or blush-petalled typical *L. elegans*. There is also a grand show of *Cattleya Gaskelliana*, some fine *C. Eldorado*, white and coloured; many rare *Cypripediums* and other things are in bloom, and notably a beautiful specimen of *Eulophia guineensis* with thirty-eight flowers with their flat rose-pink labellums. *Odontoglossum Schroderianum*, a very rare and distinct plant, is now in flower in the collection. The general appearance of the flowers call to mind *O. labe*, but the lip is broad and much more showy than in that species, the basal part rich crimson, the front pure white; the sepals and petals are wavy at the edge, the colour creamy-white blotched with brown. The plant has a glaucous tint, and is altogether distinct, and very handsome when in flower.

STANHOPEA PLATYCERAS.

This is certainly a king among Stanhopeas. It has larger flowers than any we have seen, and the colours—pale yellow with purple spots—are attractive, whilst for aromatic odours it is at least the equal of any of the kinds. It is a recently introduced plant, but figures of it have already appeared in the *Garden* and in *Reichenbachia*. The flowers are 6 inches across, the sepals being $3\frac{1}{2}$ inches long by $2\frac{1}{2}$ inches wide, slightly concave, and spreading. The labellum is proportionately large; the mesochil, or lower hollowed-out portion, is boat-shaped, and 1 inch deep, the horns are prominent and thick, and the front part of the lip is tongue-shaped, the whole length of the lip is 3 inches, and the column is quite as long. The pseudobulbs are 2 inches long, pear-shaped, and furrowed; and the leaves are 15 inches by 4 inches. A plant of this species is now in flower at Kew. It is a native of Columbia. *W. W.*

FRUIT REGISTER.

ALEXANDER PEACH.

As showing the earliness of this, I may mention that we gathered ripe fruit on August 6 from the open wall, which shows its great value for succeeding others grown in houses or for forcing, as it is ready long before others (except *Early Louise* or *Beatrice*, to both of which it is superior), and puts on a fine colour. Perhaps some correspondents who have grown both would oblige by kindly giving their experience or opinion as to whether this is really synonymous with *Hale's Early*. If they are, we do not want the two names. I would remark to those young inexperienced cultivators about to plant trees when the time comes, how much they lose by

the old fallacious system of shortening back the branches, as by pursuing that method of treatment the work has to be done over and over again, whereas if the shoots are left full length, and every encouragement given the foliage, root-action, as a natural consequence of the extra leafage, is doubled, and the wall or trellis on which the tree is trained is rapidly furnished, and the plant quickly established. *J. Sheppard, Woolverstone.*

EARLY RIVERS PEACH.

This is a fine showy-looking Peach, with a pale skin, the fruit being about the size of the old well-known *Noblesse*, but, unfortunately, it lacks quality, and what also tells against it is, that it is very apt to crack or split at the stone. The tree is a strong grower, and not subject to mildew, and if the fruit were only better flavoured it would be a very desirable variety to have in a garden. *J. S.*

WHICH IS THE EARLIEST PEA?

WRINKLED VARIETIES.—We now possess a valuable group of early dwarf wrinkled Marrow Peas of great value for early crops in the open, and also for frame and pot culture. In the front rank of these must be placed *William Hurst*; it is a little taller than *American Wonder*, but it is quite as early, and bears the finest pod of the two. It will probably be very scarce for a year or two more, and then I think it will become very popular. A new Pea—that is, a *bona fide* new variety—is, in these days, sent out in small quantities, owing to the stock being limited, and it takes two or three years at least before it becomes widely known. *Chelsea Gem* is a counterpart of this, only that the seed is white, while that of *William Hurst* is blue in colour. *American Wonder* is still a good useful dwarf Pea, and I should think it is an American selection from *Little Gem*, one of Dr. Maclean's varieties of some forty years ago. *Little Gem* is a trifle taller than *American Wonder*. *Premium Gem* appears to be a slightly taller growing form of *Little Gem*. The latter, and, indeed, all the early dwarf Wrinkled Marrow Peas require persistent selection. They all appear to show a tendency to run back to small-podded types. At Messrs. Hurst & Sons' trial-grounds at Springfield, Chelmsford, where these notes were taken, there were several rows of a very select stock of *Little Gem*, bearing fine pods, containing seven and eight Peas. The seed from this stock is carefully saved; it is sown again next year; rigidly looked over, and the produce is sent out to be grown in quantity for sale; perhaps it is of a more robust character; but since *American Wonder* came across the Atlantic, *Little Gem* has not been in so much demand as it formerly was. *Multum in Parvo* is a variety that I think was originally selected from *Little Gem*; it is a true wrinkled Pea, the seed white, and bears a distinct broad and stout pod, and it is of excellent quality for the table, but somehow or other it is always scarce, and the price high. It is in great demand in Scotland, but the supply is rarely equal to it.

Bliss' Abundance is another American introduction, of the type of *Advancer*, but rather longer in the pod and a little later: it is, I think, a probable selection from it. *Advancer*, where grown in a rich light soil, is an early table Pea of the finest quality. I called upon a market gardener a short time ago who was growing a good stock of this Pea for his own eating, and he was loud in his praise of it, on account of its high table and cropping qualities. *Laxton's Standard* or *Charles I.* is a good useful dwarf free growing and bearing Pea, $2\frac{1}{2}$ feet in height, with curved pods that fill well; but it is said not to be of the best quality. I think it is a very fine market gardener's Pea, and should displace *Harrison's Glory* and one or two older sorts of a similar type.

Laxton's Dr. Hogg is a first early wrinkled Pea that does not appear to have made the mark expected of it. It was only one day behind the earliest this season: it produces good sized curved pods, of about

the same character as *William I.* It appears to show a tendency to produce both white and green pods—a mixed condition not unusual in several of Mr. Laxton's Peas. But I feel justified in describing it as a very good early Pea, a free cropper, and of excellent quality; it is about 2 feet in height. *Early Bird* appears to be the same, and it is a reasonable inference that the green-podded form was selected and sent out under the latter name. *Stratagem* is well known as a standard early dwarf wrinkled Pea, producing fine pods, and valuable for early exhibitions.

I think *Laxton's Alpha* has had to give place to *William I.* Mr. Laxton did good work in fertilising, in order to give us a new race of Peas; but he attempted too much, or—shall I say?—he introduced too many varieties, as there is an inevitable sameness of character among many of them. *Alpha* has medium-sized pale blue wrinkled seed, and a curious kind of fold both at the top and under-sides of the pods and it does not appear to be very hardy. *Day's Early Sunrise*, originally sent out as a first early Pea, has fallen behind some of the earlier and later introductions, in point of earliness. It is properly an indented Pea, though classed as a wrinkled one. But it is so robust in constitution that it makes a good variety for autumn or early winter sowing, because it stands hard weather well. The autumn sowing of Peas is not so much practised as it used to be. It is said of *Day's Sunrise* that autumn sown seed produce crops twice as large as when sown in spring. For spring sowing this Pea is now distanced by others of better character and quality. *Robert Fenn* is a second early Pea that is not nearly so well known or appreciated as it deserves to be. It is a remarkably good wrinkled variety, of dwarf growth, producing a large crop of large pods of the finest quality. It is a decided improvement on *Maclean's Best of All*, and has one remarkably good quality—it keeps its character well, and does not run out.

So much for the early wrinkled Peas. At Springfield, Chelmsford, the whole of the trial Peas are grown in ordinary field soil without any of that special cultivation that is given in gardens. It is only reasonable to imagine that the characters of the Peas grown in ordinary land, in a fully exposed position, can scarcely tally with those grown in the better cultivated and more sheltered ground at Chiswick; or in Messrs. Veitch & Sons' trial grounds at Turnham Green. Perhaps the conditions under which they are grown at Chelmsford are more favourable to an appreciation of the character of Peas under ordinary garden cultivation than when grown in richer soil. That climate and soil have a great influence upon growing crops of Peas there can be no doubt. Some varieties appear to do best in a dry, others in a moist season. But the heights to which Peas grow this season are greatly in excess of last summer's experience, and generally the varieties may be regarded as rather more dwarf than they appear this season. *R. D.*

THE MELBOURNE HERBARIUM.

HEREWITH I send you a photograph (just taken) of the Herbarium here. The main building, consisting of one large room, was constructed in 1857, under the direction of Captain (now Major-General) Pasley, the then Minister of Public Works for Victoria. The material used for the walls is basalt, the ordinary building material in Melbourne; the roof is constructed of English tiles, rarely seen in use over here, slate being generally adopted for roofing purposes. The cost of the main building was about £1000, but several hundred pounds sterling were expended subsequently for fittings in wood of *Cedrela australis*. Three years ago, when the great *Sonderian* collection was acquired, an annexe of galvanised iron was added at a cost of a few hundred pounds with further costs for shelves, &c., amounting to several hundred more. The total collections of dried plants comprise now about half a million sheets, each as a rule containing several specimens.

My own collections were presented to the public herbarium. I commenced collecting in 1840, and have continued in Australia uninterruptedly since 1847 (till 1853 entirely at my own private expense), and later also with my own means to a not inconsiderable extent.

About 1859 Dr. Steetz's important collections were added by departmental purchase; later, by the same means, Mr. T. Drummond's private set of West Australian plants, and various other collections. Many other things were secured for Australia, either by purchase or by exchange, and large donations were received from Sir William and Sir Joseph Hooker, including typical specimens of R. Brown's Australian and Sir Joseph Hooker's Indian plants. It would make too long a story, to enumerate even the main treasures of the herbarium in a brief communication like this; but it is my intention to publish a small volume explanatory of the richness of our gatherings here. Through Dr. Sonder's herbarium, original specimens from the collections of several disciples of Linnæus were obtained, coming from Professor Lehmann's herbarium. Thus we have many authentic specimens from Thunberg, Giseke, Ehrhart, and Gouan. In Australian plants the Melbourne collections are by far the richest of any in existence. But South Africa is also particularly well represented, chiefly through Steetz's and Sonder's herbaria; and although the main portion of the South African plants went many years ago from Sonder's herbarium to Stockholm, authenticated fragments of most are here also. No region of the globe is unrepresented in the Melbourne Herbarium, and this often by original material not extant in many other places nor now obtainable anywhere.

The herbarium building is about a mile distant from Melbourne, within the Government House Reserve, and in the close vicinity of the astronomic and meteorologic observatory.

The technologic-botanic collections, accumulated largely by my exertions, are located in the "Technologic Museum," close to the great Public Library in the centre of Melbourne, the museum being under the administration of the trustees of the Public Library also. A special hall is soon to be provided for the vegetable technologic articles, as the timber collections, and also those of various other vegetable products are so extensive; moreover, the Centennial Exhibition is sure to add to those riches. *F. v. Mueller.*

SCHOMBURGKIA TIBICINIS.

This fine plant (fig. 25) gives an illustration of the unmerited application of a bad name, for it is currently reported to be difficult to flower; such, however, is not the case, otherwise it would not flower regularly every year with those who grow it properly. Sir Trevor Lawrence flowers it regularly, and in the fine Cattleya-house of Messrs. Jas. Veitch & Sons, at Chelsea, are many specimens which flower as freely as could be desired. The fact is, it requires growing in a well ventilated intermediate-house, and in a good light. The pseudobulbs are of peculiar structure, hollow, and somewhat resembling a cow-horn. The stout flower-spike, 7 or 8 feet in length, bearing at the top many flowers with reddish-brown or purplish sepals and petals; the side lobes of the lip yellow, streaked with purple and edged with white, the front lobe white, veined and suffused with purple. The plant was discovered by Mr. G. Ure Skinner, in the highlands of Honduras, over fifty years ago, and it also occurs in Mexico and Guatemala.

DUTCH BULBS, &c.—Messrs. Ant. Roozen & Son, of Overveen, near Haarlem, have published *Notes on the Cultivation of Dutch Bulbs and Other Plants*. The book has no pretension to be a scientific treatise, but will be very useful to many for the sake of its practical hints. A second edition is sure to be called for, and this will give the opportunity for correcting errors and misprints.

PLANT NOTES.

THEROPOGON PALLIDUS.

This is an extremely pretty plant of the Liliaceous order, bearing flowers somewhat similar to those of the Lily of the Valley, though its flowers lack the whiteness of the above, as the perianth is tinged with red, but they are scented. The leaves are grass-like, and longer than the racemes. It is a native of the Himalayas, and was figured in *Bot. Mag.*, 6154. Grown in a cool-house, and potted in a mixture of loam, leaf-mould, and sand, and grown in

pollen from Sultani, though hardly an advance upon other kinds; one, a strong grower, and of a colour between the two, has done well for bedding-out purposes in sheltered places. It would be interesting to know if others who have grown *I. Episcopi* have plants bearing pollen. *W. Harrow, Botanic Garden, Cambridge.*

IXORA MACROPHYLLA.

This is a magnificent plant when properly managed. It differs from the bulk of *Ixoras* in its habit of flowering only when the shoots are allowed to grow to a length of several feet, and when they are as thick as a goose-quill. Upon such shoots the flower-



FIG. 25.—SCHOMBURGKIA TIBICINIS: FLOWERS REDDISH-BROWN.

48 or 32-size pots, it makes a useful and attractive plant for decorative purposes.

IMPATIENS EPISCOPI.

This perhaps should be considered as a variety of *I. Sultani*, though it is somewhat different from that species. The principal differences are—the stems are striped with dull red longitudinal lines, leaves smaller and of a darker green, flowers magenta and not so large as those of *I. Sultani*, and out of the many flowers we have examined the anthers appear abortive—no trace of pollen was to be found.

It does not develop into good specimens without frequent stoppings, whereas *I. Sultani* makes good plants with hardly any assistance in that way, but it makes a very good companion plant for the other, as its colour is far the brightest by lamp-light. Varieties have been obtained by crossing it with

heads are nearly 1 foot in diameter, half-spherical, and crowded with starry flowers of a deep scarlet colour. There are several plants of this species in flower in the Victoria-house at Kew, where the unusually large size of the heads of flowers attract much attention from visitors. Apparently the plant is little known, although it has been in cultivation about ten years. It was introduced from Sumatra by Messrs. Veitch, who distributed it under the name of *I. Duffi*. It is figured in the *Botanical Magazine*, t. 6853. The leaves are 1 foot long and 3 inches broad. *W. W.*

EURYCLIS.

One at least of the several species of this genus is worthy to be placed along with the *Eucharis*, on account of the size, purity, and elegance of its flowers. Two species, viz., *E. Cunninghami* and *E. amboi-*

nensis, have been flowering for some weeks in the Begonia-house at Kew. The latter is much the better plant, as the flowers are twenty to thirty in an umbel, on an erect scape over a foot long; each flower is $2\frac{1}{2}$ inches across, in shape like a *Eucharis*, differing chiefly in having an irregular jagged staminal cup. The flowers are pure white and lasting. *E. Cunninghami* is smaller in all its parts, but still a pretty stove bulb. There are about a dozen flowers on an erect scape a foot long, each flower being 1 inch across, and pure white. Both species require warm greenhouse treatment, and a rest on a dry shelf when the leaves wither; they should be planted in a mixture of loam and leaf-mould with sand and a sprinkling of crushed bones. They like plenty of water whilst growing. *W. W.*

PLANTS AND THEIR CULTURE.

CRASSULAS.—These fine old-fashioned plants are deserving of more extended culture than falls to their lot at the present day. It is true they are not well adapted for cutting from, yet well-flowered specimens are always conspicuous and useful decorative subjects for the greenhouse or conservatory, and for this purpose the old *Crassula* (*Kalosanthes*) *coccinea*, of which there are several varieties, is one of the best. These plants may either be grown as single specimens, or several may be grouped together in a pot; but whichever plan be pursued—and with the exception that it takes much longer to form a large specimen from a single cutting than when several are grown together—there is otherwise practically no difference in their management. In either case, plants whose flowering is past should have all the flowered shoots cut back to a point as far back as it is likely that fresh growth would again develop; they may then be stood out-of-doors, or in a light airy house, until such time as the cut-back shoots have pushed out fresh growths, when repotting should be done, previously carefully removing all loose soil, putting them for the time being in perhaps smaller size pots, making the soil quite firm and the plants steady, as if they are allowed to sway about in the pots they will not make satisfactory progress. But if they merely require a shift, do this, always affording the plants good drainage. These plants are, however, much better underthan over-potted; indeed, large specimens may be kept for years in perfect health by simply removing the inert surface soil, and applying a sprinkling of some mild prepared fertiliser, then refilling the pot with the usual potting compost, which should consist of light fibrous loam, a small quantity of leaf-mould with a sufficiency of coarse silver-sand, or pounded brick rubbish, to keep the soil porous. As it is desirable that a few fresh plants should be added annually to the stock, the present is the best time to put in cuttings; select the points of sturdy shoots, about 6 inches long, trim off the bottom leaves, and cut evenly the base of the cuttings, placing about five of them in each pot, using large 60's or 48's filled with the compost recommended, with an additional pinch of sand round the cuttings. Stand them in a light airy position, and do not water them much until they are well rooted. Watering must at all times be rather under than overdone. If the roots are kept constantly soaked they have a tendency to decay; give water when it is required, and allow the soil to get rather drier than most plants before water is again applied. After the cuttings are rooted, if single specimens are desired, shift on and pinch out the points of the shoots until the required number of leads is obtained. Under this treatment it will be the second year before they flower; but if the potful is potted on, they form good decorative stuff the first year. A few treated in each way is usually the more serviceable plan. In the case of some of the smaller-growing species however, massing the plants is preferable; indeed, in such species as *C. jasminæ*, or *lactea* and its variegated variety, this is the method invariably adopted by me. *Jasminæ* is an exceedingly-neat white-flowered species rarely growing more than 9 inches in height, and as brought to market by trade growers is a capital decorative plant. *C. lactea* has a lax trailing habit, and looks well when allowed to hang gracefully over the sides of the pots. *C. Bolusii* and *C. Cooperii* are two neat trailing or carpeting species, with very slender stems and prettily marked leaves, both are nice subjects to grow in shallow pots or

pans for the front row of the greenhouse. *C. lycopodioides* may be similarly used. It has hard wiry stems with the leaves so closely imbricated that it much resembles a *Lycopodium*, such as our native species, *L. clavatum*, hence its specific name. These *Crassulas* winter best in a dry airy house, with a position near to the glass, and a temperature ranging between 40° and 50° . *C. Rochea falcata* is a desirable plant, but more properly belongs to the succulent group, (see p. 150).

Calceolarias.—The latest sowings of these should now be made, and, as before, in pans filled with finely prepared compost, which has previously been well watered. Sow thinly and evenly, but do not cover with soil—a piece of glass laid over, and the pan plunged in moss or other moisture-holding material and placed in a cool-house in such a position that the sun's rays do not fall directly on it. This treatment will usually be sufficient to avoid the need to give any water until the seedlings are well above the soil. If they appear to get dry damp the plunging material or dip the pans in water, taking care that the water does not rise so high as the surface of the soil. With these precautions an ample and speedy braid may be looked for. The plants from earlier sowings should be pricked off as soon as they are large enough to be handled. In this stage a somewhat stronger compost than that used for the seed pans should be employed, consisting of about one half good loam, the other half leaf-mould and sand, varying the latter according to the texture of the loam. Until the plants have made three or four fair-sized leaves they are better grown in boxes, the roots then being kept in a more equable state as regards moisture than if potted singly in small pots. Give the seedlings a very slight amount of shade, and, as soon as they have taken to the new soil, plenty of air. When about the size above-mentioned, they should be removed from the boxes and put into large 60's and 48's for the winter, adding more loam to the potting compost.

Pelargoniums which have been standing out, and whose shoots are now well ripened should be cut down, placed erect to break anew, and if they can be accommodated in a cool frame or greenhouse, where they will not get too wet at the roots, it is an advantage, the young growth being then stronger. *F. Ross, Pendell Court.*

THE FLOWER GARDEN.

PROPAGATING.—A beginning ought to be made with the majority of soft-wooded summer bedding plants, i.e., where cuttings are plentiful and providing they can be taken from the plants without spoiling the appearance of the beds. In some districts the growth of certain species of tender plants has been very slow this season, and it is more than probable that if the full number of cuttings required were cut off now the plants from which they were taken would be crippled and disfigured for the remainder of the summer. By far the better plan in such cases would be to put in fewer cuttings than usual, and when the proper time arrives pot up a greater number of the old plants. A suitable compost in which to root most kinds of bedding plants, consists of three parts loam, one of leaf-mould, and one of sharp sand, the whole being passed through a fine sieve before using it. Zonal *Pelargoniums* may be put in 6-inch pots, about a dozen in each, or in boxes 20×14 inches, and 4 inches deep. In preparing the same use clean potsherds for drainage, over which place a layer of moss or rough siftings of fibrous loam, and fill to within half an inch of the top with prepared compost, pressing it down moderately firm. If boxes are made use of they ought to be stood on small pots or wooden trellising till the time arrives for moving them indoors; guard also against overcrowding, or considerable loss from damping may be the result, the growths being unusually full of sap; tricolors are best put in singly in thumb-pots. Such subjects as *Coleus*, *Iresine*, *Königa*, *Mesembryanthemum*, *Lobelia*, *Tropæolum*, *Ageratum*, *Gnaphalium*, and *Heliotrope*, will be found to root freely in frames if carefully attended to in regard to moisture, shading from bright sunshine and ventilation until the cuttings are rooted, after which period plenty of ventilation should be afforded. For propagating these plants use clean 6-inch pots, and plenty of drainage, new pots being soaked in water beforehand. *Alternanthera* and *Verbena* may also be treated in the same way with the latter; however, I prefer to

propagate them in shallow boxes, over which panes of glass are laid till rooting has taken place. If frames in which Cucumbers or Melons have been grown are used for this kind of work the sides and the lights ought to be thoroughly cleaned inside, to rid them of red-spider and other insects, at the same time a layer of sifted cinder-ashes should be put at the bottom. Cuttings of *Pansies* and *Violas* may also be put in on outside borders, giving them rather a shady position and a sandy compost. Examine those that were put in earlier, pinch off the flowers, and fill up blanks. Almost all kinds of hardy bedding-out plants may be propagated now on beds outside; fork over the beds and rake in a liberal admixture of sifted leaf-mould and sand on the surface. A second batch of *Pentstemons* and *Phlox* cuttings may be put in 4-inch pots and placed in a cold frame, also *Rose* cuttings, if more are required, bearing in mind with the latter to take off shoots which have produced flowers, and inserting them in pots immediately they are taken from the plants. For further details refer to a previous Calendar.

Seeds.—Collect seeds of all hardy plants as fast as they ripen, i.e., of such as are needed. This is one of those little matters in which care and judgment are required or the consequences may be vexatious and disappointing. It seldom happens that all the seeds on an outdoor grown plant are fully ripe at one time, and it will be found better to gather them at intervals of two or three days rather than all at one time. Care should also be taken not to collect seeds before they are quite ripe and the seed-vessel bursts, and with nearly all the *Compositæ* when the pappus or feathery hairs are well above the flower-head. Choose fine weather for this work, and name, clean, and store away in a cool dry place all such as are not required for immediate sowing. Seeds of many hardy perennials may be sown at the present time; and where the means at command will allow, sow in pots or pans and give them cold frame treatment in preference to sowing on borders outside. Use clean 4 to 6-inch pots, half fill with broken potsherds, over which place a layer of moss, and fill to the rims with a finely sifted compost consisting of two parts loam, one part leaf-mould, and one of coarse silver-sand. Many kinds of hardy annuals may now be sown on outside borders for early spring flowering, amongst which may be named *Saponaria calabrica*, *Candytuft*, red and white; *Clarkia pulchella*, *C. p. marginata*, *Collinsia bicolor*, *Limnanthes*, *Erysimum*, *Perofskianum*, *Virginian Stock*, *Bartonia aurea*, and many others. Choose a light and well drained soil of a rather poor character and sow in shallow drills 6 inches apart on beds 4 feet wide. They may be transplanted to their flowering stations, either in the autumn or spring, but if at the latter period avoid sowing too thickly. *J. Horsefield, Heytesbury.*

THE HARDY FRUIT GARDEN.

PLANTING STRAWBERRIES.—The present is the most favourable season in which to make new plantations, if the ground has been prepared as previously advised, and the runners have filled their pots with roots. Before proceeding to plant, tread the ground firmly and equally all over, and be sure to make firm the soil round the plants. The usual distances for planting are 18 inches between the plants, and 2 feet from row to row. Should the weather be dry, the plants must be well watered at the roots, then slightly mulched with short dung, and kept clear of runners. Attend to the watering of the forced plants recently set out, should they require it, and pinch off the runners as soon as they appear.

Miscellaneous.—Apple and Pear trees in the open quarter had better be examined again, and have all their secondary growths pinched in. The Early Margaret is now ripening its fruits well, which will be allowed to remain on the tree, and gathered as required. Morello Cherries will generally be found ready for bottling purposes, over-ripeness rendering them useless for this purpose. The fruits that are left after gathering for this purpose must be preserved from the attacks of wasps and flies. It is a good plan to set traps composed of bottles partly filled with sour beer and sugar, which should be hung on the walls adjacent to the house, but the surest method for wasps is to find their nests and destroy them. The early varieties of Plums now ripening will require to be looked over daily, gathering the ripest fruits. *A. Ward, Stoke Edith Park.*

Advertisers are specially requested to note, that, under no circumstances whatever, can any particular position in the paper be guaranteed for advertisements occupying less space than an entire column.

APPOINTMENTS FOR THE ENSUING WEEK.

MEETING.

TUESDAY, AUG. 28 { Royal Horticultural Society: Fruit and Floral Committee.

SHOWS.

WEDNESDAY, AUG. 29—Harpden and Bi-hop's Stortford.

THURSDAY, AUG. 30—Hawick.

FRIDAY, AUG. 31—Sandy.

SALES.

MONDAY, AUG. 27 { Dutch Bulbs, at Stevens' Rooms,
Dutch Bulbs, at Protheroe & Morris' Rooms.

TUESDAY, AUG. 28 { Flowering and Imported Orchids,
at Protheroe & Morris' Rooms,
Greenhouse Plants, at the Nursery,
High Road, Stamford Hill, by
Messrs. Protheroe & Morris.

WEDNESDAY, AUG. 29 { Dutch Bulbs, at Stevens' Rooms,
New Orchids from Mr. F. Sander,
at Protheroe & Morris' Rooms,
Clearance of Store and Greenhouse
Plants, &c., at Bel-field, Winder-
mere, by Messrs. Protheroe &
Morris (two days).

THURSDAY, AUG. 30 { Imported and Established Orchids,
at Stevens' Rooms,
Dutch Bulbs, at Protheroe & Morris' Rooms.

FRIDAY, AUG. 31 { Freehold Nursery and other Pro-
perty in Kingston, by order of the
Executors of the late Mr. T. Jack-
son, at the Mart, London, by
Messrs. Protheroe & Morris.

SATURDAY, SEPT. 1 { Imported and Established Orchids,
at Protheroe & Morris' Rooms.
Dutch Bulbs, at Stevens' Rooms,
Dutch Bulbs, at Protheroe &
Morris' Rooms.

The National Co-
operative
Festival and
Flower Show.

THE first so-called Festival of Labour, and the third co-operative flower show, were held at the Crystal Palace last Saturday.

Great interest attaches to this demonstration to working people of their own varied powers of self-help, and which serves to exhibit the progress already made in co-operation. The presence of more than 27,000 visitors may be accepted as a solid proof of the progress already made, and as full of promise for the future.

This is hardly the place to say much about the Festival of Labour, though we yield to none in the pleasure the association of the two ideas affords. Work in many spheres of labour—far removed from trades in which sweating systems have been thought possible—has become far too much of a drudgery, and there are few trades or professions in which the old saw, "All work and no play makes Jack a dull boy," is more frequently verified than in gardening. Now, if this is true of a business which, of necessity, is largely prosecuted in the open air, it is much more so of the majority of those industrial enterprises that are carried on indoors, and many of them in overcrowded and unsanitary workshops.

The exhibition of co-operative products—that is, from workshops in which the operators share in the profits—was contributed to by 150 co-operative societies in England and Scotland, three from France, and one from Italy. That the members of our co-operative industrial societies have taken up horticulture as a source of recreation and profit is one of the most hopeful signs of the times. That the attractions of horticulture were sufficiently strong to hold the industrial classes as with a spell around the horticultural products during the counter attractions of the other most interesting exhibitions in which so many of the visitors had also a deep personal interest, speaks volumes of the hold

that horticulture has already gained over them. Neither can the exhibition of fruits, flowers, and vegetables of last Saturday fail to strengthen the love of horticulture among the masses. Up to quite recently the majority of the working classes have been more or less apt scholars in the utilitarian school of horticulture. Beginning with the poor man's vegetable, the Potato, the greater number of exhibitors seem to have almost perfected its cultivation and gone on to Carrots, Turnips, Onions, Parsnips, Beet, Cabbage, Cauliflowers, Peas, Beans—Broad, French and Runners; but beyond the first three of these vegetables undue diversities of skill and merit become more apparent.

In the classes for vegetables the entries were very numerous:—For a collection of six vegetables, sixty-three entries; thirty-six pods of Peas, one hundred and three entries; thirty pods of Broad Beans, seventy-nine entries; thirty pods of Scarlet Runners, seventy-six entries; thirty pods of dwarf French Beans, eighty entries; six Carrots, one hundred and nine entries; twelve spring-sown Onions, sixty-three entries; six Turnips, seventy-one entries; and so on through the vegetable classes in section 1. The task set the judges was by no means an enviable one.

The fruit exhibition doubtless suffered much alike in extent and quality from the unfavourable season. Here the Gooseberry and Apple occupy a corresponding place to the Potato among the vegetables. Almost every operative with a yard or two of ground aspires to the possession of a Gooseberry bush or an Apple tree—and there was a large display of the former in fine form, and for the season a fair one of Apples. Currants, especially red and black, were also fine, while following in diminished numbers and lowered quality. But superior fruits, such as Pears, Plums, Peaches, Nectarines, Apricots. Figs were generally conspicuous by their absence, to express it in general terms. Doubtless as knowledge grows, taste becomes more cultured, and a larger proportion of the profits of labour remains in the hands of the workers. All these superior fruits may become possible to the industrial classes. Few things would afford such a stimulus to horticulture or effect a more complete and wholly beneficial revolution in the homes and gardens of the working classes than such a wide extension of superior fruit culture as to bring it within reach of all who desire to share its pleasures or participate in its profits.

Flower culture seems to lag behind that of superior fruit among the operatives, not in numbers, perhaps, for in class 33, for six bunches of hardy annuals, there were forty entries; in that for six bunches of Stocks, thirty-two entries; for six Asters, thirty-five entries; a bunch of Sweet Peas, thirty-five entries; and six blooms of Roses, thirty-six entries, and others in proportion. Greater skill and more love, however, seemed to have been put into the Potatoes than into the Roses. Nor is this to be wondered at, for in the struggle for daily bread the stomach has to be satisfied with food before the eye is filled with beauty. The season, distance, inexperience, all told heavily against the exhibition of plants and flowers. Not a few of the exhibits had also suffered from the vicissitudes of transit. Taking an all-round view of the subject, the industrial flower show was a great experimental success, pointing the way to much higher results in the near future. It would be thrusting the cart before the horse with a vengeance to expect the pursuit of beauty to precede that of utility in the gardening of the masses; so let us have all things

in due order of evolution—thus: vegetables and fruits, flowers, and, finally, a due proportion and tasteful disposition of all. To have opened so many eyes to the perception of beauty—to have incited so many to desire it—is to have set forces in motion that will rest not from their labours till beauty everywhere, in workshop, factory, and mine, ennobles labour, and adds sweetness and restoration to rest. Compared with previous shows this one marked a decided advance, and should this great festival become an annual fixture, there is no doubt it will prove one of the most attractive of the kind held in the country. Great praise is due to the staff, and especially to Mr. W. G. HEAD, for the arrangement of such an enormous number of exhibits in so short a time.

THE BANYAN TREE (see Supplementary Sheet).

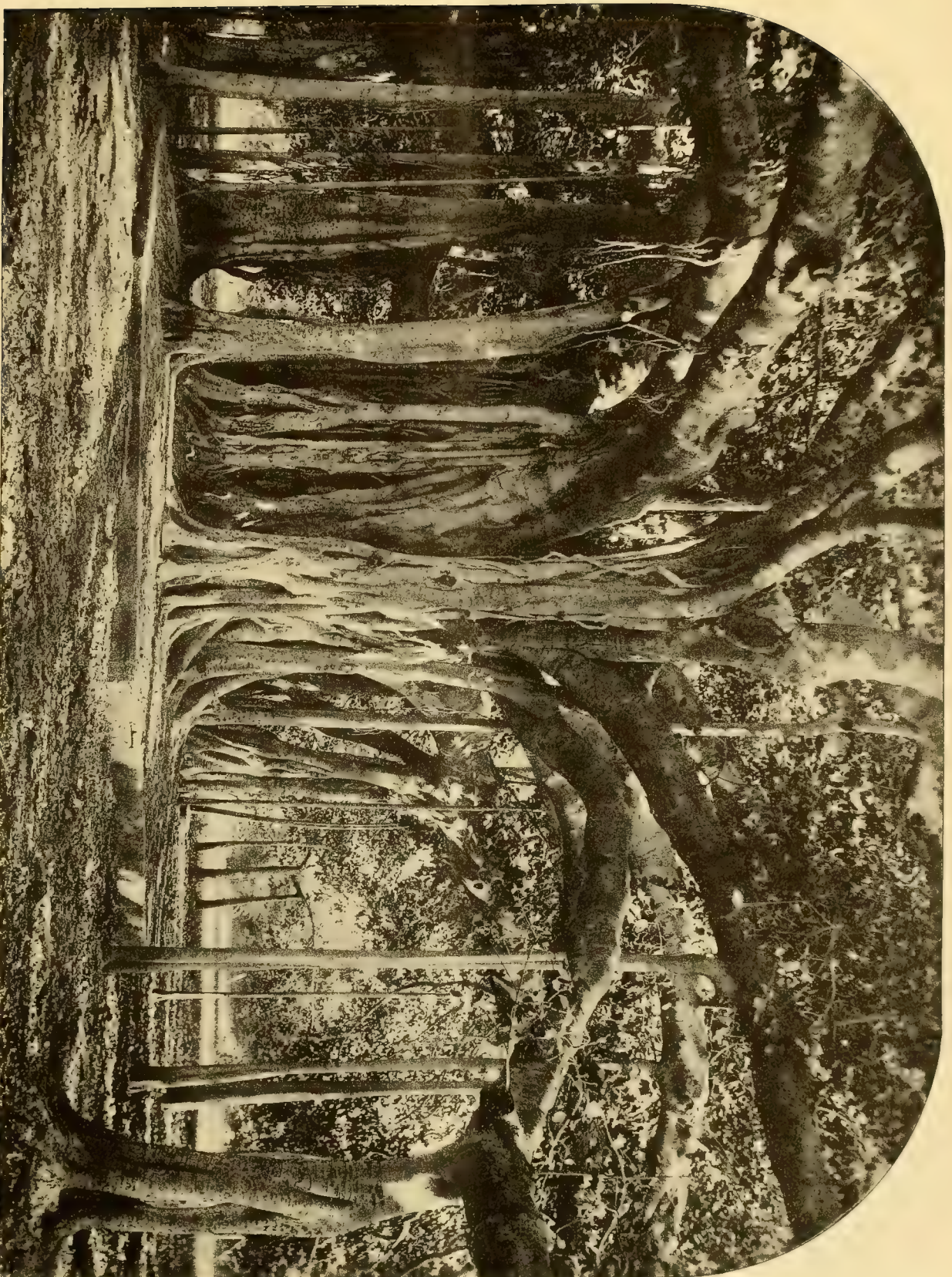
—The Banyan, with its spreading limbs supported by natural props, forms one of the most striking objects in Indian gardens, at least in the hotter parts of that country. Owing to its peculiar mode of growth the tree is rather to be looked on as an aggregate than as a single tree. The offshoots have successively occupied new territory, but they are still in federal union with the main trunk. Marvellous tales have been told of the area covered by these trees—the more marvellous because true. The imagination of MILTON was fired with what he heard of these trees, and his sonorous lines accord well with the majesty of the trees themselves. One of the largest was that in the Royal Gardens, Calcutta, figured in our columns in 1873, p. 1705, where an authentic account, including measurements, was written for us by the late Dr. GEORGE HENDERSON. Roughly, that tree, dating from 1782, covered 1½ acre of ground, but it has since been injured by cyclones. Our present illustration, which well shows the mode of growth of the tree, is from a photograph taken in the garden of Mr. WEIR at Madura, in Southern India.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

—The preparations for the Jubilee Exhibition of this Society, which will be held next June in Windsor Great Park under the presidency of the QUEEN, have already begun, as schedules have been issued for prizes for Hops, jams, and preserved fruits to be competed for at that meeting. The prizes for jams and preserved fruits are of especial interest in view of the fact that fruit growing is a rising national industry, and that the Windsor Exhibition of next year will probably be the first preserved fruit-show on record. There are two sets of prizes—one in which fruit-growers and associations of fruit growers are alone allowed to compete, and the other for manufacturers of jams who are not fruit growers. Classes will be made for jams, fruit jellies, bottled fruit, preserved fruit for dessert purposes, dried or evaporated fruits for cooking purposes, and fruit pulps. In each case the jams or fruits must be prepared exclusively from fruits grown in the United Kingdom in the year 1888. The entries close on December 1 for jams and preserved fruits.

OUR FIELD CROPS.—The acreage of land in Great Britain in 1888 under the following crops is, according to a paper sent us by the Agricultural Department of the Privy Council, as follows:—Wheat, 2,564,010; Barley, 2,085,474; Oats, 2,882,223; Potatoes, 590,123; Hops, 58,509; showing an increased percentage, as compared with 1887, of 10·6 per cent. in the case of Wheat, of 5·4 per cent. in the case of Potatoes. Oats show a decrease of 6·7 per cent. in the same period, and Hops of 8·2 per cent., while Barley remains about the same. In live stock the decrease is general in all classes, except pigs, which show an increase of 4·6 per cent.

NOXIOUS PLANTS.—Farmers in Bedfordshire are at present feeling considerable anxiety in consequence of several horses and other animals having died in a manner which suggests the belief that they



THE PHOTOGRAPH BY THE GARDENERS' CHRONICLE, AUGUST 25TH 1888.

BANYAN TREE IN THE GARDEN OF T. WEIR ESQ. MADURA.

have been poisoned through eating some noxious plant. Suspicion attached to a variety of Crowfoot, which, during the late rains, has largely increased in growth in boggy parts of the meadows. Several specimens of this plant were forwarded to the Botanical Secretary of the Bedfordshire Natural History Society (Mr. J. HAMSON), who has come to the conclusion that the plant which poisoned the animals is the lesser Spearwort (*Ranunculus flammula*), a very poisonous variety of Crowfoot. It is rather uncommon, but the wet season seems to have been favourable to its development.

THE GARDENERS' ORPHAN FUND.—The gardens at Ketton Hall, Stamford, were opened to the public in aid of the above on Monday, August 20, through the kindness of Mr. and Mrs. HOPWOOD. The day was not very promising, but there was a good attendance, and £3 17s. was taken for admission and 2s. 8½d. in collecting boxes, leaving a balance in favour of the Fund of £2 7s. 8½d. after paying expenses of printing and advertising.

APPLE AND PEAR SHOW.—The Devonshire Pomological Society has arranged for an Apple and Pear Exhibition to be held in Exeter on October 25 and 26 this year. Schedules are now ready, and can be obtained from the Honorary Secretary.

CONIFERS.—Last year the growth of most species of ornamental coniferous trees was much less than usual, owing to the drought and heat, which conduced to the early maturing of the wood. Many weakly trees perished on light dry soil. This year, on the contrary, the growth of shoots has been far in excess of ordinary years, and the heavy rains have contributed greatly to the unwanted health of the trees. We observed recently at Luton Hoo gardens some trees of *Araucaria imbricata* which were threatened with the loss of their lower branches, but which were rapidly recovering vigour, as was observed by the number of new shoots made, by means of surface soiling and heavy root waterings, aided by the rains of June and July. *Cedrus Deodara* severely pruned at the points of the leading branches were breaking densely into new growth, and that without any artificial assistance. By thus pruning the larger branches the damage done by heavy snowfall is greatly lessened, and the appearance of the trees as objects on a lawn much improved.

SALE OF DEVIZES CASTLE.—On Tuesday, August 21 Mr. EDWARD TEWSON (Messrs. DEBENHAM, TEWSON, FARMER & BRIDGEWATER) offered for sale, at the Auction Mart, by order of the executors of the late Mr. R. VALENTINE LEACH, the historical freehold estate of Devizes Castle and 120 acres of adjoining ground. Devizes Castles had certainly a unique record from its foundation by Bishop ROGER about 1107, down to the present day, having been in the occupation of eleven Queens of England, and having also in its time sustained an attack from the forces of CROMWELL. The biddings commenced with an offer of £4000, and did not advance beyond £8000, at which sum the estate was declared sold, Mr. TEWSON adding that the figure was not anything like the value of the property, or at all events, what it had cost the late owners.

CARNATION MRS. REYNOLDS HOLE.—This very beautiful new Carnation, introduced by Messrs. DICKSONS, of Chester, has been recently awarded a Silver Medal and Diploma at the Antwerp Royal Society of Horticulture and Agriculture.

DISA GRAMINIFOLIA.—Mr. BURBIDGE kindly sends us flowers of this pretty species grown at Straffan, Co. Kildare. Its pale blue flowers are arranged in loose racemes. The upper sepal forms a hood as in a Larkspur flower; the lateral sepals are much smaller and reflexed; the lateral petals are concealed within the hood, and seen from the side are like the head and neck of a swan. The projecting lip is elongate, spoon-shaped, slightly inverted at

the deeply fringed reddish-violet edges. The column does not fully coincide with BOLUS's description and figure in vol. xix. of the *Journal of the Linnean Society*, and the lip is deeply fringed. We must leave the Orchid experts to settle these discrepancies. The plant grows on the summit of Table Mountain, flowering in March. Its leaves are radical, linear.

THE GENUS PRIMULA.—Dr. FERDINAND PAX has published in ENGLER'S *Botanische Jahrbücher* a very elaborate monograph of the genus *Primula*, in which he deals with its history, morphology, anatomical structure, and geographical distribution. About 150 species are enumerated, grouped under several heads, the most important of which are the margins of the young leaves, involute, or revolute, as the case may be. Other characters are derived from the character of the inflorescence, the accrescent or unchanged calyx, the presence or absence of stolons, and the character of the foliage.

KNIPHOFIA.—In the garden of Mr. GUMBLETON, in Queenstown, there is a collection of over forty species of this fine genus, from the tiny *K. pallidiflora* from Madagascar, with grassy foliage and white Lily of the Valley-like flowers, to the stately *K. Northiana*.

CYPRIPEDIUM BELLATULUM.—M. GODEFROY states in the *Orchidophile* that the plant recently exhibited under this name is none other than the original *C. Godefroyæ*, and that there is a tendency to call the bad forms of *C. bellatulum*, *Godefroyæ*, while the good forms of *Godefroyæ* are called *bellatulum*.

LILIUM SPECIOSUM.—Mr. JENKINS sends us buds of two varieties of this Lily called respectively album *Kratzeri* and album novum. Several examples of both varieties expanded under glass on July 30. The two varieties seem practically identical, with the exception that the *Kratzeri* has rich orange-brown anthers, while the album novum has yellow anthers. We take the names as we find them, but deprecate the application of Latin names to such minor variations.

THE DOUGLAS FIR.—Baron VON TUBEUF has recently described a fungus in the shape of a species of *Botrytis*, which causes great disfigurement of the foliage and young shoots of the Douglas Fir.

CONIFEROUS PLANT SECRETIONS.—The secretion in Conifers is a resin mixed with an essential oil. MM. HECKEL and SCHLAGDENHAUFEN find an exception in the case of the *Araucaria*, which secrete not resin, or oleo-resin, but gum resin.

COLD STORAGE OF FRUIT.—Although for several years now meat, game, &c., has been successfully preserved by cold storage, or freezing, yet until the present time we believe that no organised effort has been made in this country to apply the same treatment to fruits. The Royal Horticultural Society, as announced in our last issue, has appointed a strong committee for the purpose of investigating the effects of refrigerating fruit with a view to its preservation, and also to conduct experiments as to the best mode of procedure, thus connecting itself with the commercial interests of horticulture. The Leadenhall Cold Storage Company, with whom the Society is working in these investigations, has commodious chambers below the market, and it is in these chambers that the subjects on trial will be deposited. On a recent visit to these stores we were enabled, by the courtesy of Mr. D. TALLERMAN, to inspect the system of working which is known as the "De la Vergne System," and consists of allowing anhydrous liquid ammonia under great pressure to enter into pipes from which the air has been exhausted; the ammonia expands and assumes a gaseous condition extracting heat from the pipes which are conducted round the chambers, they in their turn abstracting the heat from the air of the room; and so a very low

temperature may be maintained and regulated at will. One room had been cooled down to 38° F., another to 25°, and one even so low as 22°, in which condition it is found that the bodies of birds can be preserved for twelve months. It is not desirable that we should enter into detail concerning several samples of Cherries which were shown (and which had been in only ten days), as the methods are not yet tested, but appearances point to success. This will have a very important bearing on fruit growing, and on our fruit markets, for if Cherries, Strawberries, Plums, and other fruits can be preserved fresh till Christmastime, the fruit grower with a surplus stock can freeze those not required for present use; but it yet remains to be seen in what way this will affect prices.

ADELAIDE.—Dr. SCHOMBURGKE's Report on the Botanic Garden for the year 1887 is jubilant over the rainfall, which amounted to 25.7 inches instead of 14.4 during the previous year. The highest temperature in the shade for 1887 was 111° 2, in the sun 164°. Vegetation, both on the farm and in the garden, thrive under these auspices. The insect powder plant, *Pyrethrum cinerariæfolium*, does well in South Australia, and may become one of its by-products. The garden and its dependencies are in a highly satisfactory condition, and much appreciated by the public.

THE YORK GALA: RETIREMENT OF MR. JOHN WILSON.—Mr. WILSON, who for the long period of thirty years has so well filled the office of Secretary to the above, and to whose excellent management so much of the success attending the annual *fête* is due, has resigned that post, to the great regret of the supporters of this popular horticultural festival. Mr. WILSON has been officially connected with the *fête* from the very first, and he has held the secretaryship without intermission. That he will be greatly missed there will be no doubt, for his keen business tact, mastery of detail, and invariable courteous demeanour, inspired confidence alike among supporters and exhibitors. It will not be easy to find so capable a successor. Mr. WILSON is retiring altogether from the various offices of trust he has so long held in the city of York, and, let it be added, filled with such advantage to his fellow-citizens. It is his intention to reside for the future near London, and hearty good wishes from a very large circle of friends will follow him into his well-earned retirement.

NOVA SCOTIA APPLES.—We learn from the official report that Apple orchards are annually extending in the colony, the area occupied this year being:—In King's County 143, as against the average of 100 in preceding years; in Annapolis, 118. But, whilst these are the two principal counties in which fruit is raised for export, we find other counties making headway in orchard culture: Guysborough, 105; Digby, 107; Cumberland, 110; Colchester and Hants, 117; Yarmouth, 120; Pictou, 122. Antigonish, Cape Breton, Halifax, Inverness, Lunenburg, Queens and Victoria maintains the average. The Apple orchard area for the whole province seems from the returns to have increased almost 10 per cent. within the year. This year the Apple orchards blossomed abundantly, more so than usual, but there are complaints of want of setting attributable to the cold, dry season. The trees suffered also from caterpillars. There is prospect of fair fruit crops, however. The following percentages of probable yield of the leading market kinds are from the returns of the principal fruit districts of Annapolis and Kings Counties:—Gravenstein, 75 per cent. over 100, 125, over 100, 110; Yellow Belle-fleur, 75 per cent., 100; King of Tompkins, 75 per cent., 125, 65; R. I. Greening, 100 per cent., 100, 125; Ribston Pippin, 100 per cent., 100; Northern Spy, 60 per cent., 100; Vandevere, 60 per cent., 60; Golden Russet, 50 per cent., 90, 105; Nonpareil, 30 per cent., 40, 75, 105; Baldwin, 60 per cent., 125, 50.

THE APIARY.

THE question agitating many is whether it is profitable to keep bees, or to take arms against a sea of troubles (to wit a soaking summer), and by sulphuring end them—that, is, the bees. As the rain poured down pitilessly day after day I was led to these thoughts, but still I did not harbour them long, remembering that a season like the present seems to come about once in nine years; and though the eight intervening seasons are only about half of them of much account, yet, taking all things into account, bee-keeping is profitable if pursued industriously and intelligently; and he who knows how to transfer his accounts to the folio of a ledger will soon find that the balance keeps on the encouraging side of the said ledger.

After this preamble, and before proceeding, I must just say, "Feed, feed, feed!" If it does not pay to feed bees, it certainly does not pay to starve them, leaving humanity out of the question. A very pretty little glass section comes to me from Swanwick, Alfreton. It is made of glass everywhere, except that the pieces of glass are ingeniously fastened on little pieces of wood. The wood acts as a non-conductor, and so the greatest objection to glass supers—the loss of heat—is obviated. The foundation is cleverly fastened in, and the honeycomb, when completed in these sections, would look very nice at a show or on the dinner-table. Honey ought to fetch a good price this season. Of course the bees are getting in a little now, but in my own apiary the bees will require it themselves, and it will be fortunate if they get enough for themselves. However, I am thankful that my hives are not to be seen floating down a river, as some people's haycocks were a little while ago. It is always a good thing to let the bees have a nice quiet time before winter sets in, and as the bees are now getting in a little it would be advisable to let them alone while the weather is fairly warm, say, till the end of August. But after that matters had better not be delayed, and hives must be examined to see, first, if the queen is all right; and second, if they have enough to eat. They ought, at least, to have 20 lb. of sealed honey, and 25 lb. is not too much of a stretch of generosity. I hear Mr. Hooker has brought out a new work on bees. It has not yet found its way to my study table, but when it does I shall read, mark, and learn it, as I know he is a beekeeper of great experience. *Bee.*

ENTOMOLOGY.

THE DEVIL'S COACH-HORSE, OR FETID ROVE BEETLE.

In the *Gardeners' Chronicle* for November 5, 1842, was published an article by Mr. Curtis ("Ruricola") on an insect which is commonly known by the first of these well-known names, whilst the writer preferred to give it the second name quoted above, accompanied by a very characteristic woodcut, which we here reproduce (fig. 26, lower portion). It is scientifically known as *Ocytus* or *Goerius olens*, and is by no means a rare insect, and deserves, notwithstanding its savage appearance, protection by the gardener, instead of its ordinary fate of being trodden upon and destroyed when found running about the garden walks, or when turned up by the spade. Its jet-black colour, bold appearance when showing its pugnacious character, raised upon its outstretched legs, with its sickle-shaped jaws widely opened, and its tail turned upwards over its back, terminated by two small white tubercles, which it protrudes, adding to its curious demeanour, which are omitted in the figure given by "Ruricola." The outline figure on the lower right side of the woodcut (fig. 26) represents the under side of the head of the insect, armed on each side with a strong bristle (2). The strong horny jaws or mandibles are represented at 3, the feelers or palpi of the lower jaws and lower lip are shown at 4, and the antennae

at 5. Gødartius figured one of these insects, and gave two very characteristic figures of the larvæ, noticing in his quaint style the voracity of both. Swammerdam also mentions the *Staphylinus* (to which Linnean genus the insect belongs), adding that it seems to be of a middle nature between the beetle and the *Scolopendra*, and it can very quickly kill earthworms with its teeth, and afterwards suck them.

At the end of last June we received a note from a correspondent respecting a centipede-like insect 1 inch or so long, which attacked a worm 4 or 5 inches long, tearing it so that it speedily died. The description given of the insect satisfactorily showed it to be the larva of the *Goerius olens*, being about 1-6th or 1-8th of an inch thick towards the head, and tapering to the tail, being about 1½ inch long.

In the accompanying woodcut (fig. 26) we have represented the larva of the *Goerius olens* of the natural size, the small detached figure showing the position of the groups of eyelets (ocelli), of which there are two, each containing four small ones. The middle figure represents the under side of the head of the larvæ, given in order to show the comparison of the parts of the mouth with those of the perfect beetle represented by "Ruricola." The mandibles (A) are very sharp at the tips, the inner edge wanting the horny small teeth of the imago; the palpi of the lower jaws (c) arise from an elongated basal piece, which is attached by means of several pieces soldered to the under side of the skull, whilst the lower lip (b) is composed of several pieces, and is terminated by a slender porrected point, with two short lateral palpi arising from a dilated piece or labium. The antennae are shown at n, and one is entirely detached, and represented on the upper left-hand side of the woodcut. The body of the larva is long, and gradually decreases in width to the extremity; it is comparatively soft and fleshy, and clothed with numerous fine hairs. It is terminated by a short deflexed tubular joint, which serves as a seventh leg, and which is defended at the sides by two long slender setose two-jointed filaments, as shown in the right-hand figure. Although this larva is as voracious it is by no means so ferocious-looking as the perfect insect.

"Ruricola" describes the habit of the perfect insect, especially noticing that one which he had placed under a tumbler killed and had eaten six earwigs in an hour and a half. *I. O. W.*

FORESTRY.

PLANTING PREPARATIONS.—During the month of August, when but few special operations demand the attention of the forester, every effort should be made to push forward the preparations of land to be planted during the autumn and winter, attention to drainage taking the precedence of other operations, this being followed up by fencing and pitting. Upon clay soils summer and autumn operation are most beneficial, but the amount of good connected with such timely work, even on light sandy land, is everywhere discernible. Pitting at least should never, unless under very peculiar circumstances, be delayed until the planting season, for the ameliorating effects of frost, sun, heat, and air leave the generality of soils in the best condition for planting.

The Nursery.—A sharp outlook must now be kept on Coniferous trees for insects and their larvæ. Usually about this time these pests begin their depredations, and, what is most provoking, they usually choose the leading shoots for their boring operations. Few Conifers come amiss to these boring beetles, even the Corsican Pine, which was once considered to be insect-proof, being destroyed in large numbers in plantations where they are freely mixed up with Scotch, Austrian, and Weymouth Pines.

Recently grafted trees should be examined, and the ties slackened, or wholly removed, as may be found necessary. Remove all superfluous twigs from the stems of young hardwoods, and buds and shoots from the stocks of grafted trees and shrubs. I have found it necessary to lighten the heads of many hardwood trees during the present season, their growth being out of all proportion to the size of the stems. To young and recently planted specimens we are now directly referring.

Ornamental Trees.—Park trees will require attention to see that broken branches are cut off and removed, as well as such as have been browsed by stock, are trimmed up neatly. *A. D. Webster, Holwood, Bromley.*

FRUITS UNDER GLASS.

PEACHES.—Assuming that growth on the trees in the early house has ceased for some time, the wood is hard and brown, and the buds plump, let no time be lost in removing all superfluous growth, and placing the bearing wood under the best conditions for getting thorough exposure to the sun. Syringe the trees heavily every afternoon, and see that the state of the soil is right as regards moisture. Where heavy syringing is going on, the border often appears to be wet on the surface, while the soil about the roots is in a too dry condition.

Succession Houses.—Trees from which the fruits are cleared must have every attention, especially in such a cold sunless season as the present. Remove every shoot which is not required, and let the fruiting wood of next year be trained thinly over the trellises. Six to 8 inches is not too far apart if the length of the foliage be taken into consideration, which on healthy trees will run to 8 in length. If the wood be still green and sappy, a little heat in the apparatus will do much to thoroughly mature it. Syringe daily to keep red-spider in check, and attend to the watering of the borders. Where the trees are aged, weak manure-water will be of benefit.

Late Houses.—In the absence of sun-heat, it will be advantageous to afford a little fire-heat, making the pipes merely warm, and afford abundance of air. Where the fruits are colouring, the trees should not have any water at the roots, and syringing should be discontinued. Late Peach trees swelling their fruit will also be benefited by artificial warmth, as the thermometer sinks sometimes to 39° during the night; fully expose the fruit, and keep the young shoots closely tied in. Syringe on all favourable occasions, except during cold days, especially if the house be unheated. A cool and moist condition of the air in a house favours the appearance of mildew.

Figs.—The earliest trees for forcing next season should now be in a forward state of maturity; therefore give every attention to watering and syringing the plants until the foliage falls naturally. The trees, when the wood is matured, may be stood out-of-doors in a sunny sheltered situation, until the first appearance of frost, keeping them clear of the ground by placing a brick under each corner of the tub. To succession trees maturing their second crop of fruit, weak stimulants may be afforded; the syringe must not be too freely used or the fruit will be liable to split prematurely. Maintain a good circulation of warm air in the house. Remove all weak useless growth, also any fruits which show upon the shoots. *W. M. Bailie, Luton Hoo Gardens.*

THE KITCHEN GARDEN.

CAULIFLOWERS.—Seed should now be sown on a warm border, the young plants to be removed later to handlights and cold frames to stand the winter. Most gardeners are anxious to have Cauliflowers ready in spring as soon as the Broccolis are over. In doing this I find no difficulty when I grow Gilbert's Victoria Broccoli for the latest successional variety, with Early London Cauliflower to succeed this. As a later crop it is well to employ the variety called Asiatic Cauliflower. Autumn Giant (sown now) will succeed this one, but in some seasons it is very apt to go blind in the spring after planting out: in others it produces capital heads. To follow this Eclipse and Autumn Giant, both sown in spring, carry on the season until Veitch's Self-protecting Autumn Broccoli is ready, which is followed in due course by the varieties recommended in previous numbers.

Lettuces.—The main supply for early spring use should now be sown, and for this purpose none are so good as the old Bath or Brown Cos for use in private gardens. Some market growers and others object to the colour of this variety, and prefer Hick's Hardy White. It is well to sow a little of Paris Market or Perfect Gem Cabbage Lettuce at the same time as the above. They are often ready for use much earlier in the spring, and also take up

only a very small space; it is best to sow on a south border, as the plants left in the seed bed will often survive the winter, and be found very useful for filling up vacancies.

Early Potatoes.—The Potato disease is spreading among these, and any Ashleaves that are now undug should be taken up on a dry day, and after being dried should be stored in small lots in a cool place, covering them so as to exclude the light. Tubers kept for planting should be spread out thinly in a dry and well ventilated frost-proof shed. *W. H. Divers, Ketton Hall, Stamford.*

HOME CORRESPONDENCE.

GRAPES IN BAD CONDITION.—I send for your inspection a bunch of Muscat of Alexandria and one of Madresfield Court Grapes. Since I took charge three years ago the Vines have been very much subject to both shanking and scalding. Two years ago I determined to see what the border was like, so I took away the old soil down to about $2\frac{1}{2}$ feet, when I came to a few roots in a very unsatisfactory condition, having entered into a sour ungenial soil. Before beginning at the border I had ready a suitable compost of good turfy loam, well-decayed manure, and lime rubbish, and having got down below most of the roots, I bedded in this material, and gave the Vines a good mulching of well-decayed manure. The inside border being served in the same way, they were started very gently on March 1, came away very slowly, and made sickly growth, showed few bunches at the colouring stage, and shanked very badly. Seeing the old canes were to be a failure, I encouraged young ones from the bottom of each Vine, which made excellent growth to the top of the house. At pruning time they were cut down to within $3\frac{1}{2}$ feet from the bottom. Previous to starting last spring I made an examination of the border outside, and found it full of healthy young roots, and giving it a good mulching I proceeded to the inside border, and found it in the same condition; having given it a good top-dressing I left both, thinking they were all right. They were started at the same time as they had been the previous season. The old Vines made sickly growth as usual, but the young ones made luxuriant growth as they had done the previous season. The old canes never showed a bunch, but the young Vines produced excellent bunches, but set badly, the temperature at the time being kept from 70° — 72° , with a little air on night and day; since then the glass has never been much below 70° , with plenty of air on all favourable occasions. Now, seeing that the young Vines are making such fine growth, and yet shank fully as badly as did the old Vines, I fail to understand the reason. The old Vines will be cut away next spring, to be replaced by the young canes. They were at first planted at $3\frac{1}{2}$ feet apart, but by the introduction of the young Vines are only the half of that distance now. As regards Madresfield Court, for two years back the leaves have assumed the same colour as represented, and always about the same time (colouring stage), and the bunches never ripen any further; this year the young canes show the same tendency. As to watering, the outside border has been watered three times during the season, each time every Vine got 144 gallons of water, the inside border rather more than that, and liquid manure was also given. Now I think I have explained matters as well as I can. I shall be much obliged if any reader can give any light on the subject. Of course it is too late to do anything for this season to prevent the malady. Shall I clear out the border right to the bottom, or shall I wait for another season and give them an extra supply of water? I know the outside border gets dry very quickly, as it stands on rather high ground. *J. C.*

THE CATALPA.—Commenting on the above (p. 198) your correspondent John Colebrook says:—"I have not seen more than half-a-dozen of these trees in England during the last twenty years." If he will take a walk from Blackfriars Bridge westward he will be able to feast his eye on many of his favourites, some of which are doing remarkable well. In a corner of the Temple Gardens will be found one of the finest in London, at present covered with bloom-buds just bursting into flower. Further on, the Embankment Gardens (opposite the National Liberal Club) can boast of several, and on reaching the Palace Yard a row of half-a-dozen will gladden his eyes, looking beautifully green and cool with no

other tree for contrast; then onwards, to Battersea Park, where, planted in the border that has the river for its front, many will be found, giving one the impression that in the race for life the Catalpa will have to give way to its stronger brethren. *G. B.* [The Catalpa is an excellent, town tree, difficult to kill. *Ed.*]

MINA LOBATA AS A CONSERVATORY PLANT.—This pretty trailing half-hardy annual, which flowers very freely in quite a small state, may be grown in pots for conservatory decoration during the summer months, and is a welcome addition in variety at this time of year. From seeds sown early in March we now have plants, in pots varying from 5 inches to 10 inch sizes, flowering freely. Good turfy loam and one-third leaf-mould suits them well, and grown in pots of the above sizes, with one centre stake, or three round (the sides of the pots, the plants carelessly tied, they make a variety among flowering plants. The flowers are produced on double racemes, standing erect and well out of the dark green foliage. The buds are of a reddish-orange colour, and yellowish-white when expanded. The flowers open in succession from the base of the raceme, and have a pretty appearance, also lasting well in water when



FIG. 26.—STAPHYLINUS. DEVIL'S COACH HORSE, LARVA AND PERFECT INSECT.

cut. The plant is also adapted for covering bare walls, &c., growing quickly and flowering freely in a warm position. *C. Herrin.*

ASTERS AT CHISWICK.—Admirers of the annual Aster generally, and the Royal Horticultural Society in particular, are indebted to various seedsmen for a large and most interesting trial of this very beautiful autumn flower, which is just now about at its best at Chiswick. The trial is specially rich in dwarf kinds, and still further is evidenced the wondrous wealth of variety in Asters—so much so, in fact, as to be like to so many other favourite flowers, almost bewildering. Happily the trial opens an effective way out of the perplexity, because it shows quite as literally what sorts to avoid as what to select; and assuming that those interested can always obtain true to character the kinds selected, they will have great cause to rejoice that such a favourable chance to assist in the survival of the fittest was presented. Whilst we see in the collection of Asters some sorts so beautiful as well as true that they command our warmest admiration; we may also well wonder why

the Continental growers should trouble to select and put into commerce many others, pretty enough perhaps alone, but which look poor indeed when compared with the finer or more beautiful forms close by. The exceeding variety of dwarf Asters, which may here be seen, should attract the grower of these flowers for market purpose, as many of the newer forms are so even in character, and so beautiful as to merits wide cultivation. It is very pleasant indeed to find that, while Chiswick seems to be so indifferently regarded by the authorities, yet it is doing such useful and instructive work. All who may journey to the gardens to see the Asters as well as the Tomatos, will be amply repaid for their trouble. *A.*

THE HEDGEHOG'S CRY (p. 189).—"It has been remarked that when the feet of the animal are pinched it usually utters a shrill scream. But the barbarity of anatomists has proved that hedgehogs may even be dissected alive without their emitting any sounds of distress whatever" (Bingley's *British Quadrupeds*, 1809, p. 238). *H. Ellacombe.*

—Two years last December while trimming hedges we found in a nest of leaves and rubbish a female hedgehog with five little ones. It being very frosty I had them put in the kitchen, and the children made great pets of them. They were fed on milk and were wonderfully lively and tame. They all, but chiefly the little ones, whistled a great deal at all times but mostly at night, a long-drawn whistle something like a guinea-pig's but much more intense. One day the old mother disappeared and the little ones died one after the other in spite of all the care bestowed on them. Some weeks after some boys in my employment while lighting a fire in a bunching-room, which is not very far from the kitchen, were startled by some unearthly cry—like a child's cry, as they all expressed themselves—from down the chimney, and presently down came the lost old hedgehog all ablaze. They put her in a pail of cold water to extinguish the burning bristles, and I had her put in the barn afterwards, as she did not seem to be any the worse for the accident but very anxious to escape from further petting and confinement. So it seems our friend the hedgehog is not only efficient in whistling, but can give vent to its feelings in a peculiar manner when in extreme pain. *G. Wernig.*

—Whatever White, of Selbourne, or Bell, or other naturalists have or have not done, Shakespeare—with whom my namesake, Dick Burbidge, was familiar as a friend—certainly alludes to the hedgehog's cry. It is in "*The Tragedie of Macbeth, actus quartus, scena prima.*" Thunder. Enter the Three Witches." (First folio edition.)—

- "1. Thrice the brinded cat hath mew'd.
2. Thrice and once the hedge-pigge whin'd."

These pretty and harmless little animals are very abundant in the Midland Counties, and are there often called "urchins," also a not uncommon name for a mischief-loving boy. Elves and fairies were also supposed to appear in the form of urchins or hedgehogs, and Shakespeare's allusions to the animal (for he has one other at least) must be read in this light. The hedgehog is reputed to be excellent food, something like young rabbit, and as a boy I often heard legends of the gipsies cooking them by rolling the animal, skin and all, in clay, and then baking them in the ashes of their camp fires. *F. W. Burbidge.* [Every one cites this legend. We suspect it to be as factitious as the alleged barbarity of the anatomist and the silence of the urchin under such circumstances. *Ed.*]

THE POTATO CROP REPORTS.—I quite concur with your correspondent "A. D.," viz., that these reports are made out fully a fortnight or three weeks too early. Up to August 6 never do I remember seeing the Potato-tops look better or more promising for a good yield, while in less than a week from that date there was not a top that was not blackened by the fatal disease. I found the first signs of disease on July 30. The disease spread very slowly from that date up to August 6, when the weather became much warmer, and then it propagated itself with great rapidity; and now (August 20) every Potato plot in gardens and fields in this neighbourhood is infected—indeed, much of the haulm on smaller patches has been cut off and taken away. The American varieties have suffered the worst. If Mr. Jensen's theory be correct, viz., that the rain washes the spores through the soil to the tubers, we should have but very few diseased tubers (where the haulm has been cleared

away), as we have had no rain since the *Peronospora* began to spread so fast. From my own observations, and the experiments I have made and am making, I am inclined to think that Mr. Jensen is right. If he is not, the question might well be asked, Do the tubers become as much affected during dry weather (providing there is the same amount of disease on the haulm) as they do when there is sufficient rain to wash the disease spores to the tubers? J. H.

THE WEATHER.—We are having a very cold summer in this part. On August 15 the thermometer registered 32° on the grass; the minimum in the screen close by at 4½ feet above the surface of the ground was 37°. Since that date a very cold N.E. wind has prevailed, which makes the temperature feel more like that of February than August. Harvest has begun in this part (August 18), and crops will be good in quantity if the weather remain favourable. Late Potatoes look remarkably well, and are at present free from disease, but not so the early and second early varieties. Some of the Apples and Pears grow very slowly and require warm, dry weather. W. H. Divers, *Ketton Hall, Stamford.*

—As a proof of the prevailing low temperature, I may mention that on the 19th inst., our thermometer at 3 feet from the ground registered 1° of frost. Y. Y. Bowie, *Weeting Hall, Brandon, Norfolk.*

SOCIETIES.

READING HORTICULTURAL.

AUGUST 15.—This was one of the best exhibitions held at Reading for some years, and it took place, as usual, in the Abbey Gardens.

Stove and Greenhouse Plants.—The best collection of nine kinds came from Mr. J. F. Mould, nurseryman, Devizes, who had fresh examples of *Gloriosa superba*, *Clerodendron Balfourianum*, *Erica retorta* major, *E. Irbyana*, *Allamanda Hendersoni*, &c. Mr. James, nurseryman, Lower Norwood, would have been 2nd, but owing to his not observing one of the requirements of the schedule, by staging three *Ericas*, he was disqualified; but he was awarded an extra prize nearly equal to the amount of the 2nd prize. Mr. Mould had the best flowered specimen, staging a good piece of *Erica oblonga* purpurea; Mr. Bright, gr. to R. Karlslake, Esq., White Knights, being 2nd, with a fine specimen *Fuchsia*.

The best new or rare plant was a good one of *Schubertia grandiflora*, shown by Mr. Woolford, gr. to A. Palmer, Esq., Reading; Mr. Dockerill, gr. to G. W. Palmer, Esq., Reading, being 2nd, with a well grown and coloured *Dracena Lindenii*.

Miscellaneous Flowering Plants.—The best group of six *Achimenes* came from Mr. House, gr. to J. O. Taylor, Esq., Reading. Mr. Bright had the best four *Fuchsias*, staging freely grown and flowered pyramidal specimens. Some very good *Cockscombs* came from Mr. Bowerman, gr. to C. Hoare, Esq., Hackwood Park.

Bedding Pelargoniums were well shown by Mr. Woolford; Mr. Bright being a good 2nd. Mr. Woolford also had some admirable examples of tuberous-rooted *Begonias*, grandly grown and carrying blooms of high quality. They promise to become exhibition plants of the future. Mr. Dockerill was well up for 2nd place.

Groups arranged for effect.—Since exhibitions at Reading have followed the semicircular instead of the oblong form, the groups have decidedly improved in appearance. Mr. J. James was 1st with a very tasteful arrangement; Mr. G. Phippen, nurseryman, Reading, was 2nd.

Foliage Plants.—The best six, and a very good lot too, came from Mr. Curry, gr. to Colonel Pepper, Salisbury, who had *Crotons*, *Countess*, *Queen Victoria*, and *Weismanni*. *Kentia australis*, *K. Fosteriana*, and *Latania borbonica*; 2nd, Mr. Howe, The Gardens, Bereham Park, Newbury, who had a very good lot also, consisting of *Alocasia macrorrhiza variegata*, *A. Thibautiana*, very fine; *Latania borbonica*, *Phyllanthus Lindenii*, *Croton Reiffautianus*, and *Anthurium crystallinum*.

Mr. Howe had the best three Palms, having well grown and even specimens of *Phoenixophorum sechellarum*, *Areca Verschaffeltii*, and *Kentia Fosteriana*; 2nd, Mr. James, who had a fine piece of *Kentia Lindenii*.

Ferns.—The best six stove and greenhouse Ferns came from Mr. Dockerill, who had *Dicksonia antarctica*, *Leucostegia immersa*, *Alsophila australis*,

Microlepia hirta cristata, *Adiantum Farleyense*, and *Nephrolepis exaltata*.

Cut Flowers.—Roses were a leading feature. The best eighteen came from Messrs. Perkins & Son, nurserymen, Coventry, a very nice fresh lot; Messrs. J. Cheal & Sons, nurserymen, Crawley, being 2nd. Mr. T. Turton, gr. to J. Hargreaves, Esq., Marden Erleigh had the best twelve.

The best six blooms of any one Rose was Paul Jamain, from Messrs. Perkins & Son, Coventry; Mr. J. Walker, Thame, coming 2nd, with Marie Verdier.

Mr. John Walker, Thame, had the best eighteen Dahlias, a very good lot of blooms for the season. Mr. Walker also had the best twelve. Messrs. J. Cheal & Son were 1st with twelve bunches of single Dahlias, and they were the leading features of the show—set up in bunches of ten blooms each of twelve varieties, on Messrs. Cheal & Son's registered wire frame, which displays the bloom to the best advantage.

Mr. Walker was 1st, with German and French Asters, showing very good blooms for the season.

The class for eighteen bunches of cut flowers brought a very fine lot indeed from Mr. Phippen, large bunches of such things as *Tuberose*, *Lapageria rosea*, *Yucca gloriosa*, *Harpalum rigidum*, *Lilium auratum*, *Hydrangea paniculata*, &c. In the class for six bunches there was a very keen competition. Mr. Durman, gr. to J. W. Workman, Esq., Reading, was 1st.

First-class Certificates of Merit were awarded to Mr. Charles Turner, Royal Nursery, Slough, for yellow ground *Picotees*, *Agnes Chambers*, *Almira*, *Annie Douglas*, *Colonial Beauty*, *Dorothy*, and *Terra Cotta*; and to Messrs. J. Cheal & Son, for single *Dahlia Victoria*, white, with side margins of bright scarlet, a charming and distinct variety.

Table Decorations.—These are always extremely well done at Reading, although the prizes are small. Miss Phillips, a constant exhibitor was 1st, with three pieces arranged with excellent taste.

Miscellaneous Contributions.—Messrs. Veitch & Sons, Exotic Nurseries, supplied a valuable contribution in the way of ten boxes of cut *Roses*; and Messrs. C. Henwood, C. Phillips, and Mr. L. Walker exhibited each a dozen *Carnations* and the same number of *Picotees*, with which they had taken honours at Oxford the day previous. Mr. Baskett had six large pot Vines, grown and fruited in an admirable manner. Messrs. Perkins & Son also had boxes of cut *Roses*.

Fruit.—This was not up to the usual mark at Reading, either in quality or quantity. There was but one collection of eight dishes of fruit, which came from Mr. Goodman, gr. to C. Hammersley, Esq., Bourne End; this consisted of Black Hamburgh and Muscat of Alexandria Grapes, *Bellegarde Peaches*, *Lord Napier Nectarines*, *Hemskirk Apricots*, *Kirke's Plum*, *Figs* and *Melons*. It was also awarded the special prize offered by Messrs. Oakshott & Millard for the best collection of fruit in the show. Mr. Maher, gr. to A. Waterhouse, Esq., Yattendon, had the best six dishes. The best three bunches of Black Hamburgh Grapes came from Mr. Osman, gr. to T. Baker, Esq., Ottershaw Park; Mr. Waite, Glenhurst, Esher, being 2nd. Mr. Maher also had the best three bunches of white Muscats, Mr. Ashby, gr. to Mr. Farning, Whitchurch, being 2nd. Mr. Maher was 1st with any other white, staging very good *Buckland Sweetwater*; Mr. N. Kneller, The Gardens, Malshanger Basingstoke, being 2nd with the same. The best dish of *Peaches* was the *Nectarine Peach* from Mr. Pound, gr. to G. May, Esq., Reading; Mr. Mortimer coming 2nd with *Late Admirable*. The best dish of *Nectarines* was *Lord Napier*, from Mr. Goodman; and Mr. Bowerman, of Hackwood Park, coming 2nd with *Humboldt*. *Apricots* were poor, *Figs* fairly good. The best three dishes of *Plums* came from Mr. Goodman, who had *Oulin's Golden Gage*, *Yellow Imperatrice*, and *Kirke's*. The other collections were disqualified, one variety doing duty for two dishes in each case. *Apples*, *dessert* and *culinary*, and *Pears*, *dessert* and *stewing*, were poor.

Vegetables.—These were a great feature, and their high quality commanded general admiration, the competition being very keen in all the classes, and the collections covered a great breadth of tabling.

Special Prizes.—Messrs. Sutton & Sons, Reading, offered prizes for the best collection of six varieties of vegetables, to include certain of their novelties, and here Mr. N. Kneller, gr. to W. S. Portal, Esq., Malshanger Park, Basingstoke, was 1st, with a superb lot, consisting of *Snowdrop Potatoes*, *Onions*,

Perfection Tomatoes, *New Red Intermediate Carrot*, *Peas*, and *Cauliflowers*; 2nd, Mr. Waite, gr. to the Hon. Colonel Talbot, Esher, with *Satisfaction Potatoes*, *Duke of Albany Peas*, *White Leviathan Onions*, &c. This firm also offered special prizes in two classes for Potatoes; in one of these—that for a dish each of seven specified varieties—Mr. Holt, gr. to Major Allfrey, Wokefield Park, was a good 1st, with very fine examples of *Early White Kidney*, *Sutton's Seedling*, *Early Market*, *Satisfaction*, *Best of All*, *Masterpiece*, and *Abundance*; 2nd, Mr. Pope, gr. to the Earl of Carnarvon, Highclere, with a very good collection also. In the class for nine varieties selected from certain specified sorts, Mr. Pope was 1st, with very fine examples of *Lady Truscott*, *Reading Russet*, *Early Regent*, *Satisfaction*, *First and Best*, *Prizetaker*, *Woodstock Kidney*, *Reading Ruby*, and *Abundance*; 2nd, Mr. Stott—a remarkably good 2nd, *Woodstock Kidney*, *Satisfaction*, and *Reading Russet* being remarkably fine.

Messrs. Carter & Co., Holborn, also offered prizes for nine dishes of vegetables. Mr. W. H. Kingsmill, Sydminster Court, Newbury (gr. to R. Lye), being 1st, and Mr. Beckett, Cold Ash, Amersham, 2nd. The vegetables were very fine in this class, but owing to an oversight particulars cannot be furnished.

Mr. C. Fidler, seedsman, Reading, offered prizes for six dishes of Potatoes, Mr. Pope being 1st with a fine lot, consisting of *Reading Giant*, *Clipper*, *Reading Ruby*, *Early Gem*, *Prizetaker*, and *Snowdrop*; 2nd, Mr. Beckett, with *Early Gem*, *Beauty of Hebron*, *Clipper*, *Edgemoor Purple*, *Fidler's Prolific*, and *Blanchard*. Mr. Fidler's prizes for six dishes of vegetables were won by Mr. Pope, who was 1st, and Mr. Beckett, 2nd. Messrs. Webb & Sons, seedsman, Stourbridge, also offered prizes for six dishes of vegetables, Mr. Pope being 1st, and Mr. Waite, Glenhurst, Surrey, 2nd.

MAIDENHEAD HORTICULTURAL.

The tenth annual show of the Maidenhead Horticultural Society was held on the 16th inst. in the pretty and appropriate grounds of Ray Lodge, and resulted in a very fine display of garden produce. Specimen plants were not largely represented, but groups for effect and smaller plants were staged in fine condition. Miscellaneous exhibits of a non-competitive nature helped very much to brighten and fill up the two large marquees; several handsome collections of cut flowers and plants being contributed by various nurserymen and seedsmen. Vegetables were staged in good condition, and the competition was strong; Potatoes made quite an imposing display, although traces of disease were apparent in a few tubers.

Plants.—The first-class—that for eighteen foliage plants—was not strongly contested, two collections only being staged in which Mr. T. Lockie, gr. to G. O. Fitzgerald, Esq., Oakley Court, Windsor, was a very easy 1st, with a clean and well-coloured lot of half-specimens, including *Crotons* *Queen Victoria* and *Weismanni*, *Kentia Fosteriana*, *Dracena Shepherdii*, and *Asparagus plumosus*.

For six stove and greenhouse plants, half to be in flower, Mr. J. F. Mould, nurseryman, Pewsey, Wilts, was 1st with *Kentia Fosteriana*, *Cycas revoluta*, *Allamanda Hendersoni*, and *Erica Irbyana* among his best plants; 2nd, Mr. Aitken, gr. to Mrs. Meeking, Richings Park, Slough, who staged a fine *Kentia australis*, and *Croton Johannis*.

For a single specimen flowering plant, Mr. J. Hanch, gr. to J. P. Weatherby, Esq., Melworth Lodge, Cookham, gained the leading position with a large and profusely bloomed *Eucharis amazonica*; Mr. Aitken 2nd, with *Allamanda Schottii*.

In a similar class for a foliage plant the competition was keen, and some good plants were staged. Mr. Aitken was awarded 1st with a large, but not highly coloured *Croton Queen Victoria*; 2nd, Mr. Lockie, with a fine *Kentia Fosteriana*.

For six stove and greenhouse Ferns, 1st, Mr. Aitken, with a good even lot, including a very fine *Gymnogramma peruvianum argophyllum* and *Goniophlebium subauriculatum*.

Some good *Fuchsias* were staged in the class for six by Mr. Hopkins, gr. to J. W. Burrows, Esq., The Elms, Cookham, the plants being pyramidal in shape and 6 feet high, but wanting a few more days to open; 2nd, Mr. Manley.

For six tuberous-rooted *Begonias*, 1st, Mr. Goodman, gr. to C. Hammersley, Esq., Abney House, Bourne End, with large and well-grown plants of old varieties.

Very fine *Cockscombs* were shown by several exhibitors.

bitors, Mr. Lockie coming 1st, Mr. C. Maskell, gr. to S. Young, Esq., Maidenhead, 2nd.

Mr. Aitken staged six grandly flowered large zonal Pelargoniums, noticeable being Queen of the Whites, Lelia, and F. von Raspail.

The competition was extremely keen for six Coleus, although all were more or less deficient in colour. Mr. D. Paxton gr. to the Hon. C. S. Lyby, Hitcham Grange, Taplow, was 1st, with nice pyramidal plants; and Mr. Hopkins 2nd.

Groups of plants arranged for effect formed one of the leading features of the show, more especially those of the largest size which were required to fill a space of 12 feet by 10 feet on low staging. Here Mr. Aitken had arranged a beautiful group of plants in his best style, all the plants being fresh and in fine condition. In the centre, the pot slightly elevated, was a nice Cocos Weddelliana; the ground-work consisted of Maidenhair Ferns and Gloxinias, and covered the central pot, thus forming a mound. Out of the groundwork rose nicely arranged highly coloured Crotons and Dracenas, Tuberoses, Francoa ramosa, Gladiolus, Hyacinthus candicans, Eulalia, &c., the whole forming an admired group—one of the best we have yet seen, and was deservedly awarded 1st position.

For twelve Roses, Mr. J. Walker, nurseryman, Thame, was 1st with very fine blooms, especially those of Her Majesty, Marie Verdier, Merveille de Lyon, and Marie Bauman; 2nd, Mr. Hughes.

Mr. Walker also staged the best twelve Dahlias. Asters in variety, double and single, Zinnias, &c., were shown in quantity, the principal prizewinners being Messrs. Walker, Hughes, and Hatt.

Fruit.—This was shown in considerable quantity, but white Grapes were generally unripe. In the leading class for six dishes, Mr. Aitken was 1st with good Black Hamburgh and unripe Muscat Grapes, Queen Pine, a small fruit of Hero of Locking Melon, Pine-apple Nectarine, and poor Royal George Peaches; Mr. Goodman was a close 2nd, staging fair black and white Grapes, and fine dishes of Kirke's Plum, Bellegarde Peaches, Lord Napier Nectarines, and a fine Victory of Bristol Melon.

For four dishes Mr. Paxton was 1st, having very good Foster's Seedling Grapes.

Mr. Aitken had the best four dishes of fruit grown in the open air, followed by Messrs. Goodman and Hughes.

Some very fine black Grapes were shown. For three bunches of Black Hamburgh, Mr. T. Osman, gr. to L. J. Baker, Esq., Ottershaw Park, Chertsey, was a good 1st, with large bunches and well coloured berries; 2nd, Mr. Hopkins; and for any other black variety, Mr. Osman was again 1st, Mr. Waite 2nd—both exhibitors showing Alicante.

White Muscats were poor in quality, while for any other variety some excellent Foster's Seedling were staged by Messrs. Paxton and Osman, Mr. Hughes being 3rd in a very good class.

Mr. Goodman was well 1st both for six Peaches and the same number of Nectarines. Mr. Aitken had the best pair of Melons. Several dishes of good Lord Suffield Apples were staged in the culinary classes, all the prizes going to that variety.

Vegetables were staged in abundance, and in most instances of good quality, the finest produce competing for the special prizes offered by Messrs. Sutton & Sons for six varieties, and which brought eight competitors. Mr. Waite was 1st, having very fine Sutton's Perfection Tomato, New Intermediate Carrots, and Satisfaction Potato. Mr. Lockie was a good 2nd; in his lot, Eclipse Cauliflower was very fine; Mr. Manley 3rd. Messrs. Waite, Lockie, and Woodford also secured the prizes offered by Messrs. Webb & Sons, with very similar produce. Many classes were devoted to simple dishes of vegetables, in which the competition was keen, Potatoes being especially good; cottagers and amateurs also showing well.

Miscellaneous.—Messrs. Sutton & Sons, Reading, contributed a very extensive collection of annuals and hardy herbaceous flowers. Their stocks of Phlox Drummondii, Dianthus, Seedling Carnations, Poppies in variety, white Mignonette, double and single Chrysanthemums, were all highly commended.

Messrs. Veitch & Sons sent from their grounds at Langley a choice collection of 350 Roses, admirably put up, especially fine being some blooms of La France, Senator Vaisse, A. K. Williams, Heinrich Schultheis, Eugene First, Grace Darling, Fisher Holmes, and Marquise de Castellane.

Messrs. Sutton & Sons were awarded a First-class Certificate for a new and beautiful strain of their Netted Gloxinias, quite distinct from the many varieties now in commerce; the veining is more

heavily marked and shows well at a distance. The plants exhibited were netted with white on a bright red ground. The strain exhibits various other colours.

Mr. W. Clark, Reading, exhibited specimens of his improved patent system of glazing which has met with much success.

TAUNTON HORTICULTURAL.

AUGUST 16.—This exhibition took place as usual in Vivary Park, and the day being fine and cool, a very large attendance resulted. The show was as extensive as ever, and of the usual high order of merit, except in fruit, and such cut flowers as Dahlias, Hollyhocks, Gladioli, &c., which showed the effects of the late season.

Stove and Greenhouse Plants.—The best twelve specimens, to which the handsome prize of £20 was awarded, came from Mr. James Cypher, nurseryman, Cheltenham, who had Ericas Thompsoni, ampullacea, Marnockiana, and Irbyana; Bougainvillea glabra, Statice profusa, Clerodendron Balfourianum, Ixora Pilgrimi, &c.; a good even lot. 2nd, Mr. Lock, gr. to W. B. Cleave, Esq., Crediton, who had good specimens of Allamanda Hendersoni, A. nobilis, Eucharis amazonica, Stephanotis floribunda, Statice Holfordi, Ericas Eweriana, Fairicena, and Lindleyana, &c. The best new plant in bloom was Odontoglossum Harryanum, from Mr. J. Cypher; Mr. H. Godding, nurseryman, Cambe, Taunton, being 2nd, with Plumbago capensis alba. The best new foliaged plant was Alocasia Van Houttei, from Mr. W. C. Drummond, nurseryman, Bath; Mr. Cypher being 2nd, with Neprolepis returcans triplinatifolia. The best collection of twelve stove and greenhouse plants in the amateur's division came also from Mr. Lock, who had Latania borbonica, Alocasia Thibautiana, Clerodendron Balfourianum, Croton angustifolius, Eucharis amazonica, &c. Mr. E. Wills had the best four plants in bloom, having good specimens of Clerodendron Balfourianum, Erica obbata purpurea, Allamanda nobilis, and Lapageria rosea; 2nd, Mr. Lucas. The best specimen stove plant was a fine piece of Nepenthes Mastersi, with eighteen pitchers, from Mr. Lucas; he also had the best greenhouse plant in flower, staging Statice brassifolia. The best specimen Fern was Gleichenia spelunca. Fuchsias, bedding and variegated Pelargoniums were also shown as single specimens.

Begonias.—The tuberous-rooted section was represented by some very fine specimens from Mr. H. Godding.

Miscellaneous Flowering Plants.—These included Pelargoniums of the bedding section, but grown in very large pots; Fuchsias, the best coming from Mr. C. Drummond; Cockscombs, the best coming from Mr. H. T. Manley; Lilies; Achimenes, Mr. C. Lucas being 1st, with four very fine specimens, grandly grown and flowered, the varieties being Dazzle, Maave Queen, Perfection, and Margaretta; 2nd, Mr. A. Tucker, gr. to Major Winter. Gloxinias were shown in fours, and Petunias were well grown and flowered specimens.

Orchids.—Mr. Cypher was the only exhibitor of four Orchids, staging nice specimens of Cattleya crispa superba, C. Gaskelliana, Saccolabium Blumei, and Cypripedium Stonei.

Groups of Plants arranged for Effect. This was a new feature, and proved highly successful. In the class to cover a space of 100 feet, Mr. C. Lucas put up a very pleasing arrangement. In the amateurs' division, to fill a space of 50 feet, Mr. Wills was 1st, and Mr. Lucas 2nd.

Cut Flowers.—Roses were well shown in the open class by S. P. Budd, Esq., Bath (Mr. Campbell, gr.); and Messrs. G. Cooling & Sons, Bath. The former had the best twenty-eight varieties and also twenty-four varieties, three blooms of each. In the amateurs' class for twenty-four blooms, and also that for twelve, Mr. Budd was 1st, with good flowers. Tea Roses were also well shown by the same exhibitors. Dahlias were below the average, and single Dahlias being shown as single blooms made, as might be expected, a poor display. Hollyhocks, Asters, Verbenas, Carnations and Picotees fell below their usual average, owing to the season, but zonal Pelargoniums were remarkably good.

Table Decorations, &c.—The tent in which these are placed is always a special object of interest at Taunton. Handsome prizes were offered for the best dinner-table, arranged for ten persons, arranged with fruit and flowers. Mr. Lock was 1st, with three vases of uniform size and arrangement. Mr. Hoskins was a good 2nd, but the arrangement fell short of Mr. Lock's work. Two tables were arranged accord-

ing to what is said to be the prevailing fashion, viz., with a groundwork of some soft gauzy material of a golden or buff colour laid in the form of an elongated oval in the centre of the table in folds: one had a groundwork of this of a bright golden colour, with vases of scarlet Poppies; another had buff instead of gold, with leaves of the purple Beech laid upon it, and some simple low vases of flowers. This was shown by Miss Grace Tarrant, and awarded the 3rd prize in the competition.

Fruit.—The best collection of ten varieties came from Mr. H. W. Ward, The Gardens, Longford Castle, Salisbury, who had Madresfield Court and Buckland Sweetwater Grapes, Exquisite Peaches, Negro Largo Figs, Queen Pine, Black Circassian Cherries, Melon, and Jargonelle Pears; 2nd, Mr. Iggulden, The Gardens, Marston, Frome, with Black Hamburgh and Muscat of Alexandria Grapes, Sea Eagle Peaches, Lord Napier Nectarine, Moor Park Apricots, Brown Ischia Figs, and an excellent Queen Pine. This collection ran Mr. Ward very close indeed. Mr. Pratt, The Gardens, Longleat, Warminster, was 3rd.

The best collection of four dishes came from Mr. Daffurn, gr. to D. Cox, Esq., who had Madresfield Court Grapes, Noblesse Peaches, Elruge Nectarines, and Melon; 2nd, Mr. Pratt, with Muscat of Alexandria Grapes, Crimson Galande Peach, Elruge Nectarine, and Melon.

Mr. Ward had the best Pine-apple, staging a good Cayenne.

Mr. Pratt was placed 1st with three bunches of Black Hamburgh Grapes, showing highly-finished examples, Mr. Iggulden being 2nd. The best black Grape other than Hamburgh was Madresfield Court, from Mr. Daffurn. Mr. Ward being 2nd with well-finished Gros Maroc. Mr. Ward had the best three bunches of white Muscats, Mr. Pratt coming 2nd. In the class for any other white, Mr. J. Webber, gr. to G. F. Luttrell, Esq., with Buckland Sweetwater, somewhat green, Mr. J. Lloyd coming 2nd with well-finished Foster's Seedling.

The best dish of Peaches was Sea Eagle, from Mr. W. Iggulden, Mr. Daffurn being 2nd with Grosse Mignonne.

One or two fairly good dishes of Moor Park Apricots were staged. Mr. Daffurn had the best dish of Nectarines, staging good Elruge; Mr. Crossman being 2nd, with Pine-apple. Pears were below the average; Plums, light and coloured, were wanting in finish; Cherries were represented by fine Black Circassian. The best dessert Apples were Astrachan and Beauty of Bath; the best culinary, Lord Suffield. Currants and Gooseberries were generally fine.

Vegetables.—These were very largely shown and generally of very fine quality. The special prizes offered by Messrs. Sutton & Sons, Reading, for six dishes of vegetables brought a remarkably good competition; Mr. G. Garaway, Bath, being 1st, and Mr. H. Moore 2nd. Similarly, Messrs. Webb & Sons', Wordsley, special prizes for a similar number brought a good competition also; Mr. T. Tilley being 1st; and Mr. G. Ricks, 2nd.

The best collection of ten dishes of vegetables was shown by Mr. W. Every, a very fine lot; Mr. T. Webber being 2nd.

Potatoes were especially numerous. Mr. Ward had the best six dishes, consisting of International Kidney, Worsley Kidney, Prizetaker, Vicar of Laleham, Blanchard, and Schoolmaster; 2nd, Mr. J. H. Virgo, with Reading Russet, Vicar of Laleham, Sutton's 36, Snowdrop, Jackson's Kidney, and General Gordon. Tomatoes are very fine, the Perfection type leading the way. In the cottagers' division the competition was exceedingly keen.

Trade Collections.—These were furnished by Messrs. Lucombe, Pince & Co., nurserymen, Exeter, who had a group of decorative plants, cut blooms of Carnations and Picotees, &c.; Messrs. R. T. Veitch & Sons, nurserymen, Exeter, who had a pleasing group of plants of great interest, including some blooms of great interest, including some of new yellow Picotees, to four of which First-class Certificates of Merit were awarded, viz., Almira, Annie Douglas, Agnes Chambers, and Dorothy; Mr. B. R. Davis, nurseryman, Yeovil, who had a large collection of Begonias, single and double—a special Certificate of Merit being awarded to the latter as a fine strain; and Messrs. Kelway & Sons, Langport, who had Gladiolus, Delphiniums, Gaillardias, &c., of fine quality. First-class Certificates of Merit were awarded to Gladiolus Regalia, Orbit, and Faust; to Gaillardia Socrates, a very fine single variety; and splendissima plenissima [!], a fine new and distinct double variety; and to Delphinium Thomas Baines, a single pale blue variety of fine form.

DEVON AND EXETER HORTICULTURAL.

AUGUST 18.—The 167th exhibition of this Society was held in the public grounds of Northernhay. The weather proved all that could be desired, and the display of plants, cut flowers, fruit and vegetables, in the various tents was of a high order.

Cut Flowers (Open).—For a collection of forty-eight Dahlias, double, distinct, Mr. J. Nation, Taunton, was 1st, but did not show so well as usual, owing probably to the lateness of the season; his best blooms were Emily Edwards, Mrs. Saunders, Vice-President, Mrs. S. Hibberd, F. Smith, Earl of Ravensworth, Peacock, Harrison Weir, Mr. J. C. Reid, W. Rawlings, James Cocker, Grand Sultan, Imperial, Mrs. F. Foreman, and Crown Prince.

Mr. Rowland, gr. to Wm. Brock, Esq., Exeter, led in the class for eighteen bunches cut flowers, showing a good lot. Mr. Rowland also led for nine stove and greenhouse flowering plants, with a nice lot of fresh plants, including Allamanda Hendersoni, A. grandiflora, Ixora Williamsi, I. Duffi, Dipladenia amabilis, with splendid flowers and foliage; a grand well-flowered specimen of Stephanotis floribunda, Bougainvillea glabra, Anthurium Andreanum, and Rondeletia speciosa major. Mr. Locke, gr. to W. C. Cleaver, Esq., Crediton, who had some grand specimens, but had materially suffered through being exhibited at various shows before, was 2nd. Ericas, Allamandas, Phenocoma proliifera Barnesi, Eucharis amazonica (a grand pot), and Clerodendron Balfourii were good. The same exhibitor was an easy 1st for nine stove and greenhouse foliage plants; his Crotons were especially good and highly coloured. Cycas circinalis, Euphorbia villosa, Kentia Fosteriana and K. Balmoreana, Alocasia Thibautiana and A. dasylirion were amongst the best. Mr. Rowland followed with fine plants of various Palms. Mr. Locke secured another 1st for Ferns, with splendid plants of Adiantum cuneatum, Davallia fijiensis, Tyermanni, bullata, and polyantha; Nephrolepis davallioides furcans, Cibotium princeps.

For a group of miscellaneous plants arranged for effect on 100 square feet, a Silver Cup was given by the Mayor of Exeter (C. T. K. Roberts, Esq.). Here Mr. Locke was again successful, eclipsing anything he has ever put up at this show in previous years; Mr. Rowland again followed him with a very effective arrangement.

Six Fuchsias, distinct, were good, from Mr. Mollon, gr. to Mrs. Ponget; and Mr. Staddon, gr. to Col. Courtenay, led for Gloxinias, showing very well.

Fruit.—Collections of ten dishes were good. Mr. Iggulden, gr. to the Earl of Cork, Marston House, Frome, had the 1st prize lot, with fine bunches of Black Hamburgh and Muscat of Alexandria Grapes, large and handsome Sea Eagle Peaches, Lord Napier Nectarines, Moor Park Apricots, Brown Ischia Figs, Florence Cherries, Plum Early Bride, and Hero of Lockinge Melon. Mr. James, gr. to Sir J. Walrod, Bart., who had fine and well finished bunches of Black Hamburgh Grapes, Melon High Cross Hybrid, splendid Elruge Nectarines and Bellegarde Peaches, Napoleon Bigarreau Cherries, and Dumelow's Superb Plum, led in the smaller class for six dishes. Single dishes of Grapes were numerous, Messrs. Iggulden, Pike, Barnes, and Langworthy taking the chief prizes.

Vegetables were shown in grand style—never better. For the collection of twelve kinds Mr. Maris, gr. to Sir G. Shelley, put up a splendid lot, including Red-top Turnip, Sutton's Gem Celery, Intermediate Carrot (James), Hulin's Giant Cauliflower, Moore's Cream Marrow, Reading Perfection Tomato, Sutton's Reading Sprouts, Purly Park Hero Cucumber, Sutton's Seedling Potato, Duke of Albany Pea, Girtford Giant Runner Bean, and Giant Rocca Onion; Mr. Leach, gr. to J. Drew, Esq., was a very good 2nd. The prizes offered for a single dish of vegetables were all well contested. D. C. P.

SHROPSHIRE FLORAL AND HORTICULTURAL.

AUGUST 22 AND 23.—Several tents were occupied in displaying the numerous exhibits (numbering 2800 entries), being some 360 more than last year, and which were generally of a high order.

Plants.—In the principal class—that for twenty stove and greenhouse plants, prizes of £25, £20, and £15 being offered—there were three competitors, their combined efforts making a very meritorious display. In this class Mr. James Cypher, Cheltenham, staged some grand examples of cultivation, and

took the 1st place, the most noteworthy being Erica Irbayana, E. ampullacea Barnesi, Statice profusa, Ixora Fraseri, Bougainvillea glabra, Allamanda nobilis, Croton Queen Victoria, grandly coloured; Latania borbonica, Cycas revoluta, &c. Mr. C. Roberts, gr. to A. Nicholson, Esq., Highfield Hall, Staffs., made a close 2nd, with very fine examples of Dipladenia profusa, Erica retorta major, E. jasminiflora, and Crotons.

For nine stove and greenhouse plants, Messrs. Pritchard & Sons, Shrewsbury, who also had good Fuchsias and zonal Pelargoniums, led, the most noteworthy plants being Clerodendron Balfourii, Allamanda Hendersoni, Gleichenia dichotoma, Davallia Mooreana, &c.; 2nd, Mr. J. Farrant, gr. to Mrs. Jason, Abbey Forgeate, with, amongst others, good examples of Francisca calycina major, Dipladenia amabilis, Erica æmula, and Ixora amabilis.

In the class for six stove and greenhouse plants, confined to gentlemen's gardeners in Salop and Montgomery, Mr. J. Farrant was again to the front.

With six exotic Ferns, Mr. C. Roberts was to the fore, his principal plants being Todea superba, a fine piece; Cyathea medullaris, Platycerium alcornoe, and Dicksonia antarctica.

Mr. J. Cypher was again victorious with six plants in flower, Orchids excluded, Erica ferruginea superba being shown finely flowered; 2nd, Mr. C. Roberts, who led in the class for six Palms, with large examples of Latania borbonica, Thrinax elegans, Kentia australis, &c.

Cut Flowers.—In the classes for thirty-six and twenty-four Dahlias, the 1st and 2nd prizes were taken by Messrs. Heath & Sons and Mr. W. Shaw, the last-named exhibitor securing 1st honours for eighteen Gladioli spikes. Roses were best from Messrs. Perkins & Sons, Coventry; and from Mr. S. Garner. Bridal and hand bouquets and buttonholes were well shown by Messrs. Perkins & Sons.

Fruit.—For the collection of twelve dishes, four competitors appeared, the 1st place being accorded to Mr. R. Dawes, gr. to Hon. Mrs. Ingram, with very noticeable specimens of Royal George Peaches, Barbarossa Grapes, Brown Turkey Figs, Queen Pine, and Roman Apricots; 2nd, Mr. J. H. Goodacre, gr. to the Earl of Harrington, who had fine Barrington Peaches, Elruge Nectarines, and Muscat of Alexandria Grapes, &c. Mr. Pratt, gr. to the Marquis of Bath, Longleat, and Mr. Gilman, gr. to the Marquis of Shrewsbury, Ingestrice, being respectively 3rd and 4th; Mr. J. Lambert having good Royal George Peaches, Humboldt Nectarines, Gooseberry Wonderful (very fine), Black Hamburgh and Muscat of Alexandria Grapes, led in the collection of nine dishes.

In the class for six Peaches as many as eleven competitors appeared, Mr. Gilman leading with grandly coloured Barrington. Out of ten entries for Nectarines, Mr. Burnett, gr. to Hon. C. H. Wynne, was 1st, with Pine-apple.

Black and white Grapes were shown in wonderfully good condition, considering the nature of the season, by Mr. J. Stevenson, gr. to Col. Pilkington, Prescott, Mr. Pratt, Mr. Davies, Mr. Bennett, Mr. Barker, Mr. Middleton, and others.

Vegetables.—The centre of attraction in this department of the exhibition, which was well represented, Potatoes being largely shown, was in the class for a collection of vegetables, twelve varieties, in competition for the prizes offered by the Veitch Memorial Trustees. There were thirteen entries, Mr. J. Lambert, gr. to Onslow Hall, with a magnificent lot, being adjudged the premier place, his principal dishes being Autumn Giant Cauliflower, Lyon Leek, Snowball Turnip, Purley Park Cucumber, Laxton's Czar Runner Beans, Prodigy Pea, Prime Minister Potato, Carrot Improved Intermediate, &c.; 2nd, Mr. C. J. Waite, Glenhurst Gardens, Esher, who has good specimens of Sensation Tomatoes, White Tripoli Onions, Ne Plus Ultra Bean, New Intermediate Carrot, Autumn Giant Cauliflower, &c.

Special Prizes.—For the prizes offered by Messrs. Webb & Sons for a collection of vegetables, eight distinct kinds, Mr. C. J. Waite took 1st prize with fine Chancellor Turnip, Sensation Tomato, Major Clark's Celery, Duke of Albany Peas, White Tripoli Onions, New Intermediate Carrot, &c.; Mr. J. Lambert and Mr. A. J. Skinner following in the order named.

Prizes were offered by Messrs. Sutton & Sons for Cucumbers, Mr. A. J. Skinner and Mr. G. Pearson, gr. to Lord Berwick, being respectively 1st and 2nd. For prizes offered by the same firm for Melons, 1st, Mr. C. J. Waite; 2nd, Mr. W. Palmer; 3rd, Mr. Borlase, each staging Hero of Lockinge.

Miscellaneous.—Messrs. R. Smith & Co., Worcester, contributed a good collection of foliage and flowering plants; Messrs. W. & J. Birkenhead, Sale, staged a very interesting and beautiful collection of Ferns; from Messrs. Kelway & Sons, Langport, there was an attractive bank of Gladioli, Delphiniums, Gaillardias, &c.; and Messrs. H. Cannell & Sons, Swanley, Kent, had Dahlias and zonal Pelargoniums (cut trusses); Messrs. Jones & Son, Shrewsbury, sent foliage and flowering plants, prays, bouquets, &c.; Messrs. Clibran & Son, foliage plants; Messrs. Dobbie & Co., Rothesay, cut flowers of their strain of African Marigold; Messrs. Dicksons & Co. (Limited), Chester, a group of nicely coloured Crotons and other foliage plants, cut Roses, &c.; and Messrs. E. Webb & Sons, Stourbridge, contributed an attractive stand of their various vegetable novelties.

NEWCASTLE FLOWER SHOW.

AUGUST 22—24.—There were (says the *Newcastle Daily Leader*) 112 exhibitors with 3492 exhibits, and the entries comprised 159 plants in bloom, and foliage and table plants; 238 Ferns, Ericas, Lilliums, Fuchsias, Pelargoniums, and Begonias; 88 epergnes, baskets of flowers, and dessert tables; 69 hand and bridal bouquets, sprays, and buttonholes; 592 Dahlias, Hollyhocks, and Gladioli (spikes) 300 Roses; 54 bunches of herbaceous flowers; 1670 Asters, Carnations, Picotees, Marigolds, and Pansies; 217 dishes of fruit, and 105 bunches of Grapes. These figures do not include the exhibits for which several prizes were offered, nor those which were not for competition.

The large marquee was divided into three sections, and up the centre ran the table upon which, perhaps, the most delicate and pretty collection of the whole show was displayed—namely, hand and bridal bouquets, sprays, buttonholes, epergnes, baskets of flowers, and dessert tables.

Grapes were about the largest section, the white kinds predominated in numbers, but the splendid large bunches of Black Hamburgs, with bloom almost untouched, had a richer appearance. Nectarines, Peaches, Pine-apples, Pears, and other fruit were arranged in profusion, and were well set off with dishes of Currants, Cherries, &c.

Cut flowers, of course, formed a very important item in the show; Roses, Carnations, Picotees, Asters, Marigolds, Dahlias, Gladioli, Hollyhocks, and other kinds, all in great variety, formed a showy and handsome display. The Roses, Carnations, and Hollyhocks were exceptionally fine. Stove plants in bloom were well exhibited.

A special prize for the best collection of six varieties of vegetables was given by Messrs. S. Finney & Co., seed merchants, Newcastle. This being the largest of the special prizes brought a good competition. There were, as usual, three divisions—open, amateur, and special—and whichever one was examined it was seen that the competition was very close, and the judges—Mr. James Douglas (Essex), Mr. John Paterson (Edinburgh), Mr. John Ward (Essex), Mr. James Grieve (Edinburgh), Mr. J. Machonochie (Alexandria, N.B.), and Mr. Joshua Atkins (Cheshire)—had an arduous task before them in selecting the winners. The principal prize-takers in the various classes were:—J. McIndoe, gr. to Sir Jos. Pease; J. Hunter, gr. to the Earl of Durham; Jos. Puntton, gr. to Dr. Hodgkin, Newcastle; J. Spoor, Gateshead; J. Walker and N. Walker, Low Fell; F. Edmondson and Miss Mary Edmondson, Newcastle; T. Battenby, Whickham; J. Battenby, Blaydon; J. Westcott, gr. to the Duke of Cleveland; J. McIntyre, gr. to Mrs. G. Pease, Darlington; and M. Flowdy, Gateshead.

At the east and west ends of the marquee were the stands of exhibits not for competition. In this class the judges awarded the highest honour of "very Highly Commended" to Messrs. Little & Ballantyne, nurserymen, Carlisle, who exhibited a magnificent group of foliage and ornamental plants.

Varieties of Crotons particularly worthy of mention were C. Prince of Wales, C. Warreni, C. Williamsi, C. Queen Victoria, and C. Countess. Taken as a whole the collection had a beautiful blend of colour, and this fact, together with the rarity and fineness of many of the plants, undoubtedly made the collection one of the most striking features in the show. Messrs. William Fell & Co., nurserymen, Hexham, deservedly received a special commendation from the judges for their collection of herbaceous plants and cut flowers. The Conifers—which formed the principal part of the collection—are seldom seen in such good form.

The chief varieties of Conifers were *Retinospora plumosa aurea*, *Cupressus Lawsoniana lutea*, *Taxus aurea*. Variegated grass, *Dactylis glomerata elegantissima aurea*, backed with a new hardy *Fuchsia*, was used as a border to the group. Their cut flowers and Roses made a very effective display.

For a collection of herbaceous plants, flowers, &c., Messrs. Kent & Brydon, Darlington, were highly commended, and Mr. W. R. Armstrong, of High Cross, Elswick Road, Newcastle, was commended for his exhibit of six or eight large plants. Messrs. Harkness & Sons, Bedale, Yorkshire, took a prize for twenty-four cut Roses.

THE WEATHER.

[Accumulated temperature indicates the combined amount and duration of the excess or defect of temperature above or below 32° F. for the period named, and is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	Above or below the Mean for the week ending Aug. 20.	TEMPERATURE.				
		ACCUMULATED.				Day-deg.
		Above 42° for the Week.	Below 42° for the Week.	Above 42° difference from Mean since Jan. 3, 1888.	Below 42° difference from Mean since Jan. 3, 1888.	
Principal Wheat-producing Districts.		Day-deg.	Day-deg.	Day-deg.	Day-deg.	
0. SCOTLAND, N. ...	5 below	50	0	-228	+201	
1. SCOTLAND, E. ...	5 below	65	0	-388	+157	
2. ENGLAND, N.E. ...	6 below	71	0	-415	+73	
3. ENGLAND, E. ...	8 below	78	0	-327	+154	
4. MIDLAND COS. ...	7 below	78	0	-386	+150	
5. ENGLAND, S. ...	6 below	95	0	-416	+204	
Principal Grazing, &c., Districts.						
6. SCOTLAND, W. ...	4 below	77	0	-287	+107	
7. ENGLAND, N.W. ...	6 below	79	0	-318	+117	
8. ENGLAND, S.W. ...	6 below	86	0	-388	+154	
9. IRELAND, N. ...	3 below	91	0	-254	+67	
10. IRELAND, S. ...	4 below	94	0	-233	+113	
— CHANNEL ISLANDS	3 below	113	0	-306	+154	

DISTRICTS.	More or less than the Mean for the Week.	RAINFALL.		BRIGHT SUNSHINE.	
		No. of Rainy Days since Jan. 3, 1888.	Total Fall since Jan. 3, 1888.	Percentage of possible Duration for the Week.	Percentage of possible Duration since Jan. 3, 1888.
Principal Wheat-producing Districts.	Tenths of Inch.		Ins.		
0. SCOTLAND, N. ...	5 less	148	23.0	53	30
1. SCOTLAND, E. ...	4 less	130	19.1	38	30
2. ENGLAND, N.E. ...	4 less	121	17.5	29	26
3. ENGLAND, E. ...	1 less	23	16.3	25	28
4. MIDLAND COS. ...	2 less	114	15.9	30	27
5. ENGLAND, S. ...	2 less	115	17.5	34	28
Principal Grazing, &c., Districts.					
6. SCOTLAND, W. ...	4 less	123	26.5	44	2
7. ENGLAND, N.W. ...	4 less	123	17.9	35	28
8. ENGLAND, S.W. ...	1 more	127	21.1	43	34
9. IRELAND, N. ...	2 less	128	23.4	37	28
10. IRELAND, S. ...	3 more	117	23.9	41	33
— CHANNEL ISLANDS	5 less	142	19.5	35	38

THE PAST WEEK.

The following summary record of the weather for the week ending Aug. 20, is furnished from the Meteorological Office:—

"The weather has been fairer than of late in Ireland and Scotland, but in most parts of England

the sky has been more cloudy than it was last week. Very little rain fell during the greater part of the period, but on the 19th and 20th a considerable amount fell over the more southern and western districts.

"The temperature has again been very low for the time of year, especially over England, where the deficit ranged from 6° to 8°. The highest of the maxima, which were recorded on rather irregular dates, varied from 65° in 'Scotland, W.,' to 74° in 'Ireland, S.' On some occasions the daily maxima were extremely low; at Oxford on the 16th the thermometer did not rise above 55°. The absolute minima, which were generally recorded either on the 18th or 19th, were as low as from 32° to 37° in Scotland, and between 35° and 37° in Ireland, while over England they ranged from 34° in 'England, N.W.,' and 'England, S.W.,' to 41° in 'England, S.' In the 'Channel Islands' the lowest reading was 49°. Frost occurred on the grass at most of the inland stations; at Hillington on the 19th the thermometer exposed on the grass fell to 26° 6.

"The rainfall has been more than the mean in 'England, S.W.,' 'Ireland, S.,' and the 'Channel Islands,' but in all other districts a deficit is shown.

"Bright sunshine has been more prevalent than it was last week over Ireland, Scotland, and the West of England, but less so over central, southern, and eastern England. The percentage of the possible amount of duration ranged from 25 in 'England, E.,' to 43 in 'England, S.W.,' 44 in 'Scotland, W.,' and 53 in 'Scotland, N.'"

MEAN TEMPERATURE OBSERVED AT CHISWICK DURING THE WEEK ENDING SEPT. 1. (AVERAGE OF FORTY-FOUR YEARS.)

Aug. 26 ...	...	60° 9	Aug. 30 ...	...	60° 4
" 27 ...	...	60° 8	" 31 ...	...	60° 2
" 28 ...	...	60° 7	Sept. 1 ...	...	60° 0
" 29 ...	...	60° 5	Mean for the week	...	60° 5

ENQUIRIES.

"He that questioneth much shall learn much."—BACON.

GENTIANA ASCLEPIADEA.—Can this plant be propagated by cuttings, and, if so, what is the proper time for striking? If not by cuttings, how otherwise can it be increased? C. E. F.

NOTICES TO CORRESPONDENTS.

ADIANTUM FARLEYENSE: G. Very fine pinnae, but no trace of spores.

APPLE CROP: Woodall & Co. Particulars as to the condition of the crop are to be found in our report of the fruit crop, published on July 28 last.

BOOK ON JUDGING AT FLOWER SHOWS: G. H. We do not know of any work quite so comprehensive as that which you require, although there are some on the methods of judging certain florists' flowers.

BLUE HYDRANGEAS: S. Fox. We are specially glad to hear from a forty years' subscriber to our journal. *Hydrangea hortensis* flowers may be made blue by using some kinds of artificial manures; they also change to a shade of that colour in peaty soils containing iron; and they may likewise be made to put on a blue colour by being watered during the blooming period with a weak solution of common alum.

CARNATION R. H. ELLIOT: This variety, certificated on the 14th inst. at the Royal Horticultural Society's meeting, was exhibited by Messrs. Laing & Mather, of Kelso, N.B.

CARNATIONS: J. Wilks. A very pretty lot, of good bright colours. No. 36 is specially good and rich.

CENTAUREA AUREA, Ait. (= *Crocodylium aureum*, Sweet): C. W. Dod. Figure in *Botanical Magazine*, 421, is a good species, but, I believe, is not now in cultivation. There is only a single specimen in the herbarium at Kew, labelled "C. aurea, Ait., Port Juvenal," and I find no trace of it anywhere else. D. D.

DOUBLE WHITE LAPAGERIA: J. D. G. We have never seen this before; the stamens are replaced by petals, and the carpels also partially, and increased in number.

GROWTH ON AZALEAS, &c.: J. L. The gall-like production is caused by a fungus called *Exobasidium vaccinii*, common on members of the *Erica* or *Heath* family.

IVY: J. F. No harm will arise by cutting it back, but do so at once, and the slight growth which will take place before winter will cover its otherwise ugly skeleton.

NAMES OF PLANTS: A. L. Lange. *Lilium auratum*.—E. K. G. *Astrantia major*.—Frank. *Ononis arvensis*.—Alpine. 1, *Lastrea glabellum*; 2, *Verbascum nigrum*; 3, *Viburnum Lantana*; 4, *Crucianella stylosa*; 5, *Zenobia pulverulenta*; 6, *Phyllirea angustifolia*; 7, *Prunus Lauro-cerasus*, narrow leaved variety; 8, not recognised.—Enquirer. *Chrysanthemum coronarium*, fl.-pl., yellow variety.—C. E. F. *Cystopteris alpina*; please say if cultivated or wild.—J. C. Shadwell. *Celtis occidentalis*.—H. L. 1, not found enclosed; 2, *Calamintha clinopodium*; 3, *Carum segetum*; 4, *Silene Schafta*; 5, *Calamintha acinos*; 6, *Asperula cynanchica*; 7, *Aster*, not trifolium, if growing near the sea.—L. J. *Catananche cœrulea*.—Mrs. E. *Sparganium ramosum*, *Mentha hirsuta*.—T. C. H. *Masdevallia erythrochate*. The pretty *M. Hinksiana* × between *M. tovarensis* and *M. ignea* appears to be one of the most beautiful of garden hybrids. Its bright yellow flowers are unmatched among *Masdevallias*.

PEAS: H. R. L. Your Peas are too small.—Workshop. We are unable to name Peas unless we see them growing; there are so many varieties, and all very similar.

PINE-APPLES ON SUCKERS: T. T. B. Not at all remarkable, it being the natural mode of fruiting. The removal of suckers, and then fruiting them, is of course an artificial method. Those growers who plant out their Pine-apple fruiters will often allow two or three suckers to bear fruits without removal from the parent stock; but the necessary mounding up of the suckers, so as to afford them nourishment by means of their own roots, is often an unsatisfactory and awkward operation.

SPECIES OF ERICA: Jed. We cannot say, for certain, how many are grown in this country now, but it is certainly fewer than fifty years ago. Hardy *Ericas* number about fifty species and varieties, and greenhouse species and their varieties about 130.

THANATOPHORE (MARTIN'S): E. H. C. The agent for the United Kingdom is Mr. B. S. Williams, Victoria Nurseries, Upper Holloway, London, N. Your other question next week.

VINE LEAVES: G. H. Judging from the appearances, the disfigurements are due to some temporary cause, and if the Vines are cut hard back they are likely to break well next year. There is no insect or fungus.

YELLOW MARGUERITE: W. T. U. The presence of tubular flowers is not uncommon. It is only an exaggeration of the natural condition.

COMMUNICATIONS RECEIVED:—Prof. Cornier, Paris—F. W. M., Glendevon—F. W. B., Dublin—W. C.—W. S. M.—C. C.—H. G.—J. L.—J. C. & Co.—A. O. W. (many thanks)—H. C., Geneva—G. B. (next week)—C. J. D.—D. J. Y.—J. H.—A. D.—C. B. S.—R. W. A.—T. M.—F. W. B.—J. S.—R. D.

Correspondents sending plants or fruits to be named, or asking questions demanding time and research for their solution, must not expect to obtain an answer to their enquiries in the current week.

MARKETS.

COVENT GARDEN, August 23.

MARKET dull, with heavy supplies from the Channel Islands. Grapes easier. James Webber, Wholesale Apple Market.

VEGETABLES.—AVERAGE RETAIL PRICES.

	s. d. s. d.		s. d. s. d.
Artichokes, p. doz.	4 0	Mustard and Cross,	
Beans, Kidney, lb.	0 1	punnet	0 4
Beet, red, per dozen	1 0-2 0	Onions, per bunch	0 5
Carrots, per bunch	0 9	Parsley, per bunch	0 4
Cauliflowers, each	0 6	Potatoes, per cwt.	4 0-5 0
Celery, per bundle	1 6-2 8	" kidney, per cwt.	4 0-5 0
Cucumbers, each	0 9-1 0	Shallots, per lb.	0 6
Endive, per dozen	4 0	Spinach, per bushel	3 0
Green Mint, bunch	0 4	Tomatoes, per lb.	0 9-1 0
Leeks, per bunch	0 4	Turnips, per bunch,	
Lettuce, per dozen	1 6	new	0 5
Mushrooms, punnet	1 0-1 6	Vegt. Marrows, each	0 2

POTATOS.—Jerseys, unsaleable; English, 2s. 6d. per bushel.

FRUIT.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Cherries, half-sieve... 2 0-5 0	Lemons, per case ... 12 0-21 0
Currants, blk., half-sieve ... 3 0-4 0	Melons, each ... 1 0-3 0
— Red, half-sieve... 2 0-3 0	Peaches, dozen ... 2 0-10 0
Grapes, per lb. ... 0 9-2 6	Pine-apples, Eng., lb. 2 0-3 0
	— St. Michael, each 2 0-5 0

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Aralia Sieboldi, doz. 6 0-18 0	Ficus elastica, each 1 6-7 0
Balsams, per doz. ... 2 0-4 0	Fuchsias, doz. ... 3 0-8 0
Bouvardias, per dozen 9 0-12 0	Heliotropes, dozen... 3 0-6 0
Calceolarias, dozen 3 0-6 0	Hydrangeas, dozen... 9 0-18 0
Carnations, per doz. 6 0-18 0	Liliums, var., doz. ... 18 0-30 0
Cockscombs, per doz. 2 6-4 0	Lobelias, per doz. 3 0-6 0
Coleus, dozen ... 2 0-4 0	Marguerites, doz. ... 6 0-12 0
Crassula, per doz. ... 9 0-12 0	Mignonette, 12 pots 0 6-8 0
Cyperus, per dozen. 4 0-12 0	Myrtles, per dozen... 6 0-12 0
Dracena terminalis, per dozen ... 30 0-60 0	Palms in var., each 2 6-21 0
— viridis, per doz. 12 0-24 0	Pelargoniums, doz... 6 0-12 0
Euonymus, in var., per dozen ... 6 0-18 0	— Ivy-leaf, dozen... 3 0-6 0
Evergreens, in var., per dozen ... 6 0-24 0	— scarlet, dozen... 3 0-6 0
Ferns, in var., doz. 4 0-18 0	Rhodanthe, per doz... 4 0-6 0
Foliage plants, various, each ... 2 0-10 0	Scented Geranium, per dozen ... 3 0-6 0
	— Verbena, per doz. 4 0-6 0
	Zinnia, per dozen ... 4 0-6 0

BEDDING-OUT PLANTS.

Per dozen, 1s. to 2s.; per box, 1s. to 3s.

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Asters, 12 bunches ... 4 0-6 0	Pansies, 12 bun. ... 1 0-2 0
— French, per bun. 1 0-1 6	Pelargoniums, 12 spr. 0 6-1 0
Bouvardias, per bun. 0 6-1 0	Rhodanthe, 12 spr. 0 6-1 0
Carnations, 12 blms. 1 0-2 0	Pinks, 12 bun. ... 3 0-6 0
— dozen bunches ... 4 0-6 0	Poppies, 12 bun. ... 4 0-6 0
Chrysanthemums, 12 blooms ... 1 0-4 0	Primulas, double, 12 sprays ... 0 9-1 0
Cornflower, 12 bun. 1 6-3 0	Pyrethrums, 12 bun. 2 0-4 0
Eucharis, per dozen 3 0-6 0	Rhodanthe, 12 bun. 4 0-6 0
Forget-me-nots, 12 bunches ... 2 0-4 0	Roses, Tea, per doz. 0 6-1 6
Gardenias, 12 blooms 1 6-4 0	— coloured, dozen. 2 0-4 0
Gladioli, doz. sprays 0 8-1 6	— red, per dozen ... 0 6-1 0
Heliotropes, 12 spr. 0 6-1 0	— " 12 bunches 2 0-6 0
Lavender, 12 bun. ... 3 0-4 6	— Safrano, dozen... 0 6-9 9
Lilium longiflorum, 12 blooms ... 3 0-5 0	— Moss, 12 bun. ... 4 0-12 0
Marguerites, 12 bun. 3 0-6 0	Stephanotis, 12 spr. 2 0-4 0
Mignonette, 12 bun. 1 0-3 0	Sweet Peas, 12 bun. 2 0-4 0
	Sweet Sultan, 12 bun. 2 0-4 0
	Tuberose, 12 blms. ... 0 4-0 9

SEEDS.

LONDON: August 22.—Messrs. John Shaw & Sons, seed merchants, of 37, Mark Lane, E.C., report to-day's market quiet but firm. For every description of Clover seed the tendency of values is still in an upward direction. In Alsike and white the recent advance is well maintained, and the turn for red Clover seed now appears to have come. The crops in Ireland of both perennial and Italian Ryegrass are said to be good. New English Trifolium offers at moderate quotations. Blue Peas are rather dearer. There is no change in either Mustard or Rape seed. New winter Tares are slightly easier. Seed Rye keeps steady. For bird seeds the trade is slow.

FRUIT AND VEGETABLES.

SPITALFIELDS: August 22.—Good supplies of all kinds of fruits and vegetables, with a fair demand. Shorter supply of Potatoes; trade somewhat better. Quotations.—Fruit: Gooseberries, 3s. to 3s. 3d. per half sieve; English Green Gages, 5s. 6d. to 7s. per bushel; foreign do., 4s. to 5s. per half-flat; do. 2s. 6d. to 3s. per bushel of about 18 to 20 lb.; Cherries, 2s. to 4s. per half sieve; black Currants, 3s. 6d. to 4s. 6d. do.; red do., 2s. 6d. to 3s. 6d. do.; Apples, 4s. 6d. to 7s. per bushel; do., 2s. 6d. to 3s. 6d. per half-bushel; Pears, 4s. 6d. to 6s. per bushel; English Tomatoes, 4s. 6d. to 5s. 6d. per peck; English Plums, 4s. to 5s. 6d. per half-sieve; foreign do., 2s. to 2s. 6d. do.; do., 3s. to 5s. 6d. per flat. Vegetables: Cauliflowers, 2s. 6d. to 4s. per tally; Cabbages, 1s. 6d. to 3s. do.; Vegetable Marrows, 2s. 6d. to 4s. do.; Peas, choice, 2s. 6d. per bushel; do., 3s. 6d. to 5s. 6d. per sack; Broad Beans, 1s. to 1s. 6d. per bushel; do., 1s. 6d. to 2s. per sack; Scarlet Runners, 1s. 9d. to 2s. 6d. per sieve; Onions, 2s. 3d. to 3s. 6d. per dozen bunches; Turnips, 2s. to 2s. 3d. do.; Carrots, 1s. 9d. to 2s. do.; Beetroots, 2s. 6d. to 3s. do.; Mint, 1s. to 2s. do.; Parsley, 1s. to 1s. 6d. do.; foreign Onions, 5s. 6d. to 7s. per case; frame Cucumbers, 3s. to 3s. 6d. per dozen; common do., 9d. to 1s. do.; Endive, 1s. to 1s. 3d. do.; Cos Lettuces, 6d. to 8d. per score; Walnuts (for pickling), English, 2s. to 2s. 3d. per half sieve.

POTATOS.

SPITALFIELDS: August 22.—Quotations:—English Regents, 70s. to 80s.; do. kidneys, 70s. to 80s.; Beauty of Hebron, 60s. to 70s.; Early Rose, 50s. to 55s. per ton.

DUTCH FLOWER ROOTS.



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GERANIUMS, single, double, and Ivy-leaf, extra fine large plants, of lovely varieties, 12s. and 18s. per dozen; smaller plants, equally good sorts, for winter bloom, 4s. per dozen.
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FERNS, best kinds for planting in Ferneries or for decoration, in small pots, 4s. doz.; in larger pots, 6s. and 9s. per doz.
ADIANTUM CUNEATUM, best for cutting, in small plants, 3s. per doz., 21s. per 100; in good plants, 6s. and 9s. per doz.
TEA-CENTED and other choice ROSES, in pots, grand plants and finest sorts, either for house decoration or planting in beds, 15s. per dozen.
PRIMULAS, CINERARIAS, CALCEOLARIAS, finest strains, young plants for growing on, from stores, 1s. 6d. per dozen, 8s. per 100.
CYCLAMEN, young plants, 2s. 6d. per dozen.
ORCHIDS in variety, for either cool or warm house, 30s. and 42s. per dozen.
TABLE PLANTS in variety, 18s., 24s., 30s. per dozen.
BOUVARDIAS, young plants to grow for winter, 4s. per dozen.
PRIMULA ALBA PLENA, the finest for cutting, 9s. per doz.
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1 Calanthe vestita oculatum	1 " Schilleriana
1 " veratrifolia	1 " grandiflora aurea
1 Cologlyne asperata	1 " grandiflora aurea
1 " pandurata	1 " celsa
1 " speciosa	1 " gigantea
1 Cypripedium Hookeri	1 Renanthera coccinea
1 " levigatum	1 " Storiei
1 " Stonei	1 Vanda Hookeri
1 " Lowii	1 " Sanderiana
1 " ciliolare	1 " suavis
1 Dendrobium Dearei	1 " tricolor

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Ivies, do.	Garrya elliptica
Honeysuckles, do.	Pyrus japonica
Wistarias	" " nivalis
Brambles, pink and white bark	Virginian Creeper
Hops	" " Veitchii
Spanish Gorse	Lonicera flexuosa

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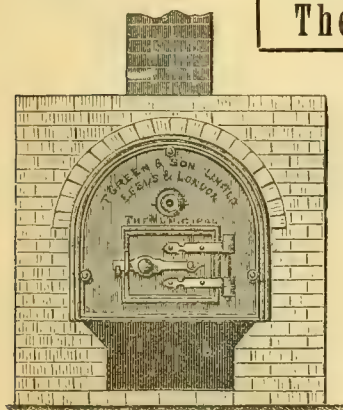
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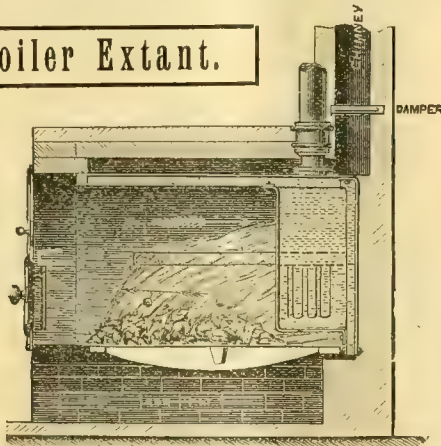
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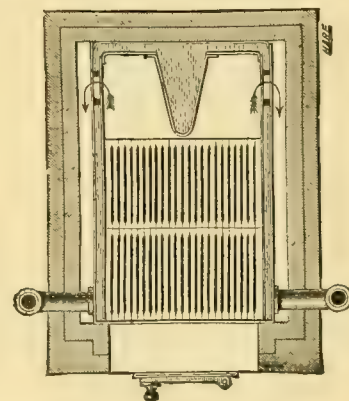
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The longitudinal section gives a view of the fire-box, water space, flues, &c.

The front elevation shows it set in brickwork, which is necessary for this class of boiler.

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		3 ft. 2 in. long	by 2 ft. 0 in. wide	by 2 ft. 0 in. deep		1000 ft.	Price	£15	0	0
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MB 2		4	by 2	by 2		2200	"	32	0	0
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Borough Engineer's Office, Municipal Buildings, Leeds, January 9, 1886.

Morley House, Bagot, St. Saviour's, Jersey, November 10th, 1886.

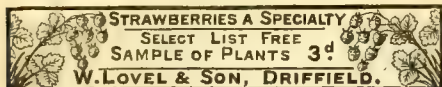
I am, Gentlemen, yours truly, THOS. HEWSON, Borough Engineer.

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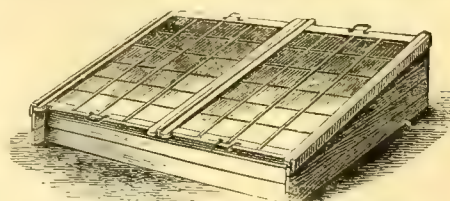
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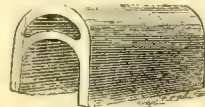
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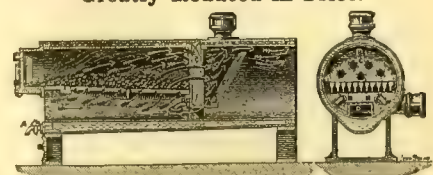
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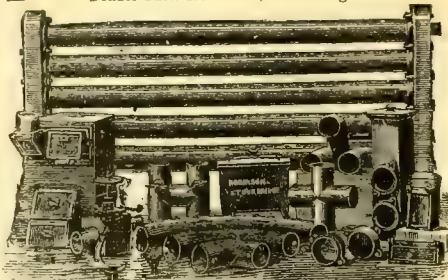
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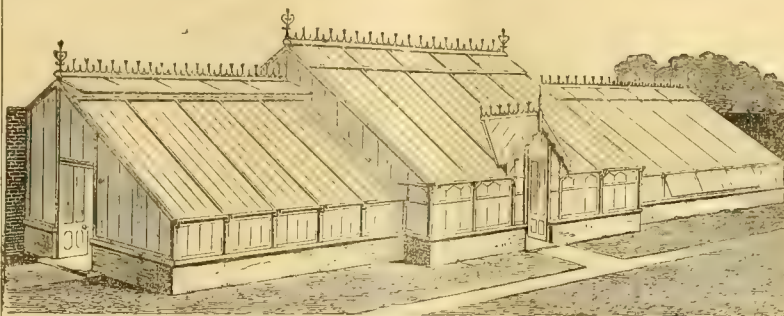
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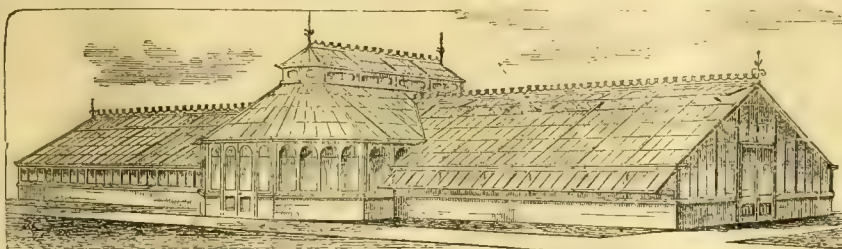
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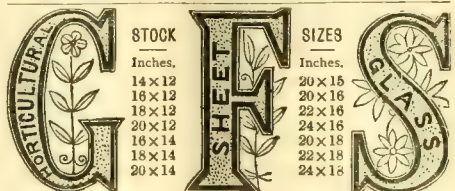
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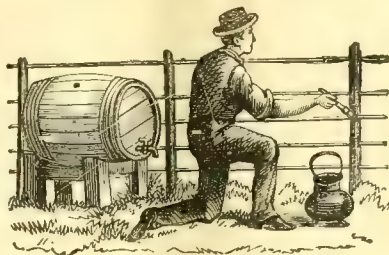


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three are kept. Must understand Vines, Greenhouse Plants,
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WANTED, GARDENER, active man, age 30
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Single-handed place. Must be well up with Vines
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Married, without family. Wife able to do Laundry Work
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of filling with credit any situation in the Gardening World.
On receipt of full particulars we will recommend a suitable
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—JOHN DOWNIE (of the late firm of Downie & Laird),
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applications from Gardeners, seeking situations, and that they
will be able to supply any Lady or Gentleman with particulars,
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DICKSONS (Limited) are always
in a position to RECOMMEND MEN of the
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GARDENER (HEAD WORKING);—Age 40, married; twenty-one years' experience in all branches of Gardening. Excellent character and references.—J. BUTLER, Murrell's Cottages, Crawley Road, Horsham, Sussex.

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GARDENER (SECOND); Age 26.—Mr. HOLLINGSWORTH, The Gardens, Quorn Court, near Loughborough, Leicestershire, can with confidence recommend P. Martin, who has been with him two and a half years. Ten years' experience.

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FOREMAN, in the Houses.—Age 27; twelve years' experience in the Cultivation of Vines, Peaches, Cucumbers, Melons, Stove and Greenhouse Plants &c. Good character from present and previous employers.—J. SMITH, The Gardens, Tolmers, near Hertford.

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Possesses valuable Hygienic properties hitherto unknown to Science.



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All who take SALT REGAL regularly are good feeders, good workers, and good sleepers, and thoroughly enjoy their lives.

Thousands of Testimonials have been received from all parts of the World.

SALT REGAL is Sold in Bottles (hermetically sealed), 2s. 6d., and can be obtained through any Chemist as all the London and Provincial Wholesale Houses regularly stock it. Do not be persuaded to take a substitute. Remember **SALT REGAL** is a Royal Patent, and any attempt at imitation is a Felony. You cannot be deceived if you observe that the White Powder turns Rose-coloured in water, no other Saline having this property. If any difficulty in obtaining it, the Proprietors will forward direct on receipt of Postal Order.

Patentees and Sole
Proprietors

FRITZ & CO., SALT REGAL WORKS, LIVERPOOL.

SALT REGAL has made hosts of friends in the Colonies and Foreign Countries, and its increasing Sale and growing popularity are bye-words among those who sell it. No Traveller should be without Salt Regal.

The GARDENERS' CHRONICLE

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Now ready, in cloth, 11s. 6d.
THE GARDENERS' CHRONICLE,
Vol. III., Third Series, JAN. to JUNE, 1888.
W. RICHARDS, 41, Wellington Street, Strand, W.C.

CRYSTAL PALACE.
GREAT ANNUAL EXHIBITION OF FRUIT,
AND
GRAND NATIONAL DAHLIA SHOW,
FRIDAY AND SATURDAY, September 7 and 8, 1888.
In conjunction with the Fruit Show arrangements have been made for a
CONFERENCE OF FRUIT GROWERS.

The questions to be discussed will include the Profitable Culture of Fruits for Market and Home Supply, the Packing, Carriage, and Sale of Fruits, their economic importance and utilization.
Honorary Secretaries to Conference, Mr. WILLIAM EARLEY, Ilford; Mr. LEWIS CASTLE, Hotham House, South Wimbledon.

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The AUTUMN SHOW will be held on WEDNESDAY and THURSDAY, September 12 and 13. Special Prizes for Fruit:—Nine dishes of Fruit, 1st, £10; 2nd, £5; 3rd, £2, in addition to Prizes set forth in the Schedule.

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NATIONAL CHRYSANTHEMUM SOCIETY.
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WILLIAM HOLMES, Hon. Sec.,
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PLEASE NOTE.—Intending Members should join at once, and so secure the full advantages for the current season—viz., admission to 4 Grand Exhibitions, 7 Floral Meetings, and the usual privileges. Ordinary Member, 5s., and Fellows, 21s. per annum.

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WILLIAM DENMAN, 7, Catherine Street, Covent Garden, W.C.
See large Advertisement, August 25, pag 205.

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HARTLAND'S ORIGINAL LITTLE BOOK of DAFFODILS and CHRISTMAS ROSE for 1888 is now ready. Price 1s. 6d.; gratis with order above 40s. Please send for copy, and if you do not like the work as a reference, its cost will be refunded. Bulbs never fail, and Gertrude Hartland's additional drawings superb.—**W. BAYLOR HARTLAND**, Seedsman, F.R.H.S., 24, Patrick Street, Cork.

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FOR SALE, or EXCHANGE for FOWER-PLANTS.

Ten Large Plants, in 8 and 10-inch pots, in splendid condition—6 *Adiantum cuneatum*, 2 *A. gracillimum*, *A. Farleyense*. Applications to
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SQUELCH AND BARMHAM, North Row, Covent Garden, W.C., are OFF TO DISPOSE of any quantity of MUSCATS and BLAQ GRAPES, TOMATOS, CUCUMBERS, FRENCH BEAN STRAWBERRIES, CHOICE FLOWERS, &c. Highest Market Prices obtained. Account Sales daily; Cheques weekly or preferred by Sender. Baskets and Labels supplied. References given.

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Geranium Cuttings.
WANTED, VESUVIUS WEST BRIGHTON GEM, MRS. POLLOCK, NEMAHON, HENRY JACOBY, good Pink and Salmon. Staprice, and if desired to EXCHANGE, what plants required.
G. B. FISCHER, Nurseryman, 30, High Street, Cham, S.E.

To Gardeners.
WANTED, all kinds of Winterperring PLANTS, Ferns, Cuttings of Beddingtuff, &c. Must be cheap. Write to
G. P., 41, Wellington Street, Strand, W.

WANTED, ROSES in large pots, well-established; Catherine Mermet, Perle des dains, and Nipheto.—Full particulars to **A. F.**, *Gardener's Chronicle* Office, 41, Wellington Street, Strand, W.C.

WANTED, for September 19, 200 Buds and a few half-blown Flowers of LA FREE ROSE. Reply at once to **GEO. PHIPPEN**, Florist, Ring.

WANTED, MANETTI STOCK—Quote quantity and price to C., care of Messrs. East & Son, Seed Merchants, 152, Houndsditch, London, E.

SUTTON'S HYACINTHS FOR POTS AND GLASSES.

SUTTON'S NARCISSI FOR POT CULTURE.

SUTTON'S TULIPS FOR POT CULTURE.

FOR LOWEST PRICES and full Instructions, see

SUTTON'S BULB CATALOGUE: beautifully illustrated with numerous Engravings and a handsome Coloured Plate, representing the leading Bulbous Flowers, and containing accurate descriptions of the choicest Narcissus, together with particulars of the best varieties of Hyacinths, Tulips, &c., for bedding. Now Ready: Post-free to intending Customers.
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Bulbs of Finest Quality only. BARR'S BULB CATALOGUE for 1888.

Now Ready. Sent free on application. Contains full Descriptive List of the best Hyacinths, Tulips, and other Dutch Bulbs in cultivation, also an interesting Descriptive List of Cape and Californian Bulbs and Tubers, including many beautiful rarities.
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ANTHURIUM SCHERZERIANUM for Sale. A number of strong, clean, and healthy plants of the best varieties. Toolarge for present owner. Very cheap.
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E. SCHMITT, HORTICULTURIST, Lyon, France. *BEGONIA HYBRIDS (REX x DIADEMA)*. The varieties which were awarded a Silver-Gilt Medal at the Paris Exhibition, 1887, and which have been described by Mr. Ed. André, in the *Revue Horticole*, February 16, 1888, are now offered for 30 francs, the 8 varieties.

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FERNs.—Pteris tremula, *P. cretica cristata*, *Lygodium scandens*, &c., 10s. per 100, out of pots; half-price for strong struck-out plants. Cash. Write, **M. SMYTH**, 18, White Horse Lane, Mile End, E.

FERNs.—FERNs.—FERNs.—To the Trade. For cash, free on rail. *Pteris tremula*, ready, for 48, 10s., 12s., and 14s.; *P. magnifica cristata*, 10s. and 12s. per 100; *P. cretica albo lineata*, 10s. per 100; *P. cretica*, 10s. per 100. All fresh-looking, and fit for present use. Price per 1000 on application.—**J. E. SMITH**, Fern Nurseries, 140, Loughborough Road, Brixton, S.W.

Hyacinths, Tulips, Crocus, Lilies, &c.
C. G. VAN TUBERGEN, Jun., Haarlem, Holland.—Wholesale CATALOGUE now ready, and may be had free on application to
Messrs. R. SILBERRAD AND SON, 25, Savage Gardens, Crutched Friars, London, E.C.

GEORGE LEE has some good strong Plants of LANTON'S “KING OF THE EARLIES” STRAWBERRY, 6s. per 100; good plants, 3s. 6d. per 100. Also “COMTE DE BRAZZA” VIOLET, fine for pit or frame work 15s. and 20s. per 100.—**Cleveland**, Aug. 25.

DICKSON'S IMPROVED MUSHROOM SPAWN, most superior, now reduced to 5s. per bushel of 14 cakes. Circular with Cultural Notes and List of Testimonials post-free on application.
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SULPHIDE of POTASSIUM (Harris).—A certain cure for Mildew on Plants, Red Spider, Aphids, &c. Enough to make 32 gallons of solution, free for 1s. 3d. The only kind to use is “Harris's specially prepared Sulphide of Potassium.” Sole Manufacturers:—**PHILIP HARRIS and CO. (Limited)**, 9, Bull Ring, Birmingham.

W. H. LASCELLES AND CO., HORTICULTURAL BUILDERS, 121, BUNHILL ROW, LONDON, E.C. Plans and Estimates Free. See large Advertisement on page 233.

SALES BY AUCTION.

Dutch Bulbs.
Every MONDAY, THURSDAY, and SATURDAY.
Great Unreserved Sales.

MESSRS. PROTHEROE AND MORRIS will
SELL BY AUCTION, at the Central Sale Rooms, 67 and
68, Cheapside, London, E.C., every MONDAY, THURSDAY,
and SATURDAY, at half-past 11 o'clock precisely, extensive con-
signments of first-class HYACINTHS, TULIPS, CROCUS,
NARCISSUS, and other BULBS, from Holland, lotted to suit
the Trade and Private Buyers.

On view morning of Sale, and Catalogues had.

Tuesday Next.
IMPORTED ORCHIDS.

MESSRS. PROTHEROE AND MORRIS are
instructed by Mr. F. Sander, to SELL BY AUCTION,
at their Central Sale Rooms, 67 and 68, Cheapside, London,
E.C., on TUESDAY NEXT, September 4, at half-past 12 o'clock
precisely, a large quantity of IMPORTED ORCHIDS, in fine
condition, comprising Cattleya Eldorado, C. Harrisoniana, C.
Loddigesii, C. citrina, Oncidium Forbesii, O. curti, O. leu-
cophilum, O. sarcodes, Odontoglossum vexillarium, O. citro-
sum, O. hastatum, O. Roehli, O. Cervantesii, Sophronia
grandiflora, S. violacea, Miltonia spectabilis, M. stellata, &c.

On view morning of Sale, and Catalogues had.

Friday Next.

GRAND IMPORTATIONS OF ORCHIDS, in the best possible
condition.

MESSRS. PROTHEROE AND MORRIS are
instructed by Messrs. Shuttleworth, Carder & Co. to
SELL BY AUCTION at their Central Sale Rooms, 67 and 68,
Cheapside, London, E.C., on FRIDAY NEXT, September 7, at
half past 12 o'clock precisely, Grand Importations of
ORCHIDS, in splendid condition, comprising Odontoglossum
vexillarium, Cattleya aurea, C. gigas, C. Mendic, Oncidium
Kramerianum, Odontoglossum crispum (Alexandria), the best
type; the exceedingly rare Chysis aurea maculata, Bollea
Palini, Epidendrum Wallisii, Compertaria macropleuron, &c.

On view morning of Sale and catalogues had.

The Ascot Nurseries, Berks.

(Opposite the Racecourse, and about 15 minutes' walk from
the Railway Station.)

Important to Gentlemen, Nurserymen, and Others, desirous of
securing one of the most valuable and celebrated NUR-
SERIES in the Trade, with all the thriving STOCK, as a
going concern, in one Lot, for SALE, by order of the
owner, who is relinquishing the business in consequence of
ill-health.

MESSRS. PROTHEROE AND MORRIS
are instructed to SELL BY AUCTION, at the Mart,
Tottenham Yard, London, E.C., on FRIDAY, September 7,
at 2 o'clock P.M. punctually, in one Lot, the valuable
long LEASEHOLD ESTATE distinguished as the ROYAL
NURSERIES, ASCOT, together with the Goodwill of the
old-established Nursery Business so successfully carried on
by the late Mr. John Standish and the present Proprietor.
The Nursery contains an area of about 22 Acres, cropped
with a General Assortment of Nursery Stock; also 38 Green-
houses, containing a total superficial area of about 44,000 feet,
heated by about 10,000 feet of hot-water piping, and numerous
Pits all stocked with an extensive collection of Hard and Soft-
wooded Greenhouse and Stove Plants. The Leasehold Resi-
dence, containing 10 Rooms, 3 well-built Cottages, and suitable
Trade Buildings for carrying on a large Business.

May be viewed prior to the Sale. Particulars, Plans, and
Conditions of Sale may be obtained on the Premises; at the
Mart, E.C.; of Messrs. MACKNELL, MATON, and GODLEE,
Solicitors, 21, Cannon Street, E.C.; and of the Auctioneers,
Surveyors, and Estate Agents, 67 and 68, Cheapside, London, E.C.

Peterborough.—Under a Deed of Assignment.

Two Days' UNRESERVED CLEARANCE SALE of the whole
of the STOVE and GREENHOUSE PLANTS, NURSERY
STOCK, UTENSILS-IN-TRADE, EXHIBITION PLANT,
VAN, &c., by Order of the Trustees of the Estate of Mr.
John House, the Freehold Nursery having been disposed of.

MESSRS. PROTHEROE AND MORRIS are
instructed to SELL BY AUCTION, on the Premises, the
Eastgate Nurseries, Peterborough, on TUESDAY and WED-
NESDAY, September 11 and 12, at 11 o'clock precisely
each day, without Reserve, the whole of the remarkably well-
grown STOVE and GREENHOUSE PLANTS, consisting of 4000
Maidenhair Ferns, 1000 Tuberoses, Specimen Palms, 1000 As-
pidistras, fine Specimen Lappagerias, 2000 Tea Roses in pots,
500 Azaleas, well set; Specimen Camellias, 1500 Eucharis
americana, 2000 Dahlias, Carnations, a fine collection of
Paeonies, 2000 Bulbs and Plants in ground, about 3 Acres of General
Outdoor NURSERY STOCK, 1000 AUCUBAS, nearly new
EXHIBITION PLANT VAN, constructed to travel on any
Railway; 20 HIVES of BEES, and numerous other effects.

May be viewed one week prior to the Sale. Catalogues may
be obtained at the Nurseries, or at the Seed Shop, Church
Street, Peterborough; of J. ADNITT, Esq., The Trustee, Oriel
House, New Road, Peterborough; and of the Auctioneers,
Estate Agents and Valuers, 67 and 68, Cheapside, London,
E.C.; and Leytonstone, E.

Swanley Junction, Kent.

GREAT UNRESERVED SALE of immense quantities of un-
usually well grown GREENHOUSE PLANTS.

MESSRS. PROTHEROE AND MORRIS are
instructed by Mr. P. Ladds to SELL BY AUCTION, on the
Premises, The Nurseries, Swanley Junction, Kent (adjoin-
ing the Swanley Junction Railway Station), on THURSDAY,
September 13, at 11 o'clock punctually in consequence of the
unusually large number of lots, immense quantities of

GREENHOUSE PLANTS, including the following:—

24,000 winter-flowering Heaths	2000 Crotons
20,000 Genistas	1000 Palms
6000 Solanums	1000 Dracenas
12,000 winter-flowering Carna- tions	5000 Zonal Geraniums, Queen of Whites im- proved
7000 Adiantum Cuneatum	2000 Ferns in variety
10,000 Tea Roses (all best varieties)	300 specimen Gardenias
1000 Clematis Jackmanni	Quantity of small Heaths
	600 White Primulas

Variety of other stock.

The Stock may now be viewed. Catalogues had of Mr. P.
LADD, on the Premises, and of the Auctioneers and Valuers,
67 and 68, Cheapside, London, E.C.

Upper Edmonton.

About 3 minutes' walk from Angel Road, and 8 minutes' walk
from Silver Street Stations, G.E.R.

THIRD ANNUAL SALE.

MESSRS. PROTHEROE AND MORRIS are
instructed by Mr. H. Bellay to SELL BY AUCTION, on the
Premises, the Dyson's Lane Nurseries, Upper Edmonton,
on MONDAY, September 17, at 12 o'clock punctually, in con-
sequence of the large number of lots, about 40,000 STOVE and
GREENHOUSE PLANTS, remarkably well grown and in the
best possible condition, comprising:—

20,000 FERNs, including Adiantum cuneatum, Lomaria
gibba, the most useful sorts of Pteris, Adiantum elegans (a
useful variety for cutting), and many rare and choice sorts.

10,000 TREE CARNATIONS, including Middle, Carle, A.
Alegatiere, Dr. Raymond, Andalusia, Fride of Penshurst,
Lucifer, and all the best sorts.

CRIMSON CLOVES, CARNATION Mrs. REYNOLDS
HOLE, &c.

TEA ROSES—extra strong Maréchal Niel and Gloire de
Dijon, with growths from 15 to 18 feet long; The Bride (new
white), and other good sorts.

A splendid lot of AMPELOPSIS, CLEMATIS, IVIES, &c.

AZALEAS, white, large plants for cutting from; English-
grown CAEILLAS, full of bloom-buds; BOUVARDIAS,
including the new beautiful scarlet President Cleveland;
Double White PRIMULAS, CYCLAMEN, EUCHARIS AMA-
ZONICA, &c.

CROTONs, a splendid lot of beautifully coloured sorts;
FICUS ELASTICA, ARALIA SIEBOLDII, &c.

Many thousands of small HEATHS, GENISTAS, &c.

May be viewed. Catalogues had on the Premises, and
of the Auctioneers, 67 and 68, Cheapside, E.C.; and Leyton-
stone, E.

Sidcup, Kent, S.E.

About ten minutes' walk from New Eltham Station, S.E.R.

GREAT ANNUAL TRADE SALE OF WINTER-BLOOMING
HEATHS, &c.

MESSRS. PROTHEROE AND MORRIS are
instructed by Messrs. Gregory & Evans to SELL BY AUCTION
on the Premises, The Longlands Nursery, Sidcup,
S.E., on FRIDAY, September 21, at 11 o'clock precisely, in con-
sequence of the large number of lots, without reserve, an
immense quantity of unusually well-grown WINTER-
BLOOMING HEATHS and other PLANTS, consisting of

30,000 Erica hyemalis	5,000 Erica gracilis
1,000 „ Caffra	1,000 mixed varieties of Ericas
3,000 „ Cavenishii	3,000 Erica magnifica
3,000 „ coccinea minor	5,000 Genistas
All 10 and 18-pots.	10,000 Bouvardias of sorts
10,000 Sonum, well berried	6,000 Cyclamen, best market strain
1,000 Double Primulas	5,000 Adiantum cuneatum
1,000 Psesthus	1,000 Ivies of sorts
12,000 Res. grown especially for the Sale, including one of the best lead- ing sorts for pot cul- ture	210,000 small Ferns for grow- ing on

The whole stock will be found up to the quality of previous
years.

May be viewed. Catalogues had on the Premises, and of the
Auctioneers, 67 and 68, Cheapside, London, E.C., and Ley-
tonstone, E.

Enfield Highway, N.

The Brimdown Nursery, adjoining Brimsdown Station, Great
Eastern Railway.

WENTH ANNUAL TRADE SALE.

MESSRS. PROTHEROE AND MORRIS are
instructed by Mr. John Maller to SELL BY AUCTION, on the
Premises, The Brimsdown Nursery, Enfield Highway,
N., on THURSDAY, September 20, at 11 o'clock precisely, in con-
sequence of the unusually large number of lots, without
Reserve, wards of 1200 lots of remarkably well-grown STOVE
and GREENHOUSE PLANTS, mostly in 48-pots, and fit for
immediate Sale, consisting of:—

15,000 winter-blooming heaths, including Ericas, gracilis, Erica, Wilmorea, &c., and extra large Cavenishii	1,000 double white Primulas
5,000 Saums, exception- ally well grown	1,000 Stove and Greenhouse Climbers
5,000 Fes, Adiantums, Ericas, &c.	Dipladenias of sorts
3,000 Tree Carnations, lead- ing varieties	Allamandas
500 Erica, sorts	Bougainvilleas
5,000 Bouvardias	Stephanotis
3,000 Genistas	Tacsonias
1,000 Genistas, Improved Queen of Whites, &c.	1,000 Passifloras and Ampe- lopus Veitchii
	Crotons and Dracenas, beautifully coloured
	1,000 Palms, Ficus, Grevil- leas, &c.
	Large Azaleas for cut- ting

Many thousands of small ERICAS, GENISTAS, FERNS, &c.; large
quantities of ACACIAS, GARDENIAS, EUPHORIA JACQUINIFLORA,
CHRYSANTEMUM, POINSETTIA, EUNOMIA OVATUS aureus, in
stores, &c. suitable for the Trade, and other extensive buyers.

May be seen any day prior to the Sale. Catalogues may be
had on the Premises, or at the Brunswick Nursery, Tottenham;
and of the Auctioneers, 67 and 68, Cheapside, London, E.C., and
Leytonstone, E.

N.B.—The Auctioneers desire to call the attention of intend-
ing purchasers to this GREAT ANNUAL TRADE SALE,
which hitherto taken place at the Brunswick Nursery,
Tottenham; but, in consequence of the Lease of that Nursery
having fully expired, the Sale this year, and in future, will
take place above, adjoining the Brimsdown Station, G.E.R.
The whole of the Stock is in first-rate condition, the ERICAS
being especially well set for flower, and the Solanums unusually
well berried. There will also be this season a Sale at The
BRIMS DOWN NURSERY, Tottenham, on THURSDAY, Sep-
tember 20, which a separate Advertisement will appear.

Lee, Kent, S.E.

GREAT ANNUAL TRADE SALE, to commence punctually at
11 o'clock, in consequence of the large number of lots.

MESSRS. PROTHEROE AND MORRIS are
instructed by Messrs. B. Maller & Son, to SELL BY
AUCTION, on the Premises, The Burnt Ash Lane Nurseries,
Lee, S.E., adjoining the Railway Station, on TUESDAY,
September 18, at 11 o'clock punctually, without reserve,
25,000 Winter-blooming HEATHS, beautifully grown, and
remarkably well set with bloom buds, including:—

15,000 Erica hyemalis	Alsophilla australis, in 24 and 18-pots
5,000 „ gracilis	500 Epacris, well grown.
Large quantities of Melan- thera, ventricosa, per- spicua, erecta, Caven- dishii, Caffra, and other kinds	Boronia megastigma Quantity of extra strong Maré- chal Niel and other Tea Roses
15,000 Small E. hyemalis and 5,000 Small E. gracilis, for growing on	4,000 Grevillea robusta Palms
8,000 Solanum capsicastrum, in berry	Ficus elastica Greenhouse Pass-on- flowers
6,000 Bouvardias, single and double	Poinsettias Anapelsia Veitchii Stephanotis
2,000 Genistas, very fine	Plumbago capensis flore alba
2,000 Adiantum cuneatum	Large Gardenias for cut- ting
3,000 Lomaria gibba, true, compact variety, and other Ferns	500 Clematis Jackmanni

Beautifully Coloured Crotons, &c.

May be viewed. Catalogues may be had on the Premises,
or of the Auctioneers and Valuers, 67 and 68, Cheapside, E.C.,
and Leytonstone, E.

N.B.—Messrs. P. & M. desire to call the attention of intend-
ing purchasers to the Stock to be offered as above. The
Plants are remarkably well grown, fit for immediate Sale, and
the whole will be found in an equally good condition as former
years.

Lea Bridge Road, E.

ANNUAL UNRESERVED SALE of fine Winter-flowering
HEATHS, &c.

MESSRS. PROTHEROE AND MORRIS are
instructed by Mr. John Fraser to SELL BY AUCTION, on the
Premises, the Lea Bridge Nurseries, Lea Bridge Road,
Leyton, E. (close to the Hoe Street Station, Great Eastern
Railway) on WEDNESDAY, September 19, at 11 o'clock pre-
cisely, in consequence of the large number of lots. A large
quantity of WINTER FLOWERING and OTHER PLANTS,
including:—

12,000 Erica hyemalis	2000 Maréchal Niel and other Roses
3000 Tree Carnations	6000 Clematis Jackmanni and other best named sorts
4000 Erica gracilis	5000 Bouvardias, including a lot of "President Cleve- land"
2000 Anapelsia Veitchii	5000 Solanums
4000 fine named Hollyhocks from seed	1000 Clematis indivisa lobata
1000 Lappageria rosea superba	
6000 Cyclamen persicum (Fra- ser's superb strain)	

and a great number of Araucaria excelsa, Epacris, Passiflor-
flowers, Jasmines, Honey sucklers, variegated Ivies, Lappageria
alba from seed, and other plants.

The whole of the Stock is in the best condition, and ready
for immediate Sale.

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the Auctioneers, 67 and 68, Cheapside, London, E.C., and
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Forthcoming Sales of Nursery Stock.

MESSRS. PROTHEROE AND MORRIS de-
sire to call attention to the following SALES, which
have already been fixed:—

OCT. 10.—AT THE MANOR LANE NURSERIES, LEE, by
order of Mrs. North.

OCT. 15 to 20.—Six days' Sale at the various NURSERIES at
NORBITON and LONG DITTON, by order of the
Executors of the late Mr. Thomas Jackson.

OCT. 22 to 27.—At the NURSERIES, SUNNINGDALE, by
order of Mr. Charles Noble, six days' Sale.

NOV. 6.—AT THE HALE FARM NURSERIES, TOTTENHAM,
by order of Mr. T. S. Ware.

NOV. 13 to 15.—AT THE HORSELL NURSERIES, WOKING
by order of Messrs. H. & C. Cobbett.

Other Sales are in course of being arranged, and the dates
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The Auctioneers desire to call the attention of Noblemen,
Nurserymen, and others to these Auctions, and will be pleased to
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AUCTION, at his Great Rooms, 38, King Street,
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and SATURDAY, at half-past 12 o'clock precisely each day, first
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and BUD will take place at his Great Rooms, 38, King
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at half-past 12 o'clock precisely, and he will be glad if gentle-
men desirous of entering plants for this Sale will SEND
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MR. J. C. STEVENS begs to announce that
he has received instructions from Robt. Warner, Esq.,
of Chelmsford, to offer for SALE BY AUCTION, at his Great
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MIDDLE OF OCTOBER, a portion of his well-known
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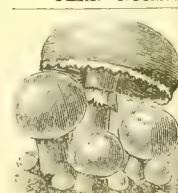
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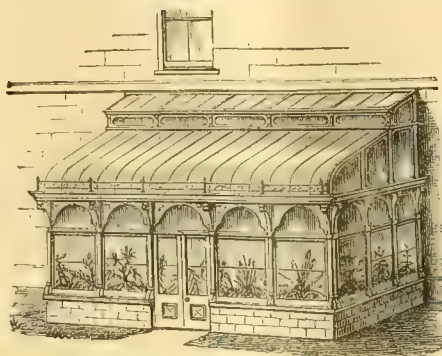
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As a Supplement
TO THE
GARDENERS' CHRONICLE
FOR
September 22,
WILL BE
Published an Ink Photograph
OF
VIEWS in SHRUBLAND PARK,
IPSWICH.



THE

Gardeners' Chronicle.

SATURDAY, SEPTEMBER 1, 1888.

BLYTHSWOOD.

THE visit of the Queen to Glasgow and
neighbourhood last week has rendered the
fine residence of Sir Archibald Campbell famous
as one of the few private homes of Scotland
which Her Majesty has been pleased to make her
temporary residence.

It is a rural place lying on the southern
bank of the Clyde, curiously surrounded on
its north-west and east boundaries with
evidences of the commercial and manufac-
turing activity for which this upper reach
of the Clyde is famed. A good deal of this is
seen from various points of the estate. Here
a shipbuilding-yard, there a manufactory con-
nected with that industry, and though little of the
river itself is seen from any part of the grounds,
owing to the abundant furnishing of trees which
intercept the view, the gliding of the tall masts
seen over the tree-tops affords indication of the
commercial activity beyond. It is a somewhat
singular sensation to one bent on horticultural
quest only to find himself interrupted in the
admiration of a fine park tree by the towering spars
of a ship, no portion of which he sees except the
topmasts moving gracefully between his object
and the sky-line; speculations other than the age
and proportions of arboreal subjects seize the
mind, but I cannot follow them further at present
than to say they must be frequently indulged in
at Blythswood if I may judge by the experience I
had during my brief visit the other day.

Renfrew, which is the station for Blythswood,
is about 9 miles from St. Enoch's Station,
Glasgow, and the visitor, if he inquires the way
of the railway officials on arriving there, will be
directed to a private entrance from the platform
to the grounds. The woods of Blythswood in
this direction, in fact, reach their limit, and give
a fine rural effect to Renfrew Station. The
estate is extensive, and contains fine specimens
of Ash, Beech, Spanish Chestnut, Sycamore, and
Oak, the latter comparatively young, and remark-
able for great length and cleanness of bole. The
grounds are too level to be called picturesque,
but the grouping of the trees and shrubs has

been so admirably managed as to break and give variety to the rather flat natural features.

Surrounding the mansion are extensive lawns, on which fine old Beeches, Oaks, Spanish Chestnuts, and other ornamental deciduous trees are studded with fine effect. Conifers as a rule do not thrive as do deciduous trees. Much has been done by the late and the present proprietors to establish some of the best types of Conifers, but success has not attended their efforts. There are, however, some excellent specimens of *Abies Alberti* and *Cedrus atlantica*, which bid fair to give satisfaction, judging from their health and dimensions to-day. Some of them are from 20 to 30 feet in height, and well furnished and vigorous.

Rhododendrons are a special feature in the furnishing of the grounds. They thrive everywhere, and are of good types, from choice named hybrid forms to selected seedlings of *R. ponticum* and *catawbiense*. With these, and the fine masses of deciduous flowering shrubs, Lilacs, Thorns, &c., judiciously distributed as they are, the place must be one of the most gay in spring and early summer.

MEMORIAL TREES.

Of these there are many of national interest—as, for instance, a fine thriving Lime, planted on September 27, 1875, by the late Prince Leopold on the occasion of his first visit to Blythwood; and a pair of Sycamores standing near each other, one planted by the same Prince when Duke of Albany, and the other by the Duchess of Albany, on October 17, 1882. They are both fine young trees, of about 25 feet in height. Two Limes were planted on August 24, one by the Queen, and the other by Her Grand Ducal Highness, Princess Alice of Hesse. And yet another—a stout Sycamore—was planted by the Marquis of Salisbury on the occasion of his visit to Blythwood on October 4, 1884.

THE GARDENS.

Lying to the east of the mansion, and a considerable distance from it, are the gardens. The way to them leads the visitor through beautiful shrubberies, and over lawns enlivened by trees of much beauty, and chiefly deciduous, till the beautifully situated house of Mr. Methven, the able and trusted gardener, is reached. Around are found fine specimens of *Cupressus Lawsoniana* in considerable numbers, many of them having a height of 20 feet, and which, unlike other Conifers here, are healthy in appearance.

Immediately beyond a fine gateway opens on a vista leading into the flower-garden. This is a charming spot, surrounded by luxuriant banks of Rhododendrons, and by walls entirely clothed, so as to appear a living screen of shrubs, with Ivies in rich variety, *Ceanothus*, *Cotoneasters*, and many other foliage and flowering plants. It is of large extent, and is laid out in a free and natural style, the only feature at all approaching formal or geometric character, being a large central bed with a quadrangular base but scroll-like outline which forms the termination of the vista, and which is planted tastefully with characteristic foliage and flowering plants. Surrounding this, on the opposite side of a gravel walk, are two beautiful hedges of Golden Yew, in faultless order and symmetry. Many of the beds and borders are filled with useful things for cutting, such as Stocks, Carnations, Picotees, Pinks, &c., which, while they help to fill the vases indoors, give an air of sweetness and variety which no mere arrangement of bedding plants could impart.

THE KITCHEN GARDEN

is of considerable extent and well walled, the walls being well furnished with fruit trees in good order, but, unfortunately, this season they are not—as they usually are—well cropped, the only really good crops being Morello Cherries, spring frosts and adverse weather since then having destroyed almost everything else. Novel among wall fruits we observed some remarkably fine American Blackberry Wilson Junior fruiting abundantly. My opinion of this much lauded and equally condemned fruit rose considerably on seeing what it was capable of here. Small fruits, such as Strawberries and Currants, are abundant.

The indoors requirements of the garden are met in numbers of Peach-houses, vineries, early, succession, and late Fig-houses; several houses devoted to Plums, Cherries, and Apricots, Melons, Cucumbers, and Pines, all the contents of which bear testimony to Mr. Methven's skill as a cultivator.

Two houses are devoted to *Passiflora edulis* and *Stephanotis floribunda*, the latter with the remains of a fine crop of bloom upon it, and the former with plenty of fine fruit coming out. Numerous pits are devoted to succession Pines, of which the stock is fine and promising, and to the production of stocks of flowering plants of the usual stamp for winter supplies. In some also are planted out Gardenias, which were in rare health, and thoroughly clean; and in others numerous Tea Roses, planted out, which are the special favourites of Lady Campbell.

Hardy herbaceous plants form a considerable feature in the borders surrounding the quarters of the kitchen garden and other parts in connection with the flower garden. Alpine Strawberries are grown largely, and Strawberries for forcing, which were being potted up in their fruiting-pots, are done by the thousand.

NEW OR NOTEWORTHY PLANTS.

ODONTOGLOSSUM HRUBYANUM, n. sp.*

I HAVE before me a five-flowered lax raceme. The flowers are as large as those of a very good *Odontoglossum* lœve. Sepals and petals cuneate lanceolate, deep sepia-brown to horse-chestnut, with yellow tops, and the bases of the lateral sepals of the same colour. All those organs are bent down. Colours very pallid outside. Lip with a stalk adnate to the column at the base. Lamina pandurate, slightly acute, denticulate on the anterior side, light ochre, with a bilobed horse-chestnut-brown blotch before the basilar callus. Callus whitish, strong, bidentate in front, upright; an apiculus on each side at its base; a tumour on each side of the very base. Column compresso-trigonal, curved, with nearly obliterate very narrow crenulate wings. The portion near the stigma is much dilated. Colour whitish; lateral limbs of fovea reddish-brown, and a spot of the same colour under the fovea, quite transverso-pandurate, viz., bilobed towards the base and towards the apex. Anther with a keel over the mid-line.

A very careful drawing is at hand, prepared by Mr. V. Fans, the enthusiastic and very skilful grower of the possessor of the plant. It shows a plant comparable with an *Odontoglossum Pescatorei*, yet the bulb is said not to be ventricose, as it is seen some-

* *Odontoglossum Hrubbyanum*, n. sp.—Racemosum; sepalis tepalisque cuneato lanceolatis acutis deflexis (semper?), labello ab ungue gracili partim columnæ adnato pandurato obsolete acuto lateribus denticulato deflexo; callo valde antice bidentato in basi, apiculo utriusque basin versus addito, tumore basi utriusque columnæ juxta foream ampliato; alis prope obliquis crenulatis. Ex Peru mrs. Hubsch. imp. exc. F. Sander, florentum misit exc. liber Baron Hrubby de Gelenyi. H. G. Rehb. f.

times in that plant. There are two ligulate acute leaves under the bulb, and two, one nearly attaining a span, on it. It is compressed, pyriform, with furrow 5 centimetres high by 3 wide.

It is a Sanderian introduction. Mr. Fans tells me it came from Peru in 1883 through Mr. Hubsch.

It bears the name of Baron Hrubby von Gelenyi, of Peckau, near Kolin, to whom it is dedicated with much satisfaction and gratitude. Amidst all the numerous collectors of the Continent the Baron and Consul Kienast Zölly, of Hierslanden, Zurich, bear an especial stamp by their enduring love, steadiness, high intelligence, and long experience. H. G. Rehb. f.

ONCIDIUM JONESIANUM FLAVENS, n. var.

This very fine variety has the spots on the sepals and petals yellowish-green, and the hue on the lip and column is yellow too. It was kindly sent by Mr. B. S. Williams, of Holloway, London, who had obtained it from T. Slatter, Esq., Stand Hall, Whitefield, Manchester. H. G. Rehb. f.

THE DEPRECIATION OF CHINA TEAS.

THE rapidity with which the taste for Indian and Ceylon Teas has spread in England is making itself seriously felt in the older Tea growing country of China. The British Consul at Hankow, referring to this subject, says:—Comparing the season 1880—1881 with that of 1886—1887, we find that the decrease in the exportation of China Teas was 23,800,000 lb., and the exportations of 1887—1888 was 20,000,000 lb. less even than this. The cause is evident; it is the increased production of better Tea in other parts of the world, especially in British India, Ceylon, and Java.

The falling off in the export of China Tea is a most serious loss of profit to the native producer and merchant, and a loss of revenue to the Chinese Government. The authorities in Peking have felt the matter to be so grave, that the Commissioners of Customs at Hankow and at the other Tea exporting ports, have been directed to make enquiries in order to find out the causes of this decline, and to suggest a remedy. As a result of these enquiries the following conclusions have been arrived at:—That Indian and Ceylon Teas are better than Chinese, although the Shanghai Tea tasters assert that China Tea has naturally the better flavour. All admit that the Indian Teas are better grown and better prepared; that they are stronger and stand more watering. On the other hand, the balance of evidence is in favour of the China Teas keeping longer than the Indian, probably because they have had more moisture extracted, the absence of which prevents fermentation. It is said, too, that the removal of moisture means the removal of tannin, glucose, and other elements which make Tea unwholesome, whence it follows that the drinking of Indian tea, in which these hurtful substances exist, is more deleterious than the use of China Teas from which they have been eliminated.

In India and Ceylon the Tea plants are grown with an amount of care and attention which would strike a Chinese Tea grower as superfluous, if not ridiculous. A soil is selected at least 3 feet in depth, so that the tap-root of the Tea plant may suck moisture from the subsoil in seasons of drought. The plants are grown in rows, so that the bushes may touch each other at the sides, while room is left at the back and front for the pickers to pass. Each bush is allowed to grow to a maximum height of 5 feet. Fertilising and pruning are carefully attended to. The latter is done with such thoroughness that as many as twelve and sixteen pickings can be got from a single bush in a year, and thus an acre of ground is made to produce the largest obtainable crop. It is said that an acre of Indian Tea garden will produce 600 lb. of Tea annually. The leaves are picked before they are overgrown, and are bruised and rolled into balls with the hand that fermentation may take place. Then the balls are broken up, and the first firing is done—if possible, on the very day that the leaves have been picked, in

order to fix all the properties essential for strong and pungent Tea. The rest of the preparation is all done by machinery, and great care is taken to have good leads and packages.

In China there is an indifference to the selection of proper soil, so that in seasons of drought there is a deficiency of sap. Old Tea bushes are rarely replaced. Manuring, removal of under-growth, and pruning, are all done in a happy-go-lucky fashion, with no idea that system and method are all essential if the growers wish to get as much Tea off an acre as is produced in India and Ceylon.

There is the same want of care and of system in the manipulation of the Tea leaf in China as there is in the growth of the plant. Every operation is done by hand only. Instead of bruising the leaves by rolling, the Chinese half dry them in the sun, and then place them in bags, which are trodden until a greenish viscid fluid exudes, which may contain some of the best elements of the Tea leaf. Days may elapse between the time of picking and of fermenting the leaf. It often happens, too, that the grower instead of picking the leaves when they are fresh and in perfection, will deliberately wait for them to grow larger, in order that their weight may be increased. It is stated that the late picking of 1887 made the crop 20 per cent. worse than it need have been. Lastly, in China there is not the same care in packing that there is in India. The remedies proposed for improving this unfortunate state of things in the Hankow Tea trade are threefold:—1st, the reduction of supply; 2nd, the adoption of a better system of cultivation and preparation; and 3rd, the abolition or reduction of taxation.

Another remedy it is said has also been suggested, namely, to drive Indian Tea out of the market by sending a lecturer through England to preach a crusade against it, and to proclaim its unwholesomeness and the danger arising from drinking it.

Whatever might be the result of a better system of cultivation and preparation, the last proposition would probably hasten its decline, by advertising, and consequently increasing the sale of, Indian Tea.

ORCHID CULTURE.

THE following cultural notes are extracted from recent numbers of Messrs. Warner and Williams' *Orchid Album*:—

Schomburgkia undulata is an evergreen plant, with fusiform stems, a foot or more high, bearing lively green leathery leaves, which are from 6 to 8 inches in length. The spike is terminal, from 2 to 5 feet long, and bearing near the upper part a somewhat dense raceme of flowers. The sepals and petals are purplish-brown, much undulated, and the lip of a rosy-purple hue. It blooms in March, and the flowers continue in perfection for several weeks. This plant succeeds best when grown in a hanging basket, and roots freely in the atmosphere; it also thrives well on rafts or blocks of wood, but under these conditions it requires more attention to keep it supplied with moisture. The growth commences after the flowers have faded, and during the formation of new bulbs it should be syringed twice a day in warm weather, in order to encourage it to grow vigorously, and thus to produce white blossoms. This is usually considered a shy-flowering species, but if grown with full exposure to the light there need be little fear but that it will bring forth its flowers annually. In a state of Nature this plant is found growing upon trees and on rocks in exposed situations, where it is subjected to a decided dry and rainy season, the latter being its time of flowering and growing, at which period it requires great care and attention to keep it properly supplied with moisture; but after growth is completed, just a moderate quantity only is requisite in order to keep the bulbs and leaves from shrivelling and becoming impoverished. We find the temperature of an intermediate-house to suit it admirably, and that it does not appear to like much soil about its roots; this should be the same as we have previously recommended for *Cattleyas*.

Dendrobium Fytchianum roseum is a distinct and

pretty deciduous variety. The stems are slender, cylindrical and erect, from 1 foot to 15 inches high; the young growths appear about the same time that the flowers begin to show upon the leafless stems of the previous year, so that, although the plant is deciduous, the flowers are accompanied by the green leaves of the new shoots. The flowers are produced both on terminal and lateral racemes, and are of a delicate rose colour, the throat being of a darker hue. It blooms during the months of February and March, and continues in beauty some considerable time. This variety, like the species; is 'best grown in the East India house, suspended from the roof, in such a position that it may obtain the full influence of the light, but it will require a little shade at mid-day, when the sun attains its greatest power. We find small pans or baskets admirably adapted for this and similar small and tender plants. It requires but a small amount of material about its roots, and this should consist of rough fibrous peat and living sphagnum moss, which should always be kept in a sweet condition by good drainage—stagnant material about it often causes sudden death, but more often leads to an unhealthy condition, in which the plants gradually dwindle away. It requires a liberal supply of moisture during its growing season, and also slight syringing in the morning and again in the afternoon. This assists in keeping away red-spider, which frequently attacks these small tender-leaved plants.

Cattleya Harrisoniae violacea is a charming evergreen variety, resembling the typical plant somewhat in its growth, but is sometimes taller. It also has the peculiar habit of making two growths in one season, and often flowers are produced upon both growths, thus its seasons of flowering may be said to be in April and May, and again about July, August, and September, lasting in full perfection for about four weeks. It is a very useful plant, both for home decoration and for public exhibition purposes. The sepals and petals are of a rosy-purple; lip same colour, stained with yellow in the centre. This *Cattleya* thrives well when placed at the coolest end of the intermediate-house, where it can obtain full exposure to the light, but it requires shading from the sun during the hottest part of the days in summer. The material we use for this plant is the same as that of the majority of *Cattleyas*; that is, a good fibrous peat and sphagnum moss. It may be grown in either a pot or basket, but must have perfect drainage. A moderate supply of water is necessary during active growth, and when that is completed, just enough moisture to keep the bulbs and foliage in vigorous condition is ample. When the plant shows signs of renewed growth, increase the water supply, to induce the formation of new roots, and thus the growths will become stronger.

Houlletia Brocklehurstiana is a handsome and showy species, growing to upwards of 2 feet in height, and has a conical furrowed pseudobulb, which bears a single broadly lanceolate light green leaf. The flower-spike proceeds from the base of the bulb, and is erect, some 12 inches in height, bearing numerous very fragrant nodding flowers, which are nearly 4 inches in diameter. Sepals and petals rich sienna-brown, spotted with dark purplish-brown; lip yellow, profusely spotted with the same colour as the other portions of the flower. They are deliciously sweet, and continue in beauty about a fortnight. This species is of free growth, and thrives well in an intermediate or *Cattleya*-house, but it grows equally well with us in the *Odontoglossum*-house, where it flowers abundantly. The bulbs of this plant should be well matured; this is of special importance if good results are expected. Let the plant have its growing season at the proper time, and encourage it as much as possible to throw up new growths, which should appear about the time of flowering. During active growth it requires a moderate supply of water to its roots, but when the growth is completed withhold water, and allow the plant to have a thorough rest, always being careful to avoid distressing it. When the flower-spikes and young growths begin to show, gradually supply water

regularly, in order to assist the blooms and enable it to make good growths for another season. This plant requires shading from the hot sun, but this must be done with a very thin material, as it likes good exposure to the light. We find rough fibrous peat and living sphagnum moss a fine compost for it, adding some nodules of charcoal, and draining well. The roots enjoy a great deal of freedom, therefore elevate the plant well above the rim of the pot, to encourage them to ramble.

Vanda lamellata Boralli.—This small-growing *Vanda*, like several others which we have already figured in the *Orchid Album*, requires more care than some of the larger-growing kinds which we have enumerated above; that is to say, it thrives best when grown in baskets or in pots suspended from the roof near the glass, or if not suspended the plants should be arranged upon the side tables, where they may obtain an abundance of light. A thin shading in order to break off the sun's rays will be, however, necessary for the well-being of these plants, but the shading should never be down when the sun is not shining; attention to these few remarks will tend to produce strong and robust growth, and a profusion of flowers. On the other hand, if they are too heavily shaded, the foliage becomes weak, the growth does not ripen, and consequently has not strength to flower; besides this it often causes the bottom leaves to fall off, and thus the plants lose much of their ornamental appearance; for a well-grown *Vanda* is an extremely beautiful object, even without its blooms. This plant, being a native of the Philippine Islands at no great altitude, requires the heat of the East India-house, and enjoys a moderate supply of water during its growing season, which is in the summer months. In the autumn and winter less water will be necessary, but as these plants are growing more or less all the year round, and have no thick and fleshy pseudobulbs to support them through a period of drought, the material must always be kept in a moist condition. We find living sphagnum moss the best material in which to grow this plant, and the pots or baskets must be well drained.

Dendrobium macrophyllum.—This plant grows naturally in the jungles of Java, in situations where it is both hot and moist nearly all the year round, consequently the warmest end of the East India-house will be found the most suitable place in which to cultivate it. Whilst growing, it must be abundantly supplied with water; after the growth is finished it must not be kept entirely without moisture, but just enough to keep the plant from shrivelling, and to ensure healthy foliage, will be sufficient, and in the spring of the year its flower-spikes will be developed. This plant begins to make new growth soon after it has flowered, and this is the proper time to repot it, if requisite. Never allow stagnant soil to remain about its roots; if the plant should fall into bad health, it should be shaken out of the old soil, or the roots washed, and any decaying or decayed parts should be cut away, repotting in sweet fresh material with good drainage. It requires but little soil to grow in, and we find good fibrous peat and sphagnum moss the best material for it. Shade is very essential to this plant during the summer, as doubtless in a wild state it obtains partial shading from the surrounding trees. This plant does not like being much disturbed, and if it is in a healthy condition there is really no necessity to do so.

Cypripedium Acanthaceum.—As before remarked, this plant thrives best when grown in the *Odontoglossum*-house, in a temperature ranging from 45° to 50° of heat, during autumn and winter; indeed, the same temperature during the whole season as that given the *Odontoglossums* of the *Alexandra* (crispum) type, with a good supply of moisture to the roots during the growing season (which is nearly all the year round), suits this plant exactly. A slight syringing overhead during the spring and summer will also be found advantageous. In order to produce strong or healthy foliage, the plant should be exposed to the full light, but it requires to be shaded

from the bright sun during summer. The material we find to suit this plant is good fibrous peat or leaf-mould, adding a small quantity of turfy loam; the whole should be well incorporated, and the pots well drained before the soil is put into them. Good drainage is particularly important for *Cypripediums*, or the roots are very apt to decay, and without good roots it is not possible for a plant to remain in a healthy condition. This plant is easily propagated by carefully taking off the young side shoots, but these should be rooted before they are removed from the parent plant; this operation is best performed after growth is completed, or when the plants are at rest. The young shoots should be put into small pots, and placed in a warm house until they are thoroughly rooted and well established, after which the cool-houses is best adapted to their requirements. These plants must be kept free from all insects, or they will become permanently disfigured.

Masdevallia Harryana decora.—This variety requires the same treatment as the species, that is to say, it should be grown in a pot with ample drainage, and the potting material should consist of fibrous peat and living sphagnum moss. It requires a liberal supply of water during active growth, after which a much less quantity will suffice, though care should be taken to prevent its ever becoming dry, and to keep the soil moderately damp at all seasons. We find it advisable during the winter months to keep *Masdevallias* somewhat warmer than the *Odonoglossums*; they are plants that enjoy plenty of light, but require to be shaded from the sun. These plants are easily increased by dividing the creeping stem with a sharp knife, but avoid cutting the roots; these must be separated by the hand, and the operation is most successful when performed on vigorous plants, just before starting into growth. These plants are subjected to the attacks of insects, which are very injurious to them if not speedily destroyed, more especially during the time they are making their young growth and are producing their flower-spikes.

Aphides and thrips increase very rapidly if not kept under. We find fumigating with tobacco-paper is not good for the plants, but we have found the use of tobacco-steam, as applied in a new apparatus, which we have introduced into this country, called the "Thanatophore," most beneficial in destroying these pests, moreover it does not injure the young growths or flowers. These insects, if allowed to remain on the plants, cripple the flower-buds and young growths so much that they are prevented from opening and attaining their proper size; besides which they are a great disfigurement to a collection of plants.

Cattleya Lawrenceana.—We cultivate this *Cattleya* in the same heat as the East Indian plants, suspended near the glass in a stove, where there is but little shade, and where it appears to thrive well. When in bloom it is removed to the *Cattleya*-house, to be replaced in its old quarters when the flowers are past. In all probability this *Cattleya* would do well at the warm end of an intermediate-house, but its wild habitat suggests the necessity of a little higher temperature, and it also requires to be shaded from the hottest sun in order to preserve its leaves of a good colour, which is a very essential point in the cultivation of *Orchids*. In the matter of potting, it requires the same material as recommended for *C. Mossii*, viz., good fibrous peat mixed with a little sphagnum moss, and with perfect drainage, as the plant requires a fair amount of water in the growing season; but during rest very little will suffice, indeed just enough to keep the plants from shrivelling and in a healthy condition being all that is necessary; and in spring, when the flowers begin to show, the plants will then be much benefited by a little extra water to encourage their blossoms to open.

Batemannia Colleyi is a dwarf, compact-growing plant, forming dark green bulbs about 2 inches high, and bearing similarly dark green leaves about 8 inches long. The flowers are of a curious form, borne upon short spikes, which spring from the sides of

the bulbs near their base, and which form a cluster round them; sepals and petals purplish-brown, and the lip white, tinged with rose. Its flowering season is during the months of March and April, and the blossoms continue in beauty for a considerable time. This species is by no means difficult to cultivate; it should be treated as a pot plant, and be well drained, the best material we can recommend to plant it in being good fibrous peat and sphagnum moss. It should be elevated some 2 or 3 inches above the rim of the pot, and treated to the temperature of the intermediate or *Cattleya* house. During the growing season a moderate amount of water is essential to its well-being, but during the dull days in winter a partial drying is equally necessary, while its resting must never extend to the shrivelling of its bulbs. If it is more convenient, this plant will grow equally well in a hanging basket; but we have suggested pot culture on account of its clustered flowers, which are seen to better advantage grown in this manner.

LITHOSPERMUM GRAMINIFOLIUM.

ONLY three of this section of *Lithospermum*—that is, hardy evergreens—are well known in cultivation: *L. prostratum*, *L. rosmarinifolium*, and the subject of our present note—the first and last being by far the most common, though we have several times seen the Rosemary-leaved species growing vigorously, and giving promise of a good alpine. *L. prostratum* is a good plant for half-shady spots on the rockery, and when seen in large patches the intense blue of its charming flowers is exceedingly attractive, continuing more or less in beauty from spring until autumn. The fault of losing the lower stem leaves so quickly, leaving bare unsightly patches here and there in the clumps, is a very bad one, as the task of renovating without lifting the whole is very difficult. *L. graminifolium* (fig. 27) is entirely different in habit and aspect; it forms dense tufts of glaucous grass-like leaves, making a pretty picture in the alpine garden. It flowers May and June, and when well established gives little trouble, and produces its drooping bunches of sweet blue flowers in profusion. It is far from being easy to propagate; dividing the tufts is very dangerous, and must be done carefully. A native of Italy. Our illustration was taken from a plant kindly forwarded by Messrs. Backhouse, of York.

PLANT NOTES.

COSTUS SPECIOSUS.

THE genus *Costus* is not much known in gardens, the only species to which any attention has been paid being *C. igneus*, which was distributed by Mons. Linden a few years ago. A plant of *C. speciosus* now in flower at Kew is handsome enough to be recommended as a stove flowering plant. It has stems 5 feet high, 1 inch in diameter, with the appearance of Bamboos, but succulent. The leaves are arranged spirally upon the stems, each leaf being 1 foot long and 5 inches wide, smooth, green above, soft downy beneath. The flowers are in a compact terminal head, each one being $2\frac{1}{2}$ inches long, tubular, and $1\frac{1}{2}$ inch across the mouth; the large lip-like petal has a crisped margin, suggestive of a *Sobralia*. There were four flowers open on one stem when we saw it, and there were a great number of buds to expand. The figure of this species in Roscoe's *Scitamineae* gives a poor idea of the size and beauty of the plant. *C. igneus* is also in flower at Kew. *W. W.* [This plant and *C. imperialis* are effective as subtropicals, if due regard be paid to gradually inuring them to full exposure. Ed.]

EICHORNIA TRICOLOR,

as grown at Kew, is a pretty stove aquatic, quite up to the standard of *Limncharis*, *Sagittaria*, and the other *Eichornias* and *Pontederias*. It is nearly a yard high, and has large cordate shining green leaves;

the flowers are in erect spikes, each one being an inch across, and a mixture of purple, red, and yellow. There is a large group of it in one of the corner beds in the Water Lily-house at Kew, which is, to our taste, as strikingly pretty as anything we have seen for a long time. This species is no doubt an annual.

NYPHÆA VOALEFOKA.

This is one of M. Marliac's introductions, presumably from Madagascar. It is evidently a white flowered form of the variable *N. stellata*, there being no difference between the two in any point except colour. A plant of *N. voalefoka*, is now in flower in the Water Lily-house at Kew. *N. Sturtevantii*, *N. tuberosa flavesces* (*N. Marliacea*), and *N. stellata rubra*, as well as numerous other kinds, are also now flowering freely at Kew. *W. W.*

ALLIUM PARCIFLORUM.

I have in bloom a small bulb which is of sufficiently rare occurrence, according to Mr. Baker, of Kew—who kindly named it for me—to make it worth a record in your journal. It is *Allium parviflorum*, a native of Corsica, from whence it was sent to me. Mr. Baker says, "It is endemic in Corsica, and I have never seen it alive before. It has never been figured, and I am not aware it has ever been cultivated in England." *Rev. A. Rawson, Windermere.*

FRUIT REGISTER.

APPLE WHITE PARADISE.

WHILE welcoming new varieties of fruits, do not let us, in our zeal, discard old varieties till we have thoroughly proved their inferiority. This season, when one looks upon trees of approved kinds with hardly a bushel on them, this Apple, the White Paradise, or Lady's Finger, or Egg Apple, turns out to be a good one; it always bears, and is in season all through the winter. We have several trees here with a fine crop, and I need not say how useful they will be this year. Many people, probably, will not thank me for raking up this old kind when there are better to be had, but we cannot do without such as this to fall back upon in adverse seasons or exposed situations. Our garden here is 400 feet above sea-level, on a ridge, and is very exposed, and hardy kinds are very essential. I understand that White Paradise grows in Scotland. We were all surprised at the last Apple Congress when King of the Pippins stood at the top of the class with the highest number of marks; but it no doubt was its hardness, and general bearing qualities, which gained it this distinction. Another Apple not nearly sufficiently grown is Galway Pippin. *J. Rust, Eridge Castle.*

GRASS EXPERIMENTS.

By the courtesy of Messrs. Sutton, we visited in the course of the summer, their extensive seed trial grounds at Reading, which comprise some quarter of a million illustrations on agricultural and horticultural productions. Those to which we devoted especial attention on this occasion were the grass experiments.

The first series comprised 150 varieties of grasses, ninety-nine of which are British species; these were grown in small plots side by side under exactly similar treatment, for the purpose of testing both their durability and suitability for permanent or temporary pastures.

Several of the varieties are of German origin, and promise eventually to be a great acquisition to the English cattle-grazier. Perhaps one of the most marked of these is *Alopecurus nigricans*, a later variety of Fox-tail grass than *Alopecurus pratensis*, which although extremely valuable where an early bite is required, yet when left for hay is frequently past its best when the other grasses are ready. *A. nigricans* has a more leafy habit, is taller in foliage, and better adapted for general pasturage.

The next we noticed was *Agrostis vulgaris* var. *nigra*, a valuable variety with abundance of good foliage, promising to give a remunerative amount of hay, and excellent for feeding.

Our ordinary *Anthoxanthum odoratum* (Sweet Vernal grass) is nowhere considered a very valuable variety for hay, notwithstanding the delicate aroma it imparts to the hay-rick, for it gives but a thin and scanty crop, and the seeds are most frequently shed before the crop is cut. Messrs. Sutton are, however, trying their skill upon a later and more promising variety of this grass, having much broader and more robust and abundant foliage, with flowering-spikes nearly 3 inches in length.

One of the most important items for the consideration of farmers is the time of cutting their grasses.

some new pastures is doubtless traceable to grave faults in the prescription of the grasses sown, and to the difficulty of obtaining reliable data upon this point. Six beds have been laid down, which are now of three years' standing.

In three plots the mixture included 6 lb. of *Lolium perenne* (Rye grass) and 2 lb. of *Dactylis glomerata* (Cock's-foot).

In the other three plots the mixture included 6 lb. of *Dactylis glomerata* (Cock's-foot), but no Rye-grass, and it is a significant fact that, in each case when *Lolium* formed part of the grass-seeds sown, the herbage is superior, containing a larger proportion of clovers, while *Dactylis* and the Fescue grasses are now a distinct feature of the plots, whereas on those where *Lolium* was excluded, Cock's-foot and

surrounding the residence of Mr. Martin J. Sutton, he by the aid of Dr. J. Voelcker inaugurated a series of experiments on six grass fields at Dyson's Wood, Oxfordshire, with such quantities and combinations of manures as might be reasonably applied in ordinary agricultural operations, and such as any grass-land farmer might be expected to be willing to go to the expense of in the event of their proving successful.

The present is the third year of the investigations, and the lessons taught may be briefly summarised as follows:—

1. The absence of manure means corresponding absence of leaf, and concurrently the early maturity of flower-heads.
2. The quicker action of soda as compared with sulphate of ammonia.
3. The stimulating effect of ammonium salts upon Cock's-foot grass, this species yielding, when so manured, from 80 to 90 per cent. of the total herbage.
4. The suitability of gypsum as a manure for maintaining a Clover plant.
5. The lasting effects of muriate of potash and bone manures contributing largely to the successful growth of bottom grass and Clovers.
6. The evanescent action of guano on such porous soils as some of those at Dyson.
7. The phosphates of coprolites are more readily taken up by the mixed herbage of grass land than are the phosphates of basic cinder. *John J. Wallis, Harpenden.*

COLONIAL NOTES.

ACCLIMATISATION SOCIETY OF QUEENSLAND.

A BOTANICAL Museum has been erected at Brisbane intended for the display of specimens of economic botany and illustrations of agriculture and horticulture. The garden under the management of Mr. Soutter is well stocked, and the distribution of useful and ornamental plants has been carried on successfully, not fewer than 17,000 plants having been distributed to members.

The maximum shade temperature was in February 92°6; the minimum temperature 37°4 in August. The rainfall of the year amounted to 81 inches, 23.3 of which fell in January, while in June little more than a tenth of an inch was measured.

JAMAICA.

The *Bulletin* of the Botanical Department, Jamaica, for June, under the editorship Mr. Fawcett, contains full reports on Annatto-culture and Sugar-boiling. The Director remarks that the *Kew Bulletin* will be found indispensable by tropical agriculturists.

COLD WEATHER IN NATAL.

On the night of May 23 we experienced a sharp frost—I noted 2°, an amount rather uncommon for this locality, which is 2300 feet above the sea. The effects on a few plants in an open exposed situation are noted as under:—

Leaves Blackened.

Bananas
Brugmansia suaveolens
French Beans
Ficus natalensis
Caladium esculentum
Hydrangea hortensis
Leonotis leonurus
Physalis edulis
Sweet Potato
Tomatoes
Tuberose

Untouched.

Cyrtanthus Mackenii, in flower
Cape bulbs (Babianias, Freesias, Ornithogalum, Ixia, Sparaxis, Nerine), in bud
Gerbera Jamesoni, in flower
Habenaria elegans, do.
Heliotrope, do.
Lachenalia tricolor, do.
Poinsettia pulcherrima, do.
Silvia Van Houttei, do.
Sinningia speciosa, do.
Tessaria virens, do.
Tree-Roots, do.

In a wet low-lying place a few miles from here, much more cold was felt—not less than 3° to 5°. *Crinum capense*, which grows thereabouts, was quite safe, dormant underground. The cold snap was accompanied by a dry raging north-west wind coming from the snow-covered Drakensberg Mountains, 80 miles away. *Poinsettia pulcherrima* bore wind and frost well, and now (second week in July) it is still perfect in leaf and flower. The soil everywhere is ankle deep in dust, hardly any rain having fallen in Natal since March. The total rain-



FIG. 27.—LITHOSPERMUM GRAMINIFOLIUM: HARDY PERENNIAL: FLOWERS DEEP BLUE. (SEE P. 236.)

This, of course, must always vary in different localities and in different seasons, but from numerous experiments made in the trial grounds of Messrs. Sutton, it is found that the best hay is made from grass just before the flower-heads have begun to turn colour. At this period also many of the varieties have been found to contain nearly double the quantity of nutritive matter than after they have shed their seeds.

The next series were arranged for the purpose of testing the comparative value of sowing grass seeds with or without a corn crop, the grain selected being Oats. The present season is the third after laying down, and the total weight of hay in each case has been much the larger, and the quality of the herbage better without than with a corn crop, as many of the finer grasses and clovers were driven out by the exhausting character of the Oats.

One prevalent cause of the early deterioration of

the better quality of grasses have almost died out. This is a matter of great importance, and the inference to be drawn from these experiments is, that Rye-grass fosters the growth of other varieties, and aids the general progress and development of those grasses which are slow in coming to maturity.

EXPERIMENTS WITH MANURES ON PERMANENT AND TEMPORARY PASTURES.

This branch of agricultural practice has within recent years occupied a considerable share of the attention of both proprietors and tenant farmers; and although much knowledge upon the subject has been gained by the elaborate grass experiments of Sir J. B. Lawes and Dr. J. H. Gilbert at Rothamsted, yet there is much to be learnt, and great need for improvement in our meadows and pastures.

For the purpose, therefore, of ascertaining by actual trial what manures were best for such poor land as that

fall in Maritzburg for May was the 98th part of an inch. Contrast this with the 15 inches which fell during May close to Cape Town, and one sees the chief cause of the vast difference between the flora of Eastern and Western South Africa. *R. W. Adlam, Maritzburg, Natal.*

NATAL PLANTS.

It is always pleasant to see your Natal correspondent's jottings, especially when he covers new ground. In the friendliest way, however, I must take exception to his comparative lists of local representative plants on p. 649, vol. iii. 3rd ser. as containing errors of plant distribution. *Metalasia muricata* covers acres of the Cape flats, and is common all along the littoral slope; *Protea cynaroides* is a Table Mountain plant, and runs right up into the Katberg region; *Struthiola ovata* is common in Stellenbosch and Caledon, and *Selago corymbosa* is to be met with everywhere, west and east. These, then, will by no means do for a local Grahamstown list. Then of those assigned to Maritzburg, the *Clerodendron* is also a Kowie plant within 30 miles of Grahamstown; *Disa polygonoides* and *Ochna atropurpurea* both grow plentifully at Grahamstown; *Pentanisia*, a Katberg plant, runs west to the Bedford Mountain; and *Strobæa speciosa* further still—to Boschberg and Brintjeshoogte. To the list of typical plants of the extreme south-west—say, Cape Town—there need be no demur. Nearly the whole question of difference between the west South African and east South African floras lies in the monsoon character of the rainfall—winter rain in the former, summer rain in the latter—and the two different oceanic currents which wash the respective coasts. The derivation of the two floras is another matter. The prefaces to Ernest Meyer's *Commentaries on Dregé's Distributed Plants* and the *Documente* with Mr. Bolus' sketch of Cape plant-geography in the Cape official Handbook, will be the best guides to differences in the two sides of this end of this continent, and their bearing on horticultural matters may be readily inferred. *C. B. S.*

SAINT LUCIA.

We have received the first annual report of the newly formed Botanic Garden in this island. Mr. Gray has made a good commencement, and is already in a position to supply planters with Cacao, Coffee, Nutmegs, Vanilla, and other tropical plants. It appears that Saint Lucia has heretofore imported Coffee from Jamaica which might be grown on the island equally well.

CEYLON TEA, &c.

From Dr. Trimen's annual report we learn that Tea has become the leading industry of the colony, 180,000 acres being occupied with its culture. Coffee has declined in proportion as Tea has extended. Cinchona bark is also very largely exported, though the low price obtained renders it now unprofitable. Indian Rubber trees (*Hevea brasiliensis*) have produced seed freely in the island.

CINCHONA IN INDIA.

A "resolution" of the Financial Department, signed by the Secretary to the Government of Bengal, gives a succinct account of the introduction of the Cinchona into India, and of the progress of the cultivation of the tree. The discovery of the value of cinchonidine, and of cinchonin, as febrifuges of equal value with quinine, is also mentioned, and credit claimed, and justly, for the preparation of "Cinchona febrifuge," a powder which contains the three alkaloids of red bark mixed in the proportions in which they naturally occur in the bark. The document closes with a well-earned tribute to Dr. King and Mr. Gammie.

NOVA SCOTIAN APPLES.—The Canadian correspondent of the *Liverpool Journal of Commerce* writes:—"Apple growers in Nova Scotia say that the maturing crop will be the largest and best that they have had for many years. August Pippins are early in the market."

HARDY FLOWERS FROM HOLLAND.

MR. C. J. VAN TUBERGEN, jun., has sent me another box of hardy plants from his garden, comprising a selection of Lilies and a few other choice flowers. The most important are the best forms of *L. longiflorum*. The varieties *Harrisii* and *Wilsoni* do not differ in the size or form of the flowers, both producing flowers 7 inches in length, and of great purity; *L. longiflorum Takesima* has flowers of great substance, of large size, but an inch shorter than the two first-named; *L. tigrinum splendens* and the double-flowered form are in capital condition. A handsome spike of *L. Leichtlinii* is also sent; it is so like the flowers *L. tigrinum* group in form that it might be classed as a yellow variety of that fine species. This is one of Messrs. Veitch's introductions from Japan, sent with *L. auratum*, and was first flowered by them in July, 1867, and named by Sir Joseph Hooker in honour of M. Max Leichtlin, of Carlsruhe. Mr. G. F. Wilson has produced some handsome examples of it. There is also sent an immense spike of *L. superbum* with no fewer than nineteen flowers. It is the true *superbum*, but this species varies much in the density of the numerous black spots on the petals. It is known by its ivory-white bulbs.

Mr. van Tubergen has sent *Calochortus* flowers and another species. These with us are excellent pot plants, but they seem to do well in the light sandy soil of Holland. Also a fine head of *Tritoma corallina*, a small flowered pretty species; and two forms of *Montbretia*, viz., *M. Pottsi* with slender spikes of orange-red flowers, which I see are described as crimson-scarlet in a list before me; and *M. crocosmiflora*, with much larger flowers. These are handsome herbaceous plants; grand examples are to be seen in a shady peat border at Glasnevin near Dublin.

Calla (Richardia) melanoleuca, with pale yellow flowers, and a black centre, is a striking plant. A few other hardy flowers are sent, the whole of them exemplifying the value of hardy flowering plants in August. In our own garden we have some of the foregoing in flower, and also the crimson and purple *Monardas*, which are always striking objects in the herbaceous border in August, and are of easy cultivation. *J. Douglas.*

THE HERBACEOUS BORDER.

HERBACEOUS PHLOXES.

NEVER, perhaps, were these seen in finer condition than this year, the frequent heavy rains and cool weather having suited them. The earliest to bloom are those of the *suffruticosa* section, but the most stately and effective for border work are those selected and raised from North American species, which come in later, and are most valuable in producing a display all through the autumn, when their varied and brilliant colours are exceedingly telling.

The most suitable place for these latter is immediately in the foreground of shrubs or at the backs of borders; but it should be borne in mind that wherever planted they must be free from the roots of trees for the Phloxes to do any good, as, besides requiring all the moisture they can get, they need rich soil, and always look poor and poverty-stricken when they are robbed. This being so, any intended for special purposes, such as for show, or to produce large heads, are best treated in rows in a part of the garden by themselves, where they are handy for water and can be attended to easily and have liberal supplies of liquid-manure as soon as they begin to show bloom. In preparing for them, dig out a trench as if for Celery, by throwing out the top spit and working in below a liberal dressing of rotten dung, when after filling up the trench to nearly the original level, the plants may be planted. Although the proper time to do this is in the spring, it may be effected during the autumn, as soon as the flower-heads fall or die off, when the stems may be cut

away, and the crowns divided, and each portion will grow. Cuttings also strike freely, if made from the young shoots, and these may be pulled off with roots: obtained in which way, or from cuttings, plants produce finer heads of bloom. To get the cuttings to root, all that is necessary is to put them in in sharp sandy soil, under a hand-light in any shady position; or the striking may be expedited by giving a little heat in a frame. Herbaceous Phloxes also seed freely and produce much variety when raised in that, but to have any really good, seed should be saved from the very best kinds, and gathered immediately it is ripe, which is also the right time for sowing. This may be done in boxes or pans, filled with fine sharp sandy soil, and if these are then stood in a warm pit or frame, and the soil kept properly moist, the plants will soon appear, and directly they are large enough to handle they should be picked off in pots or pans, similarly prepared, and then placed close up to the glass, in a cold frame, for the winter. Some of the leading nurserymen make a specialty of the Phloxes referred to, and those who would start well with them ought to get a dozen or two of the finest-named sorts, as much improvement has been effected in them of late years; and if the selection is to be left to the growers satisfaction is almost sure to be given. *J. S.*

CULTURAL MEMORANDA.

PANCRATIUM CARIBÆUM.

This distinct and beautiful *Pancratium* from the West Indies, has pure white and very fragrant flowers, and should be grown by every body in possession of a plant stove. It is increased by offsets potted up in sandy loam, and grown in the ordinary way, giving water when necessary during the growing season, and keeping the foliage free from the attacks of thrips. Strong flowering bulbs may be obtained from the leading plant nurserymen at from 2s. 6d. to 3s. 6d. each in the autumn, which being potted in efficiently crocked 6-inch pots in—as already stated—good sandy loam, and treated as indicated, will flower next year. This is a grand decorative plant; the individual flowers are also very useful for bouquet making as they wire well. Liberal applications of tepid liquid-manure being given at the roots while the plants are growing, will conduce to the production of finer flowers than would otherwise be secured.

SANCHEZIA NOBILIS VARIEGATA.

Cuttings of the young growths of this very useful decorative plant, taken off any time during the spring, summer, and autumn months, inserted in small pots filled with sandy soil, placed in heat, and watered, will soon root. They should afterwards be potted singly into 3-inch pots in a mixture of peat and light sandy loam, watered, and returned to heat, placing them near to the glass and keeping them supplied with moisture at the roots and overhead when necessary. The deep green midrib and bright red veins of the Croton-like leaves of this plant render it a very suitable subject for table work, &c. *H. W. Ward.*

COREOPSIS LANCEOLATA.

The annual varieties of *Coreopsis* are pretty well known and much grown in gardens, but good as they are they are far exceeded in usefulness by some of the perennial kinds, one of the best of which is *C. lanceolata*, which I had the pleasure of seeing the other day in full beauty, in Mr. Thomson's seed grounds, at Ipswich. The plants there were in rows, forming a large group or bed, and were a mass of bloom, the individual flowers being about the size of a five-shilling piece, and of a rich shade of satiny yellow. There is another species of *Coreopsis* closely resembling this, named *C. auriculata*, and both are highly desirable for planting in the herbaceous border, where they would be sure to make a grand show. Both of these kinds seed profusely and may readily be increased in that way, or by division,

as they spread quickly and send up a great number of stems. Like most perennials or herbaceous plants they delight in rich deep soil, and succeed best where they can have plenty of moisture.

MONTBRETIA CROCOSMIFLORA.

This is a beautiful Iridaceous plant, much too seldom seen in gardens, and is a much brighter and finer kind than the better known *M. Pottsi*, as it has considerably larger flowers of a more brilliant hue, partaking of the colour of the last named and *Tritonia aurea*, from both of which the plant has been raised; and it ought, like the latter, to be sufficiently hardy to stand the winter if planted in a sheltered spot out-of-doors, as in a border under the foot of a wall the *Tritonia* does remarkably well with us, and affords scores of spikes for cutting.

The habit of *Montbretia crocosmiflora* is spreading, and the plant has leaves very like those of the *Gladiolus*, and the flowers are borne on stout branching stems, in the same way as those of the *Tritonia*. The soil most suitable for growing the *Montbretia* is a rich deep sandy loam, in which the creeping roots run and spread freely, and if left out for the winter it is advisable to protect by laying a few inches of leaf-mould over the bed. If grown in pots the same treatment required for the *Tritonia aurea* will be found the most suitable, and that is to stand the plants out in the open during summer, as under glass they are apt to suffer through red-spider attacking the foliage. *J. S.*

FELIXSTOWE.

[SEE SUPPLEMENTARY SHEET.]

LET those in search of a sensation betake themselves to the town of Ipswich in early June, and then avail themselves of the branch railway to Felixstowe. They will not have gone far before they find themselves traversing immense Gorse-covered commons, so radiant with glowing colour, so heavy with rich perfume, that there is no difficulty in realising the statement made, that Linnaeus, astounded at the sight, rendered thanks to God at the prospect of an English common. Dull, indeed, must he be who could pass unmoved such a sight as that of these extensive commons when ablaze with Gorse-blossom.

That is sensation number one, only to enjoy it to the full you must be there almost to the day. We passed those same commons only a few days later to find their radiance wonderful indeed, but perceptibly less than before, and the rich full golden hue of the Gorse giving place to the thinner, paler, more translucent yellow of the Broom. A few minutes more and the train passes through the Orwell woods—another sensation for the tired eyes of a cockney—and then, emerging from these woods, the train comes to a halt at Felixstowe. What a place! Did ever heart sink lower than ours at the first sight of this dull, dreary, dusty place, with apparently all the horrors of a place of seaside lodgings without any of its advantages. The "shatteridan," guiltless of paint and never cleaned, and the raw-boned steeds, looked appropriate certainly, but not alluring. However, the animals moved along at a pace far from consistent with their woebegone appearance, and just as we were wondering where we were going to, and how much further off our goal could be, a gleam of many-tinted colour glinted through the trees, contrasting exquisitely with the soft tender hues of the foliage, a cosy-looking hotel oped its hospitable gates, and we were taking our rest in the hostelry presided over by Mr. Quilter, whose taste as a gardener was known to us before, and whose skill as a caterer we found to be on a par with his love of gardening. It is astonishing how quickly the charms of that comfortable place made us forget the depressing impressions caused by our first descent upon the sand dunes. A very short time and we found ourselves purring with content and saying that it wasn't such a bad place after all. We would sleep upon it, and decide in the morning. And decide we did, our decision being in no slight measure

influenced by the pretty garden, a portion of which is shown in our illustration. There are, as we soon found, all sorts of attractions at Felixstowe for the geologist and those fond of natural history and bracing air—red cliffs so crammed full of fossils that a penknife's blade is all too thick to pass between shell and shell. Besides, there is a sort of curious Hibernicism about the whelk-shells of the Crag (*Fusus contrarius*). They are many of them left-handed, and this deviation from the ordinary course of things fits in well with the holiday topsy-turvy spirit and the desire to cease, for a time at least, the daily right-handed routine. Then there are the golf links within a walk, and the sand-hills and the miles of sea-coast, all so full of varied interest to the botanist. Not far off is Harwich, quaint and Dutch-like except in its dirt, and there is the shipping and the ride up the Orwell, and the charming park of Wolverston, and the glorious woods of Orwell, and much besides that it would not be in place to mention here.

The spring garden which attracted so much of our attention is of large dimensions. Trees and grass and the softness of the well-blended colours take off from the formal regularity which otherwise might be objectionable, and constitute a picture, the charms of which frequent inspection only served to enhance. The photograph, taken when the trees were still leafless, shows the general plan to consist of a semicircle of triangular beds, with a central grass-plot, while the boundaries of the garden are backed up with trees and shrubby borders, with lines of spring flowers in front. Here are some of the combinations seen in these triangular beds—a groundwork of blue *Myosotis* dotted with white *Tulips*, surrounded by a band of white *Arabis*, and then by a similar band of *Silene pendula*, with a Box edging as an outermost boundary. In another triangle the groundwork was a mass of purple *Aubrietia*, in the centre of which was a circle, consisting of *Silene pendula*, dotted with *Hyacinths*, and edged with *Golden Feather*. In each corner of the triangle were smaller triangles, filled like the central circle.

These illustrations may suffice to indicate the contents of the beds as we saw them. Crocuses had had their day, Wallflowers and Daffodils were going off, *Hyacinths* were on the wane, and *Tulips* were coming on, while very shortly the bulbs and spring plants would be removed, and *Tropeæolums*, *Pelargoniums* of varied hue and many banded foliage would take their place—the edging of *Thrift*, or *Box*, *Euonymus* or dwarf *Lasender* remaining as a permanent border. Within the sheltering trees is a belt of shrubs, faced with a wide herbaceous border, rich in variety, and so contrived as to ensure something attractive at all seasons; thus, at the back were giant *Ferulas*, and then in successive order, according to height, *Tritomas*, *Rockets*, *Irises*, *Golden Euonymus*, *Poet's Narcissus*, white *Marguerites*, *Wallflowers*, *Asters*, white *Pinks*, *Tulips*, white *Arabis*, *Myosotis*, *Silene pendula*, &c. From this admixture it will be seen that there can be scarcely a day in the year without flowers of some sort. When one is not in bloom another is, the garden being sheltered, and the climate, despite its being on the east coast, decidedly mild, for are not standard *Fig* trees to be seen in the gardens as if they were at Worthing? and do not Felixstowe *Figs* carry the day before them at the autumn shows in the neighbourhood? Besides this dressed garden, Mr. Quilter has another, in which a central rockery affords a home for all sorts of interesting plants, while the well-cropped, well-tilled kitchen gardens attest the presence of a master in the art.

A few minutes' walk, and the fine residence of Mr. Cobbold is reached. Almost in the sea there is a garden in course of formation, and all the more interesting on that account. Shelter from wind is the great desideratum; this provided, the sea air brings a colour to the petal that is a wonder to those familiar with tamer hues inland. The deep violet of the *Stocks* made one realise how the old Greeks saw the face of their purple heavens reflected in these flowers. One charming part of the garden will consist of a circle or half-circle of rockwork sur-

rounding a grass-plot, with a bed of *Roses*, and *Carnations* in the centre. The rockwork faces to landward, so that the plants are sheltered from the fierce blasts, and nestling under the rocks will blossom into beauty.

A semi-circular range of houses is in course of erection, and in front is a tennis-lawn, with a fountain in the centre, and *Rose* beds and low rockeries here and there. This bids fair to be very beautiful when "that dreadful wireworm" shall have ceased to revel in the unwonted feast produced by the breaking up of the ground.

Close behind the sea wall is another rockery of Pulham's construction, with a trickling stream edged by *Bamboos* and *Ferns*, and destined to be the home of numerous plants suitable to the spot. Evergreen *Oaks* and *Tamarisks* attain large sizes here; while nothing can exceed the depth of colour of the *Irises*, *Wallflowers*, and *Stocks*. There may be a pretty fierce struggle for existence—there must be on the sloping bank facing the sea—but the victors at any rate celebrate their triumph with colours before which the banners and flags of a popular festival look dull and muddy indeed in comparison. To conclude, Felixstowe is not the dreary place it looks, and the Bath Hotel is the very place for those who like quiet and comfort with something to interest and attract, and a pretty garden to rest in.

LISIANTHUS RUSSELLIANUS.

For greenhouse decoration this plant (fig. 28) is most useful, and considering the beauty of its violet coloured flowers, and the length of time they remain in perfection it deserves more general attention than it receives from those who have to keep up a display of flowering pot plants throughout the year. The plant, when well grown, always excites attention and admiration, but still it is far from being new, as it was introduced into this country in 1835 from Mexico, and it is, therefore, a matter of wonder that it is not more common in cultivation. Many say that it is rather a difficult plant to succeed with, but ordinary attention ensures good results. In an article before me it is stated that the above plant is "capable of acquiring a circumference of 7 or 8 feet and a height of 3 feet above the rim of the pot, and of simultaneously exhibiting upwards of 400 flowers either in actual expansion or in different stages of bud." Of course specimens of such dimensions could only be acquired by stopping the plants, but our plan is to let them grow up without pinching them, and by so doing gain useful sized plants with good heads of flowers.

Seeds should be sown in February in heat, and as they are small should not be covered, placing a piece of glass on the pot shaded with paper until the seedlings are somewhat advanced. Finely broken crocks or charcoal should be mixed with the soil, as they are apt to damp off should the water not be able to pass away freely. As soon as they are ready to handle they should be pricked off into pans or small pots, employing a porous compost of loam, leaf-soil, sand, with some broken crocks and charcoal, still keeping them in a warm house near the glass in a shady quarter. When established they should be removed to a pit, or like structure, with an intermediate temperature, keeping them as near the glass as possible; shift them on as soon as they require it, and during the brightest and warmest months they can be removed into a cool frame, which will give them strength to stand over the winter, and prevent them becoming spindly and drawn. In January or February they should be shifted on into 48-pots, using good strong yellow loam mixed with some good sharp sand and broken crock. During the winter months they must be placed in warmer quarters than a cold frame—a minimum temperature of 50° is suitable. The strongest plants as time and growth proceeds may be potted in 24's, while the smaller ones of the batch will be satisfied with smaller pots. A close, stuffy atmosphere should at all times be avoided. When the flowers show signs of expanding, the pots may be removed to a cooler structure, where they will last for a long time in perfection.

L. glaucophyllus is another species now in flower, the flowers of which are much smaller than the



FIG. 28. —*LISIANTHUS RUSSELLIANUS*: GREENHOUSE PERENNIAL: FLOWERS PURPLE. (SEE P. 239.)

above, and do not expand fully; the growth is long and straggling, and it is far from being a desirable pot plant.

L. princeps.—This, according to descriptions, is the cream of the genus, which numbers something like a hundred species, but only a small number are in cultivation. *W. Harrow, Botanic Garden, Cambridge.*

FORESTRY.

FENCES.—Fences of every kind, gates, and stiles, should now be made perfectly secure against the inroads of cattle, particularly such as border plantations, as when tortured by flies, farm stock naturally seek the most shady recess for comfort and repose. Hedging can now be carried on with freedom, oper-

ating on the Privet, Yew, and Box first, afterwards on the Holly, Thorn, Hornbeam, and Beech.

With the recent unusually wet weather, water-courses of all kinds will require an occasional look to, and all accumulations of twigs, leaves, and grass, collected and removed from their channel; the mouths of closed drains must likewise receive constant attention, and this is work well done, for the expense of opening and dislodging obstructions from these is frequently an item of no mean importance.

Gratings alongside roads and bye-paths should have all accumulations of *débris* removed therefrom after each spate, else the roads become flooded, and sand and dirt get washed thereon.

As soon as the corn and hay crops are removed from the fields, hedgerow trees may, where necessary, be pruned, or taken away altogether. A fair quantity of hedgerow timber is highly beneficial to lands under culture, but a superfluity is an evil with

which, unfortunately, the British farmer is too well acquainted. In removing hedgerow trees, grubbing out is far preferable to cutting over the stem at ground level, and this not only for the extra gain of land, but on account of the damage inflicted by stumps in the ground to the various farming implements. *A. D. Webster, Holwood Park, Kent.*

PLANTS AND THEIR CULTURE.

BEGONIAS.—For winter flowering many of the shrubby species are very useful, being graceful in appearance, with flowers varying from red, rose, or pink, to pure white—rarely yellow, as in *B. prismatocarpa*, a small African species, which only grows to a few inches in height, but which, thickly planted

in shallow pans or pots filled with a rich gritty compost, and kept close up to the glass in a moderate stove temperature, makes chaste little cushion-like masses somewhat of the habit of *Nertera depressa*. For general purposes larger growing species are required, and of the many species now introduced we have found the following selection the most useful:—*B. ascotensis*, *B. insignis*, and the variety *knowsleyana*, all free-growing, and of branching habit, with pale red, pendant flowers, produced towards the ends of the branches. In favourable localities these sorts are frequently planted outside in summer and lifted about this time—or before there is the least danger from frost—and potted on for winter-flowering, when if kept in a rather close house until established, strong plants are obtained at a small expenditure of labour. *B. digswelliana* and *B. Sandersoni* are similar to the preceding, but dwarfier and neater, usually growing from 1 to 1½ feet high. The plants of the first named group are usually about 1 foot taller. These and succession plants of the others should now be placed in 5–6-inch flowering-pots. If the stock for the coming season is deficient, it may still be increased with a fair chance of success, but at this late period of the season large pieces should be selected for cuttings inserting several of them in 60's, and kept in a close growing temperature until rooted, which will be in two or three weeks. Gradually give more air, and pot on without singling out the cuttings; these will make a capital succession. *B. odorata* has cymes of fragrant white flowers, and *B. nitida*, a similar plant, has pinkish-white flowers. Both are well known species, but unless the plants are old they are rather too straggling in habit for pot culture; however, they do admirably when planted out against a wall or pillar where they can obtain support. Of similar habit but dwarfier is the crimson-flowered species, *Lynchiana*, *B. manicata* and *B. Berkeleyi*, which have short, thick, fleshy stems, and large oblique leaves, are both good spring flowering sorts, and quite distinct from any of the preceding. *Manicata*, with its long-stalked cymes of pinkish-white flowers, is useful for cutting purposes. *B. Berkeleyi* has rose-coloured flowers which are larger than the former. *B. semperflorens* is a dwarf white-flowered species, which, by sowing seeds at various times, may be had in flower nearly the whole year. There are also several of the ornamental foliaged sorts which flower during winter and early spring, such as *B. erecta multiflora*, with its salmon-coloured flowers and reddish bronzed foliage—a telling subject in a young state. *B. gogoensis*, with its almost round peltate leaves, of a lustrous green on the upper, and claret-red on the under-side, and flowering similarly to *manicata*. *B. peltata* has leaves which are covered with a dense silvery furfuraceous matter. It should be rested during the summer. There is only one species of *Begonia* of a deciduous and tuberous nature, *B. socotrana* which is naturally a winter-flowering plant, and when well done stands unrivalled. It is of dwarf habit, and produces many-flowered cymes of rose-coloured flowers, which are thrown well up above the leaves. *F. Ross, Pendell Court.*

THE FLOWER GARDEN.

CHRYSANTHEMUMS.—Plants growing in open borders, as well as those against walls, have now arrived at that stage of their growth when one of two questions must be decided upon, viz., whether quality or quantity of bloom is desired, for it is useless to expect both on the same plant, and one must be sacrificed to the other whichever it may be. The majority of late-flowering varieties are now showing what in *Chrysanthemum* parlance is called the "crown" bud, and this is the one which must be secured if large flowers of good quality are wanted. Each bud will be found to be surrounded by three or four leaf or growth shoots; these must be taken out with a pointed stick or penknife as soon as practicable, and also all lateral shoots that may be pushing forth from the axils of the leaves on the main stems. If quantities of flowers is the object the young shoots must be allowed to take their own course till they form the "terminal" bud, which will show itself in about a month hence. Plants intended for lifting at a later period, and for flowering under glass, had better be cut round with a spade, about a foot from the stools, towards the middle of the month; they will thereby be in better condition for potting when the proper time arrives, and will possess more leaves when in flower than they would under the reverse treatment.

Keep the shoots well tied in, and after the flower-buds are formed water occasionally with liquid manure or soot-water, but be careful not to use the last named of too great strength or injurious results will follow. Should mildew have made its appearance adopt remedial means without farther delay; keep also a sharp look-out for earwigs.

Roses.—Cuttings that were put into pots and placed in warm frames in July are well-rooted by this time where they have been properly attended to, and if they have not already been potted off into 3-inch pots no time should be lost in doing so. Use for this purpose three parts turfy loam, one of leaf-mould with a little manure from an old hotbed and silver-sand added thereto, returning them to the frames in which they have been rooted for the present, and keep them shaded from bright sunshine for a few days afterwards. Pay close attention to Banksian and other free-growing Roses against walls, keeping them tied-in as fast as growth is made, and adopting remedies to check the spread of mildew on all Tea-scented varieties.

Pinks.—Rooted cuttings ought now to be planted out in their permanent quarters, assuming they have been properly hardened off; and if the soil is poor, dig in a little rotten manure, and a dressing of leaf-mould or sifted cinder-ashes, where it is of a clayey nature. If in 4 feet beds, plant three rows, allowing a space of from 12 to 15 inches each way. *J. Horsfield, Heytesbury.*

THE HARDY FRUIT GARDEN.

GATHERING FRUIT.—Peaches and Nectarines should be looked over on alternate days, and fruits of the first-named should be gathered before they become too ripe, and be placed on an airy shelf in the fruit-room, from whence they can be sent up for dessert when sufficiently ripe. Apricots, when fully ripe, always form an acceptable dish for dessert, but in a dull sunless season like the present one it will be a difficult matter to obtain them of the proper degree of ripeness at the base; and should the weather continue ungenial, there will be a danger of their becoming mealy and juiceless by reason of their hanging so long on the tree. When Apricots are used for bottling the fact of the fruit being unripe at the base is an advantage, as they are not then so liable to fall to pieces. To keep up a supply for present use for dessert a few of the ripest and finest fruits may be gathered every two or three days, according to the demand, and put into a box with a close-fitting lid, and be placed in a dry warm room, when they will soon become thoroughly ripened. The same treatment applies to the ripening of Pears, provided they are in a sufficiently advanced state when gathered. The Summer Beurré d'Arenberg Pear (Rivers) is a perfect sweetmeat when ripened in this way. Some varieties of Apples will also ripen in the same way, but I find they are generally then a little deficient in flavour. After a sufficient quantity of Morello Cherries have been gathered for bottling the remainder should be reserved for culinary use and dessert, the finest being reserved for the latter purpose, and which should be allowed to hang until they are quite black, when they are very much appreciated by some persons. A few of Lord Suffield Apples may now be gathered for the kitchen, the largest and ripest being taken each time. Young Apple trees bearing full crops of fruit will require a little support to be given to the branches to prevent the possibility of their being broken off during high winds. As soon as Currants and Gooseberry bushes are stripped of their fruit the nets should be taken off, dried, and stored away. Gooseberries are not keeping well this season, the abundance of moisture causing the berries to burst. The Pitmaston Green Gage is one which is keeping the best with us, and it is also the highest flavoured; the red varieties are very acid, and not up to the mark. *A. Ward, Stoke Edith Gardens, Hereford.*

FRUITS UNDER GLASS.

MELONS.—These plants will now require careful treatment as regards watering at the root and moisture in the air, and should the soil be in a satisfactory state of moistness, it will be found to be safer to give a mulch of spent Mushroom-bed manure than to afford water. Syringe the plants only on fine days, and

merely sprinkle the paths and walls in the pits when the weather is dull. A superabundance of water is the prime cause of disease at the collar. Plants which are required to fruit in November should now be in a forward state, as but little progress will be made as the days shorten. Do not over-fruit any Melon plants now; three to four fruits on a plant will be ample.

Melons in hotbeds will now require the linings to be frequently renewed, so that the requisite temperature be maintained. These will require still less water than plants growing over a hot-air chamber, as the roots will probably have penetrated into the moist hotbed material. The fruits should be raised on pots so as to afford them the full benefit of sunlight, and turned round frequently to secure equal swelling. Cover the sashes with mats or other warm material at night, which should be removed the first thing in the morning.

Cucumbers.—Seeds of plants to afford fruit in the winter, if not already sown, should at once be put in. Later successions may be sown up to the first week of September. As these successions will have to keep up a supply of Cucumbers for a long period the drainage should be made perfect, and to this end it will be as well to minutely inspect the beds, and if any imperfections exist to have them rectified at once. Do not make the bed of a large body of soil to begin with, but put in small mounds, consisting of loam, leaf-mould, and spent Mushroom-bed manure; place the seeds in the heaps at the first, and they will start away with more vigour than they would in small pots. From time to time as the roots appear at the outside dust the roots with Thomson's manure, and place an inch or two of the warmed compost over them.

Strawberries which were in a condition to be potted in July will now have well filled their pots with roots, and a little weak manure-water may be given them twice a week. Do not crowd the plants together, but let them stand so far apart that the foliage does not touch that of the other. Keep the pots clear of weeds, and pick off all runners as they appear. Look after duplicate crowns, and reduce to one. Should the weather be wet some means must be taken to elevate the pots. In order to get the crowns fully developed stand the pots on inverted flower-pots, boards, or trellises. *Wm. M. Baillie.*

THE KITCHEN GARDEN.

MUSHROOMS.—Manure for the beds should now be collected as fast as possible, and spread out about 12 inches thick in an open shed until enough is got to form a bed; in the meantime it will require turning over once in two days, to prevent over-heating, and to get rid of moisture. It is by no means necessary to shake all the straw away—the longest only should be taken out. Many failures occur in growing Mushrooms through throwing the dung into large heaps and thus getting it too hot. By doing this, much of the ammonia is got rid of before the beds are made, and there is then none left to afford support to the Mushrooms. Care should also be taken that no manure is collected from stables where green food or medicine is being given to the animals. If a good supply of manure is obtainable it is well to mix some perfectly dry loam amongst it as soon as collected, which helps to absorb some portion of the ammonia, and prevents overheating.

While the manure is under preparation the Mushroom-house or cellar should have a thorough cleaning and be well aired, and any repairs, &c., done that are necessary. These structures are best when built of hard materials in the form of a cellar under the garden sheds or elsewhere, but they are often built wholly above-ground. In such cases I have sometimes found it a great improvement to put spars across inside, so as to form an inner roof, the space between this and the outer roof being filled with straw; this prevents the undue drying of the beds when fire-heat is used.

Enough manure having been collected for the bed and well turned until thoroughly mixed and sweetened, it should be rammed into the beds as firmly as possible, and a thermometer inserted therein to ascertain when the greatest heat has been attained; and when it declines to 85°, the spawn should be inserted just under the surface, in pieces about the size of a hen's egg, at 9 inches apart: all should then be made perfectly firm again, and about 1½ inch in thickness of good moist loam should be spread over the top and beaten down. *W. H. Dwyer, Kilton Hall, Stamford.*

Advertisers are specially requested to note, that, under no circumstances whatever, can any particular position in the paper be guaranteed for advertisements occupying less space than an entire column.

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*Post-office Orders and Postal Orders should be made payable at the Post Office,
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APPOINTMENTS FOR THE ENSUING WEEK.

SHOWS.

TUESDAY,	SEPT. 4.	{ Horticultural Exhibition at Rugby in connection with the Warwickshire Agricultural Society (two days).
WEDNESDAY,	SEPT. 5.	{ Royal Caledonian at Edinburgh (two days). Bath (two days). Ancient Society of York Florists.
FRIDAY,	SEPT. 7.	{ Fruit Show and Conference and National Dahlia Exhibition at the Crystal Palace (two days).

SALES.

MONDAY,	SEPT. 3.	{ Dutch Bulbs, at Stevens' Rooms. Dutch Bulbs, at Protheroe & Morris' Rooms.
TUESDAY,	SEPT. 4.	{ Imported Orchids, at Protheroe & Morris' Rooms. Dutch Bulbs, at Small's Rooms.
WEDNESDAY,	SEPT. 5.	{ Dutch Bulbs, at Stevens' Rooms.
THURSDAY,	SEPT. 6.	{ Dutch Bulbs, at Protheroe & Morris' Rooms. Dutch Bulbs, at Small's Rooms.
FRIDAY,	SEPT. 7.	{ Imported Orchids, at Protheroe & Morris' Rooms. Leasehold of Royal Nurseries, Ascot, at The Mart, London, by Messrs. Protheroe & Morris.
SATURDAY,	SEPT. 8.	{ Dutch Bulbs, at Stevens' Rooms. Dutch Bulbs, at Protheroe & Morris' Rooms. Dutch Bulbs, at Small's Rooms.

Bedding-out. SOME quarter of a century ago the bedding-out fever was at its height. Brightness of colour and violent contrasts were everywhere seen. It seemed as if there could not be too much of it to please the public. Long ribbon borders trailed their glaring lengths from lodge-gate to entrance-door. Everywhere there was fiery glare without shade, without half-tints—everything seemed to the fore—and what there was in the middle distance or background could not be even guessed. Space and repose, such essential features in good gardening, were almost entirely ignored. Of course the florists met the popular demand. "Scarlet" and yellows were produced in endless profusion. As for the gardener, his pits, his frames, his shelves, his houses were crowded to excess with bedding stuff, and much of his time and resources were taken up by providing for a short display. The beauty, the interest of a garden, were sacrificed to the mania for colour. But at length the rage culminated; even those who advocated bedding-out began to see that the thing was overdone.

Spring gardening as practised by Mr. INGRAM at Belvoir, by the late Mr. FLEMING at Cliveden, and by others elsewhere, led the public to see that much more chaste effects could be produced by subdued hues, cleverly harmonised, than by any pretentious display of ardent colour. Then, again, those who loved their garden for the sake of the plants that were in it, began, and not without grave cause, to complain that this "glare of the garden" had banished all interest from gardening. There may be some persons who prefer the senseless stare of a hairdresser's dummy, or the meaningless grin of a waxwork figure, to the charm of a countenance which tells of difficulties successfully surmounted, of troubles

perchance endured, but radiant withal of intelligence and appreciation. Just as a man's temperament and history may often be read in his face, so may the history of a plant be divined by the appreciative observer; and the interest this adds to the pursuit of gardening is incalculable. But much or most of this was crushed out by the terrible chromato-mania of the time we are speaking of. Spring gardening did something, as we have said, to reduce the infatuation; the renewed introduction of herbaceous plants in decorative gardening did more; and for this we have especially to thank Mr. ROBINSON. At any rate, save over public-house doors and windows, we rarely see the chromatic horrors that were once so prevalent. The fear now-a-days is, that the pendulum may swing too far in the other direction, and that sad and muddy colours, and washed-out tints, which the complaisant florists are already providing to meet, as they say, the requirements of the ladies, may occupy places where a reasonable amount of bright colour would be appropriate and desirable.

On terrace gardens, and in formal gardens, in juxtaposition with architecture, the introduction of herbaceous plants is generally quite out of place. Their varying habits, their unequal heights, the short duration of their flowers give them in such situations a weedy, uncared-for look, and a style of ornamentation that should be symmetrical and graceful becomes thus represented by a meaningless muddle. The truth seems to be, that in particular situations herbaceous plants can never take the place of bedding plants, used with judgment, and the converse is also equally true. Carpet-bedding with *Alternantheras*, *Gibraltar Mint*, *Sedums*, and such-like, still enjoys much popular favour, and when well carried out and judiciously situate, it cannot be denied the merit of prettiness. Moreover, it appeals to the popular taste, which sees in it difficulties overcome, and is always ready to applaud ingenuity, however perversely applied. Gardeners worthy of the name, however, are not likely to feel much interest in this sort of work, which could be as well done with bits of coloured glass or stone as with leaves. The dotting system is better, and some good illustrations may be seen at Kew. Out of many, one may be mentioned as very effective. The groundwork is the *Riccarton Fuchsia*, now in full bloom, dotted among which uprise spikes of *Hyacinthus candicans*. Were the bed less formal in outline, its appearance would be improved.

The mention of Kew leads us to note with pleasure the recent formation of shrubbery beds filled with select varieties of *Berberis*, *Euonymus*, *Ceanothus*, *Hydrangea*, and other ornamental shrubs, evergreen, variegated, or flowering. This notion of picking out the best and most suitable varieties and showing them in the mass, is an excellent one, and the gardener who has—as so many have in these days—to produce an effect at the lowest cost and at the least expenditure for maintenance, may learn many useful lessons from the Royal Gardens. In addition to the mixed beds are isolated masses of *Japan Anemones*, *Helianthus*, *Delphiniums*, *Carnations*, and other perennials, the only objection to which is the formal outline of the beds, though when in immediate proximity to the straight lines of the building this may be a necessity.

Of the large rock-garden at Kew we need hardly speak in this connection. It has been a great success, and is a delight at all seasons. The principle might be extended, and much of the monotony of modern flower gardening avoided by

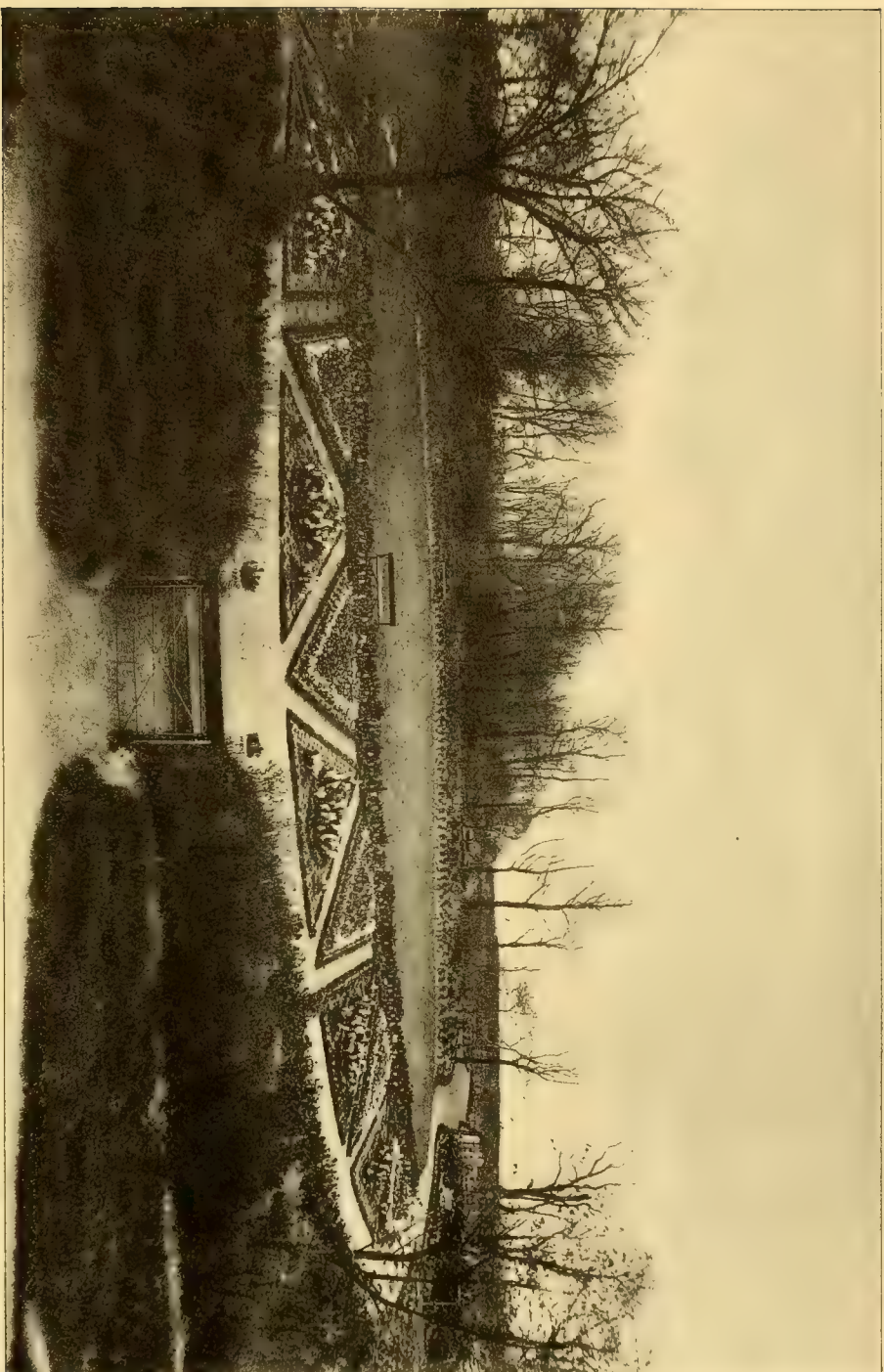
the construction of small rock borders near the edges of the lawns, or anywhere where they would not interfere with the view of that most delightful feature of English gardens. Low rockwork of this character, filled with appropriately selected plants, seem to offer a judicious compromise between the utter barbarism of bedding-out as it used to be and the unsuitability for the particular purpose and locality of herbaceous plants generally.

Combined with a rock garden there might be a portion of the garden around the mansion set apart for beds of foliage plants of a hardy as well as tender character, interspersed with beds of flowering plants among which the now too obtrusive *Pelargonium* and *Calceolaria* might find place, as patches of desirable enlivening colour. Amongst the foliage plants suitable for the purpose may be mentioned the *Aralias* *Sieboldi*, *spinosa*, and *papyrifera*, *Japan Maples*, *Dracæna australis*, *D. brasiliensis*, *Costus imperialis*, the *Chusan Palm*, stately *Yuccas*, *Tritomas* which combine beauty of flower with slightly foliage.

With the experience of the present year before us, the too free use of tender exotics of either section should be avoided, and preference given to things of known hardihood. The late flowering *Teas* and *Noisette Roses* might be made much more use of, as well as the monthly *Rose*, and that fine dark *Rose*, *Cramoisis superieure*.

THE LOCAL GOVERNMENT BILL.—This very complicated and unwieldy measure stood in need of what Mr. CHAMBERS has now supplied, viz., a classified abstract. Many of our readers, members of the Court of Quarter Sessions and others will be interested in ascertaining precisely what is to happen to them, what is to be the mode of election of the new County Councillors, and what their duties. All this is told in *A Popular Summary of the Law relating to Local Government*, by Mr. G. F. CHAMBERS, and published by STEVENS & SONS, 119, Chancery Lane, E.C. Most country gentlemen will be glad of this book for reference.

CONFERENCE OF FRUIT GROWERS AT THE CRYSTAL PALACE.—A meeting of the Executive Committee of the above Conference was held in Anderson's Hotel, Fleet Street, on Tuesday last, August 28, T. FRANCIS RIVERS, Esq., in the chair. The principal business was the consideration of a number of communications received by the Hon. Secretaries, Messrs. LEWIS CASTLE and WM. EARLEY, offering papers and suggestions, and the determination of the programme for the Conference. The committee now comprises about seventy of the leading fruit growers, nurserymen, and amateurs throughout the kingdom, all of whom had expressed their hearty approval of the scheme, and their desire to assist in rendering the meeting both useful and interesting. After considerable discussion it was decided that the subjects should be taken in the following order, each paper to occupy about twenty minutes in reading to allow ample time for discussion. The Conference will be held in the Crystal Palace (the place will be notified on the morning of each day) on September 7 at 3 P.M., and September 8 at 2 P.M. On September 7 the first subject will be "Fruit Culture for Profit," by FRANCIS T. RIVERS, Esq., to be followed by Mr. COLEMAN, Eastnor Castle Gardens, and others. The second subject will be "The Packing, Carriage, and Marketing of Fruits," by Mr. WEBBER, of Covent Garden; and Mr. SAMUEL RAWSON, of Birmingham. On September 8 Mr. TALLERMAN will deal with "Fruit Distribution," Mr. MANNING with "Fruit as Food," and Mr. ALBERT BATH with "Land Tenure in Relation to Fruit Cultivation." All who intend taking part in the discussion will facilitate the arrangements if they send in their names to the Hon. Secs., Mr. LEWIS CASTLE, Hotham House, Merton; Mr. WM. EARLEY, Ilford; or to the Chairman on the day of the meeting.



THE PHOTOGRAPH BY MR. J. J. MARTIN, LAM. & SON, ST. LOUIS, MO.

SPRING GARDENING AT FELIXSTOWE.

FRUIT GROWING.—A conference on fruits suitable for market purposes will be held at the Corn Exchange, St. Albans, on September 4, chair to be taken at 7.30 P.M., by the ex-Mayor of St. Albans, H. P. SMITH, Esq., J.P. The following gentlemen and horticulturists will contribute papers:—Mr. T. MORGAN (author of *How to Make the Most of the Land*); Mr. S. T. WRIGHT, Glewston Court; Mr. T. HOBDAV; Mr. J. CHEAL, of Crawley, Sussex; and Mr. W. F. EMPTAGE, of St. Albans. Admission will be free.

THE PINE-LIKE FRUIT OF THE ASSYRIAN MONUMENTS.—Those who have seen the Nineveh marbles in the British Museum must have noticed the cone-shaped fruit covered with knobs which are to be seen in the hands of some of the figures who are apparently making offerings to the king. The figure might pass for a conventional representation of the Stone Pine, *Pinus pinea*. Dr. BONAVIA, in recent numbers of the *Babylonian and Oriental Record*, offers some ingenious arguments in support of the hypothesis that the fruit in question is a Citron. The Orientals still attach great value to the powerful fragrance of these fruits.

ORIGIN OF BOTANIC GARDENS.—In France, in the 16th century, the fashion was all "in favour of brocades and brocatelles, stuffs of flowery patterns, the designs for which gave birth to the use of Pomegranates and other fruits with fine foliage. The designers sought inspiration from plants blooming in luxuriant fulness. An intelligent horticulturist (JEAN ROBIN) set himself to meet the demand in this respect by opening a garden with conservatories, in which he cultivated strange varieties of plants then but little known in our latitudes. This proved an immense success. In a short time the king (HENRY IV.) purchased JEAN ROBIN'S horticultural establishment, which, under the name of *Jardin du Roi*, became crown property. The learned GUY DE LA BROUSSE in 1626 propounded the suggestion that medical students might study the plants without interference with the designers for embroideries and tapestries; whence the first *Jardin des Plantes* (botanical garden), with its natural history museum, came into being. This institution seemed so excellent that every country adopted it as an example, and founded similar ones. Who would have thought it possible for embroidery thus to have come to the aid of science?" We copy this extract from Mr. ALAN COLE'S translation of M. LEFEBVRE'S *Embroidery and Lace*. The *Jardin des Plantes*, however, was founded by LOUIS XIII. in 1610, and finished in 1634, and it would seem that the embroiderers availed themselves, as they ought to, of the resources of science, rather than aided it themselves.

HYBRID CONIFERS.—Dr. RICHARD WETTSTEIN, in the *Proceedings* of the Imperial Academy of Science of Vienna, has published the results of his observations on the leaf-structure of various reputed hybrids, such as *Pinus roetica* ×, a hybrid between *P. montana* and *P. silvestris*; *P. Neireichiana* ×, between *P. nigricans* and *silvestris*; and also various Junipers. The anatomical characters of the foliage of the hybrids in every case are intermediate between those of the reputed parents, and hence lend confirmation to the opinion that the forms examined are really of hybrid origin.

FOREST MANAGEMENT IN GERMANY.—We hear much of the excellent system of management in German forests, and the value of the forests and forest schools as training institutes for those destined to enter the forest service of India. Some notes on the subject, therefore, from the pen of Sir DIETRICH BRANDIS, the late Inspector-General of Forests of the Government of India, will be welcomed by all interested in forest matters. Sir DIETRICH shows that modern forestry, so far from being unduly a matter of routine, treats each portion of a forest with special regard to the peculiar conditions of the locality and the requirements of the growing stock, while due attention is constantly paid to the

systematic arrangements on the entire forest range. While the system is thus elastic on the one side, due care is taken to prevent it becoming confused on the other. British foresters may, it is pointed out, be startled at the mass of what they may consider needless minutiae and superfluous figures, but these details constitute the essence of methodical forestry. "The forester's success is based upon close observation of numberless minute details in the development of the trees and shrubs of which his forests are composed. The observations and measurements made by him, combined with the results obtained by the researches of others, enable him to understand the complex problems which every forest presents, and to shape his treatment in the right manner. The fundamental principles underlying the forester's profession are simple enough, but their application is difficult. This must be learnt by study and by actual experience, as in every other profession." The work before us is entitled *Notes*, and its author expressly says that it is not to be considered as a complete treatise, but is simply meant to draw attention to a few essential points which may be useful to Indian foresters. We have, in fact, an account of the forests in the Grand Duchy of Baden, including the Black Forest together with notes of forests in other portions of Germany. Of special interest are the notes on the rotation of forest and cereal crops in some districts, where the coppice belongs to certain public corporations exercising a common proprietorship over a definite tract of ground cultivating the domain on a common system and sustaining itself by the produce. The coppice is cut after seventeen to nineteen years, the bark peeled, the sods burned, the ashes spread over the cleared land, and a crop, of Rye sown. The shareholders have the right to grow this Rye crop for their individual benefit, but having gathered in this crop the plot relapses into the state of undivided or common property when the coppice is allowed to grow up again. The appendices contain tables for the conversion of the methodical metrical system to the stupid and confused system still in use in this country, and an explanation of the more important German technical terms.

THE "FRUIT" OF GRASSES.—In the fruit or "grain" of grasses, according to the commonly received notion, the wall of the ovary (pericarp) becomes inseparably united with the testa of the contained seed. M. HENRI JUMELLE, however, in a recent communication to the *Academie des Sciences*, maintains that no such fusion ever takes place, but that what happens is the partial obliteration of the pericarp and the complete disappearance of the seed-coat. The fruit of grasses is thus botanically an achene, containing a seed destitute of testa.

HONG KONG.—The superintendent of the Botanic Gardens complains of the loss of shrubs and trees of great beauty and of twenty years' growth, in order to provide a site for a statue. We can of course offer no opinion on this special case, but we heartily endorse Mr. FORD'S opinion, that the Superintendent of the garden should be consulted in all such cases, and his judgment preferred to lay opinion. Mr. FORD has made an excursion into the province of Kwang Tung, bringing back with him no fewer than 800 living plants, chiefly of an ornamental character, so that we may hope in due season to see some of these novelties. Mr. FORD incidentally mentions that the timber of *Cunninghamia sinensis* is much more valuable than that of *Pinus sinensis*.

BULBS FOR THE ROYAL PARKS.—We are informed that the whole of the bulbs required by the First Commissioner of Works, and also the Metropolitan Board of Works, for planting in the royal parks, are being supplied by Messrs. JAMES CARTER & Co., the QUEEN'S seedsmen.

SHROPSHIRE FLORAL AND HORTICULTURAL SOCIETY.—Regarding the exhibition of this prosperous Society at Shrewsbury, of which a report was

given in our last issue, it may be noted that it was a complete success, 14,200 people visiting the show on the second day, the receipts from all sources reaching the respectable figure of £2700. An excellent display of Begonias of the tuberous section, both double and single-flowered, was made by Messrs. J. LAING & SONS, of Forest Hill, S.E., at the above show. These plants would demonstrate to the Salopians the floriferousness of a species of Begonias which has afforded so much satisfaction when bedded out this dripping summer, whereas the zonal Pelargoniums have been almost flowerless. Hollyhock blooms of good quality, and plants of *Saxifraga sarmentosa* tricolor *superba* were likewise shown by Messrs. LAING.

DEVIZES CASTLE.—We are informed that the purchaser of this picturesque and valuable property is Sir CHARLES HENRY S. RICH, Bart., of Shirley House, Hampshire. It is a very compact property; the fruit and kitchen gardens are situated on the sunny slopes of the castle mound, and the arrangements are very convenient, the houses being in good repair, and water laid on at all points. Under the management of Mr. THOMAS KING, who has now had charge of the gardens for a large number of years, they are in a high state of efficiency. Whether Mr. KING will remain in charge under the new owner is not yet settled.

TESTIMONIAL TO MR. JAMES HUNTLEY.—This gentleman, who has been actively connected with the Trowbridge Horticultural Society since its establishment thirty-six years ago, has this season also completed a term of twenty-five years' service as the Secretary of the Society. It is not too much to say that it is mainly owing to Mr. HUNTLEY'S exertions, not only that the Society holds so successful a show each year, but that it also has a reserve fund of £245. In recognition of Mr. HUNTLEY'S services during this long time, a committee has been formed which is engaged in raising a fund to present Mr. HUNTLEY with a suitable testimonial during the autumn. As the idea is being warmly taken up by the Trowbridge people, it is expected that a handsome sum will be realised. The honorary secretaries to the fund are Mr. T. S. HILL and J. HOWARD FOLEY, both of Trowbridge.

FLOWER SHOW AT BURNLEY.—The twelfth annual exhibition of plants, flowers, fruit, and vegetables, under the auspices of the Burnley Floral and Horticultural Society, was held at Turf Moor on Saturday, the 25th ult., under the patronage of Sir JOHN THURSBY. The day was fine, and there was a large attendance of visitors. The past season has not been very favourable for the cultivation of fruit or flowers, and this was shown particularly in the classes reserved to professional gardeners. In some of the open classes there was little or no competition owing to the small number of entries. Fuchsias were a good class, and the Picotees and Carnations were above the average, whilst fruit, generally speaking, was a good show considering the season. The principal prize-winner was Sir JOHN THURSBY'S gardener.

ARBOR DAY.—The following note, under the above heading, occurs in a recent report on the agriculture of Chicago for the year 1887. After referring to the arid regions of Dakota, Nebraska, and Kansas, the report says:—"In the above-mentioned districts there is an almost total absence of trees, which accounts for the deficiency of moisture, while in the timber regions and in the mountains the reckless cutting, especially of young trees, has led to a serious decrease in timber and firewood. Various Acts have been passed checking and restraining the unlimited waste which formerly prevailed, and the disposal of land under the Timber Culture Law will, no doubt, have a beneficial effect. It was in the State of Nebraska, fifteen years ago, that a voluntary movement first originated to set apart one day in the year, called 'Arbor Day,' for the purpose of

encouraging the planting of trees, and forestry in general. The example has been followed in almost every State and Territory in this district, and a public holiday is proclaimed by the Legislature, the day being fixed generally by the Governor, when trees are planted by local authorities and other notable persons; planting of shade trees in streets is carried on by town councils, and the people generally are encouraged to memorialise the day by similar acts. The White Elm is considered the best tree, being hardy, and of rapid growth. The different varieties of Oak, Walnut, and Maple, the Elm, Ash, Catalpa, Linden, Tulip tree, Pine, and other trees are variously recommended to the public, as experiments have proved them to thrive in the different localities, or are suitable to the purposes desired; and the holiday is very generally observed with its intended object. In Kansas there are now more than 250,000 acres of artificial forest, and a large number in Nebraska, and the observance of 'Arbor Day' promises to be of great benefit eventually to the country."

RYDE HORTICULTURAL SHOW.—The annual show of flowers and fruit, favoured with a fine day, took place on Thursday, August 23, in the beautiful grounds of the Terrace Gardens, which were kindly lent by Mrs. G. PACK. The show was generally pronounced to be better than any previous exhibition. The exhibits were shown in three large tents, the Mayor attending and opening the show. In the evening the beautiful grounds were lighted up by hundreds of lamps, and looked like a fairy land, and was well patronised by the public. Altogether the show was a great success, and reflects much credit upon Mr. J. ELEY, the Secretary, and those who carried it out.

THE COLD STORAGE OF FRUIT.—In our last issue we explained the system of evaporating ammonia by which the temperature was reduced; giving also the temperatures of the three rooms which were at 38°, 25°, and 22° Fahr., respectively. Since our last issue we learn from the *Journal of Horticulture* that the committee appointed by the Royal Horticultural Society to ascertain the practicability of preserving soft fruits under the influence of cold, met on Thursday, Aug. 23, at the Cold Storage Company's offices in Gracechurch Street, T. FRANCIS RIVERS, Esq., in the chair, and examined the Cherries referred to by us at p. 215. Several half-bushel baskets of Cherries had been placed in the chambers on August 8, wet, and some of them decayed. Some were frozen like marbles, others were abnormally firm, but not actually frozen, others remaining soft. Those that were not frozen were in the same condition as when stored fifteen days previously, and those that were decayed then had not in the slightest degree communicated decay to others pressing against them. Those in the coldest freezing-chamber were spoiled. Soft fruits must evidently not be frozen, and the point to determine is the amount of cold that suffices to arrest fermentation, and this settled, it is not unlikely that soft fruit can be kept for some weeks or months. Various kinds of fruit will be tried under differing conditions in the hope of acquiring information of substantial value.

POTATO DISEASE.—The proportions of sulphate of copper recommended by M. PRILLIEUX to be used for the cure or check of the Potato disease are 6 kilogrammes (13½ lb.) of sulphate of copper, an equal quantity of lime, and 1 hectolitre (22 gallons) of water. As we have already mentioned, this application used freely, with a syringe or a spray-producer, is most serviceable in the case of the corresponding malady in the Vine, and its use under these circumstances has suggested its employment to Potatoes. We earnestly hope some of our readers will try it and let us know the results. It should be used directly a spot is seen on the leaves. It is of no use trying it when the leaves and haulm are already half rotten.

THE WEATHER.—Nothing but disasters to report about the weather. Details are needless, and would only be harrowing to no purpose.

FOREIGN CORRESPONDENCE.

HORTICULTURAL NOTES FROM BERLIN.

THE floral establishments in Berlin plainly show that the height of summer is passed. Roses, with the exception of Teas, are over, but Carnations take their place. Besides these, which are not so generally in cultivation as in England, Fuchsias, Heliotropes, and Hydrangeas, are very popular. The latter, especially the blue flowering varieties, are very luxuriantly grown. *Lilium auratum* has won favour wonderfully during the last few years, but it is a pity that, for convenience sake, the anthers have to be cut off, thereby robbing the flowers of one of their greatest beauties. Large flowering Pansies find many purchasers. Zonal Pelargoniums are among the market plants for which there is the largest sale, and splendid dark blue varieties of *Lobelia erinus* rank next.

The large floral establishments daily contrive new arrangements to tempt the public, in which colours are effectively contrasted, but also with refinement. Lately I saw a cushion-shaped bouquet (a form that is very popular just now), which was composed of Pansy Faust, a pure and velvety-black variety laid against a snow-white background of white Stocks. Another arrangement was made up on a wire frame covered with dark green gauze; the framework was composed of *Viburnum Opulus*, fl.-pl., while in the middle, quite distinct from these snow-ball-like flowers, was a raised loose bouquet of La France Rose-buds.

The dweller in Berlin knows well how to appreciate the value of evergreen plants for indoor decoration, and an infinite variety is to be found in our flower markets. In the first rank are *Latania borbonica*, *Phoenix reclinata*; then *Dracena indivisa*, *Aletris fragrans*, *Philodendron pertusum*, and *Araucaria excelsa*. Besides these there is the favourite *Ficus elastica*. One or more specimens of these plants is to be found in every home; and next to them as indoor plants rank *Rhapis flabelliformis*, some *Dracenas* and *Cordylines*, and more especially certain *Cactææ*. Of the latter, very fine specimens are to be met with often in the dwellings of the poorer classes, and which are so well grown as to be fully worthy of a First-class Certificate. Among such plants, too, are some sorts of Pelargoniums, notably the so-called "Rose" Pelargonium. *Aspidistras*, too, which are practically indestructible, are naturally seldom wanting, nor are *Dracenas*, and the equally abundant *Curculigo recurvata*, which are classed under the general name of Palms even by the educated public. *From our Berlin Correspondent.*

PHILADELPHIA.

On June 28 Councilman Meehan's ordinance, inaugurating a system of small parks for Philadelphia, finally became law, after a five years' struggle. Only five of the thirty-one intended to be established were adopted by this preliminary ordinance, one of these being the famous old botanic garden of John Bartram, and another being the old homestead of Logan, the first secretary of the Commonwealth of Pennsylvania under William Penn.

TRADE NOTICES.

DICKSONS (LIMITED).—The formation of a limited company by the amalgamation of the two well-known firms of the Dicksons, at Chester, has already been announced in the *Gardeners' Chronicle*, and the Company now possesses one of the largest nursery and seed businesses in the United Kingdom—the total area under cultivation, including the three branch nurseries in Wales, being over 400 acres, well cropped with healthy, thriving stock.

Seedlings of trees, shrubs and evergreens are grown by millions. Transplanted forest trees, plants for underwoods, game coverts, hedges and shrubberies

may be counted by millions also. Larch Firs and Thorns represent, perhaps, the largest numbers, about three millions of each being available for sale this season; Scotch, Austrian, Corsican, Douglas, and Spruce are largely grown, and numerous fine drifts of Oaks, Ash, Elms, Beech and other hardwoods.

Choice Conifers, fine green and variegated Hollies, Laurels, Aucubas, choice Rhododendrons and other evergreens cover many acres, and the quantity of flowering and ornamental trees and shrubs appears to be without limit. Trees for avenues, street planting, or for grouping in parks are here in great numbers, fine examples from 10 to 18 feet high.

Sixty-five acres are devoted to the cultivation of fruit trees, for which these nurseries have long been noted, and in addition to young trees of the usual planting sizes, there are quantities of extra large, well-grown fruiting trees trained in pyramid and espalier forms.

That Roses thrive well in the climate and soil of Chester is demonstrated by the luxuriant growth of the large numbers cultivated.

The indoor department comprises no fewer than eighty glasshouses well filled with stove and greenhouse plants, fine Camellias, Indian Azaleas, Tea and other Roses, strong Vines, fruit trees in pots for orchard-house, Figs, &c. Numerous ranges of brick and wooden frames with lights are utilised for plant propagating purposes and growing young succession stock.

Close by these houses and pits are grown the large collections of herbaceous and alpine plants. Bulbs are extensively cultivated, especially Narcissi, one plot containing many thousands of Sir Watkin, a very fine form, originally distributed by Messrs. Dickson; while of Emperor, Empress, Horsfield, and other leading varieties there are large stocks.

Amongst Carnations, Mrs. Reynolds Hole is a striking novelty; the flowers, which are very large, and produced freely, they are of a beautiful salmon colour. This Carnation will probably be in great demand, to meet which a stock of many thousands is ready for distribution.

Before leaving the nurseries we must bear testimony to the good order in which they are kept, and to the excellent condition of the stock, which reflects the highest credit upon the management.

The Seed Department.—To convey an idea of the magnitude of this branch of the business, it may be mentioned that there are two sets of spacious buildings in Eastgate Street, containing commodious seed and bulb premises, with well-appointed offices over them; contiguous is a large warehouse replete with modern implements and agricultural machinery. Large farm seed stores are situated in St. John Street and St. Werburgh Street, in which is the most approved machinery, driven by gas-engines, for cleaning seeds, and upon which no expense has been spared to make them as perfect as possible. As all seeds are sold under guarantee as to purity and stated percentages of germination, the utmost care and unremitting attention of the principal partners are necessary. Farm and garden seeds are saved from their own specially selected stocks under their personal supervision, and duly tested before being sent away to purchasers. Here, as in the nurseries, order and method are everywhere apparent, and as the managing directors are assisted by a most efficient staff, it is evident that every care is taken to ensure the satisfactory execution of all orders. The valuation of the entire stocks of both firms for the purpose of amalgamation was entrusted to the highly competent hands of Mr. John Fraser, of the Lea Bridge Nurseries, Leyton; and of Mr. Maurice Young, of the Nurseries, Milford, Surrey. About one month was occupied by these gentlemen in the task, which was eventually completed to the satisfaction of all parties.

— I see in your issue of the 11th ult., under "Trade Notices," that Eastgate Nursery has passed into the hands of Messrs. W. & J. Brown. This will mislead the public, as they have not purchased the trade, but only part of the freehold, and the business will be carried on as heretofore. *No. House, Eastgate Nurseries, Peterborough, August 20.*

— Mr. W. Napper, late of the Exeter Nurseries, where he was employed for twenty years, has been engaged as manager by Messrs. Jarman & Co., nurserymen, florists, &c., Chard.

— Mr. D. Margetts, ornamental wireworker, and maker of exhibition bouquet and flower-stands, has removed from 16, York Street, Covent Garden, to 8, Vinegar Yard, Catherine Street, W.C.

NURSERY NOTES.

NOTES FROM SOUTHFIELDS NURSERY.

In looking over these grounds of Messrs. J. Veitch & Sons, Chelsea, we could not but remark the change in the age and general appearance of the trees there grown for sale, and doubtless to be observed also in most other fruit tree nurseries. Whereas, formerly, fruiting stuff was difficult to obtain, and always dear, it is now found in quantity to meet the demands of the day. Men will not wait to see a tree grow from a diminutive "maiden" as was formerly done, but they must have their young trees sent to them in a bearing condition. This is the natural corollary to growing Apples and Pears on dwarfing stocks to obtain returns earlier than is the case when Crab and wilding Pear are employed for the purpose. At this nursery fruiting trees take up much of the area that in past years was under a crop of young fruitless maidens, and one or two-year "cut backs." At the time of our visit there were cordon Gooseberries, Currants, Apples, Pears, and Plums, besides bush and pyramidal formed trees of the last three in bearing condition.

Peaches were well set with bloom-buds; Cherries, of late Duke and Morello varieties, and Plums were loaded with fruits, the trees being fan-trained generally, although in the case of Plums we found horizontal-trained examples.

It may be of interest to name some of the varieties of Apples which, in this unfavourable season, are bearing plenty of fruit as bushes and pyramids, and in scanning the list it will be remarked that most of them are varieties which have become popular by reason of their good cropping or other desirable properties, viz.:—King of the Pippins, Kerry, Ribston, Sturmer, and Cox's Orange Pippins; Dumelow's Seedling, Ecklinberg, Keswick Codlin, Beauty of Kent, Alexander, Schoolmaster, Worcester Pearmain, Stirling Castle, Bauman's Red Reinette, Betty Geeson, Alfriston, Lane's Prince Albert, Boston Russet, Warner's King, Grenadier, Old Hawthornden, and Winter Hawthornden, Rosemary Russet, and Lord Suffield.

Amongst Plums in fruit may be mentioned Wilmot's Orleans, and as large as the early variety, but of better quality; the Czar is another prolific variety.

As a stock for dwarf-trained Cherries the Mahaleb has quite usurped the place of the wilding Cherry, its growth keeping better pace with that of the scion, and as it is almost free from shoots and suckers it is as smooth as a gun-barrel, and well looking.

Three fine Figs will be sent out from this nursery shortly, viz., Violette Sepor, with very dark flesh, and a delicious flavour; Pingo de Mello, a fine fruit, and the tree an excellent cropper, producing well thrice in a season; and St. John's, a white Fig of the best quality. These Figs are of Portuguese origin, the best which a *connoisseur* could select amongst the numerous varieties grown in that country.

USEFUL INVENTIONS.

HIGH-LEVEL WATERING-POT.

By means of this kind of watering-pot much loss of time, and some inconvenience are avoided in supplying plants with water when standing on overhead shelves in plant-houses and rockeries, both indoors and out. As will be seen from the figure (A, fig. 29), the pot may be tilted at any desired angle to allow the water to flow out, by means of a shaft of wood with which a jointed iron rod connected with the spout of the can runs parallel. As a watering-can is not a discriminating being, we do not understand by what means the gardener who does the watering finds out which plants want his attention and which do not, without mounting a pair of steps, and examining them. So much for its drawback when used to water subjects above man's height.

WEED ERADICATOR.

The other implement figured (B) is a handy kind of hoe, likely to prove of great use in cultivating and stirring the soil amongst, Onions, Carrots, Lettuces, and bedding plants. Owing to its form it may be used sideways to scrape away small weeds, or with its narrower face downwards to cut off weeds and loosen the surface. Both implements are the patented inventions of Mr. G. R. King, Upton, Torquay, and may be obtained retail at all ironmongers and seedsmen.

HOME CORRESPONDENCE.

THE POTATO CROP.—The southern division of Essex has suffered much from the rains of July. In that month we had 7.57 inches of rain, and doubtless to that rainfall must be ascribed the sudden appearance of the disease. When I sent you my notes, which you published at page 154, there was no disease, but suddenly, like a thief in the night, it came, in spots in the garden and in the field, and has since spread in all directions. I fear our promising crop will be almost lost. The old Ash-leaved variety on an early border was nearly ripe in the haulm when the blight came, and I find a tuber here and there diseased. Myatt's Kidney, in a later position, promised to be the best crop I ever saw—in fact, we had begun to dig them. They were all sound at first, but now, after ten days, about one

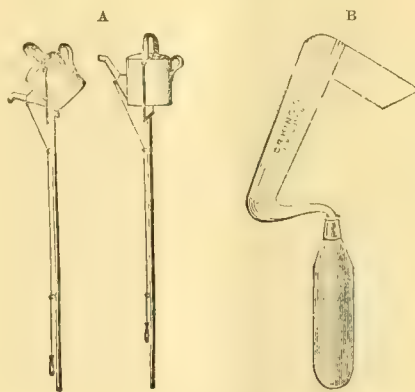


FIG. 29.—A, HIGH-LEVEL WATERING POT. B, WEED ERADICATOR.

tuber in five only is sound. I fear, by the look of things, all our fine lot of Victorias will go. It is generally hit hard. There is a large lot of Myatts in the same field for early winter use; we shall perhaps get one bushel out of six that are sound; perhaps not. I hope Sutton's 36 will stand better; it has given us the best crop and the most handsome tubers I ever saw, but I fear nothing will withstand such an acute attack. I walked through some neighbouring fields for a few miles in the gloaming last night. It soon became too dark to distinguish one crop from another, but the sense of smell was enough for a field of Potatoes; and yet it is not all bad. I saw a field of Regents being dug to-day ten minutes walk from where I write this. It is light soil over gravel and very dry; the haulm is not yet stricken, consequently the tubers are sound. I suggested sending them off at once, but the answer was returned "We want some for winter use." Our soil is heavy, and the sudden downpour of 3.49 inches of rain in three days was too much for our drainage. The water was held back over all the crops for thirty-six hours. The rock garden was under water, there was 5 feet of it in the stokehole; it stood 1 foot over the top of the hot-water boilers. We were thirty-six hours before we could pump and bale it all out. I trust that the disease is local, as few districts can have suffered so much from back-water as we did. The low grounds in the valley of the Roden, near Romford and Ilford, were quite under water for twenty-four, and in some parts forty-eight hours. The local papers say it was all caused by the sluices at Barking Mills being closed, and that they could not be opened when the rush of uncultured cut grass from the meadows poured

down the river and was stopped at the closed sluices. J. Douglas.

GRAPES IN BAD CONDITION.—In his communication of August 25, "J. C." does not say anything about the drainage under his Vine border. The subsoil may be water-logged, or it may be too dry. Either extreme will cause "shanking," so also will red-spider, which greatly injures the foliage, and causes its premature discoloration. The Vines are planted too closely together, and both foliage and roots must suffer. It would have been better to have relied upon the old Vines throwing up fresh canes rather than to have planted young Vines between them, as they rarely do well under such circumstances. If it were my case, I should cut the Grapes as soon as possible, sponge the underside of the foliage with soapy water, syringing afterwards on fine evenings. Give plenty of top-ventilation, maintain a gentle warmth in the grape house, avoid sulphur, and encourage the formation of healthy leaves and well-ripened wood. I should keep the border both outside and in rather on the dry side during the winter, and look well to the drainage. In the spring the Vines might be allowed to start with little or no fire-heat, and no watering except with the syringe before the shoots are 3 inches long. The border inside should then receive a copious supply of tepid rain-water, and the temperature of the house should be gradually raised. During the summer water should be given both outside and in whenever required. If not satisfied with the old Vines, in May or June I should root them up and plant yearling Vines prepared in readiness. They never do so well as when planted early in June in fresh warm compost. The growth they make the first season is astonishing, and Vines planted thus in a green and active state ever after show a superiority over those planted at any other time. In old houses Vines are generally trained too near the glass. The top ventilation is often insufficient, and much scalding occurs through not opening early in the morning. W. R., Streatham Hill.

GENTIANA ASCLEPIADEA.—In reply to the inquiry of "C. E. F." in the *Gardeners' Chronicle* for 26th ult., I would state that the above hardy herbaceous perennial may be propagated by seed sown as soon as it is ripe, in a mixture of sandy leaf-mould and loam, and placed in a gentle heat. The young plants should be gradually hardened off before being planted out, which may be done in the spring. The plant may also be propagated by division of the roots in the spring. W. A. Hodge.

VEGETABLES.—Although most gardeners have been lamenting the scarcity of fruit this season, they have reason to rejoice in the abundance of vegetables, as never, perhaps, was there a summer so suitable for most garden crops, and Peas and Scarlet Runners seem quite to revel in the weather. The first-named, however, have not set quite so full as they do sometimes, but they have gone up the sticks and far beyond, or are drooping down again, or striking out right and left, searching for something to lay hold of to support themselves, and nearly choking or smothering each other with haulm. In ordinary years mildew would have been rife long ere this, but as yet (August 13) no trace of it is to be seen, and we may with some confidence look for a full supply of Peas late in the autumn. Scarlet Runners are setting and swelling freely, but dwarf French Beans like it a little warmer, and are lagging behind, looking a little chilly, but they can well be spared, and the wonder is that they should be grown so largely as they are, considering that the Runner kinds are so much more hardy and so superior in flavour. Broad Beans are also cool weather plants, and instead of being dried up as they usually are at this time of year, or intested with blackfly, they are fresh and full of bloom or pods; and Cauliflowers are just as fresh, close, and white as they are in spring or autumn; and all the Brassica tribe, instead of having the "blues," are rampant in growth, and look too "proud" to face a hard winter. Celery, strange to say, has not made the headway one might have expected from its being half aquatic, but it is on the move now, and no doubt will make rapid progress after this, as the roots have a good hold. Tomatoes are very backward, as they are lovers of sunshine, and the weather cannot well be too hot for them. The set is also bad, the wet and absence of solar rays having caused most of the first flowers to fall, and I doubt if those on the plants now will set in

time for the fruit to ripen before frost cuts it off in the autumn. Potatoes show patches of disease here and there, but the tops in a general way look well, and it is to be hoped, now that we are having a dry atmosphere and sun and warmth, the mould may be stayed and the tubers escape [?]. The earth is full of these at the roots of the plants, and they promise to be unusually large, and, with favourable weather, must be of fine quality, as there will be no secondary swelling like we have when the soil is so heated and dry. *J. Sheppard.*

CABBAGES.—Whatever may have been the products of Mr. Wilkes' trial of Sutton's Early Gem and Little Pixie in his limited way, it is certain that these kinds differ appreciably in Messrs. Sutton & Son's trial-ground, Little Gem being greener, earlier, and dwarfier and more compact. The firm also catalogue Little Pixie, and it is hardly probable they would offer the same kinds under two diverse names in the same list. That distinctions in Cabbages may be, indeed are, almost infinitesimal there can be no doubt, because improvements and diversities of a desirable nature come slowly; but it is the expert, enterprising seedsman, who has large breadths of many varieties under his notice year after year who has the most favourable opportunities for detecting diversities of character, selecting, and fixing them; and it is to this watchful care that we owe so largely that remarkable improvement in garden products which has marked the past twenty years; thus, possibly, Tom Thumb developed from the old Early Dwarf, Little Pixie from Tom Thumb, Little Gem from Little Pixie, &c., at least such may be so, although I have no reason for saying such is the case—Mr. Wilkes does not say whether he purchased his seed from the Messrs. Sutton & Sons direct. With respect to my visit to the Reading trial-grounds, it may be as well to say that grounds of that kind are kept by seedsmen specially for their own use and experience, and not for that of the general public. There is, however, an immense deal of information to be gathered in them, and I wished a market gardening neighbour who was with me at Reading recently to have an opportunity to see what good things in the way of vegetables might be found in a place which is bolted against him and his class as a rule. The fact that so good an expert in market growing was specially warm on Little Gem and the other things noted, led me to make mention of them in these pages. *A. D.*

ALEXANDER AND HALE'S EARLY PEACHES.—In reply to Mr. Shepherd's inquiry in your issue of last week concerning the above, I can confidently assure him that they are quite distinct. We have them both growing in our early Peach-house, and I had finished gathering Alexander fully a fortnight before Hale's was at all fit. I consider Alexander the earliest variety in commerce and that it should be planted (one tree at least) in every collection, as it prolongs the season when associated with Royal George and other favourite sorts. *W. Beswick, Besborough Court, Cork.*

—The Alexander Peach is quite distinct from Hales' Early, although very similar in appearance. We have both varieties here in our large Peach-house, and also on a south-east wall. The first fruit of Alexander was ripe inside on July 6, the first fruit of Hales' Early on July 16, and outside Alexander was ready on July 30, and Hales' Early on August 24. The first was raised by Mr. Rivers, Sawbridgeworth; the latter is of American origin, as are Waterloo and Amsden June; the two latter I consider almost identical with Alexander in every respect. [It is rather earlier. *Ed.*] For very early forcing I prefer Early Beatrice and Early Louise, the above American varieties being not quite so trustworthy. Early Beatrice requires to be on a very strong growing stock, it will then give large fruits; but for a cold house, or one to which very little fire-heat is applied, and for the earliest crop in the open, there is no variety at present known that is better than Alexander. *W. H. Divers, Ketton Hall.*

WHAT IS AN HERBACEOUS PLANT?—I have read the note by your correspondent, "A. D.," anent the above, and am inclined to the belief that he hardly realises the point I have endeavoured to raise, his dogmatic clearing up of the matter notwithstanding. Does "A. D." himself clearly understand the term "herbaceous" when he says, "When the term herbaceous is employed all real perennials should be excluded"? I think not. Are not all herbaceous plants true perennials? If not, how can they perform the function of "producing annual

flowering stems from a perennial root"? "A. D.'s" apparent definition of a perennial is that it is evergreen; but this is not essential; a plant may be perennial if deciduous, provided that it endures three or more years. No plant more decidedly performs its duties as an herbaceous plant than *Lilium candidum*; it is not "practically evergreen," as asserted by your correspondent, but as surely dies down annually, leaf and stem, as does a Daffodil or a Tulip; the radical leaves, which vanish with the uprising flower-stem, being renewed when flowering is complete, or in very dry seasons they do not appear till the early autumnal rains are experienced, "A. D." will pardon me not attributing my "doubts and difficulties" as he calls them to the same cause as himself, viz., "because the term herbaceous is still obstinately adhered to in schedules when all sorts of hardy border plants are invited to be exhibited." If your correspondent will turn to my original note he will find I distinctly refer to two great societies, that of the Royal Botanic and Royal Horticultural. In either case these societies would know what should be shown when they ask for a "group of hardy herbaceous plants," in their respective schedules, and would therefore not expect "all sorts of hardy border plants to be exhibited." What a sad confusion would the lax rendering of any schedule cause to the judges and exhibitors alike if the suggestion of "A. D." were carried into effect, for what have judges to guide them in arriving at their decisions but the *verbatim* rendering of the schedules? Particularly is this the case when one exhibitor stages his plants according to the requirements of the schedule, and another does not; for even supposing the former to be slightly inferior to the latter, the judges most assuredly would not give the premier position to the one who had departed from the wording of the schedule. There are plenty of really good herbaceous plants to be had now, and therefore the admission of either annuals or biennials should disqualify. Especially would I enforce this at our great London exhibitions, which should in reality be the school, as it were, for local and provincial shows. In offering a prize for hardy plants annually at our show in my district (of which I am a joint secretary), I employ the words "hardy perennials," to the exclusion of flowering shrubs. This is now so clearly understood by the exhibitors in this particular class, that we have no ground for complaint, and, from experience, I am of opinion that if framers of schedules for local shows would strive a little more to instruct exhibitors in such matters there would be an end of mistakes in this way, and this would be far more becoming to any horticultural society than an attempt to establish and cultivate an error so false as the admission of annuals and biennials among hardy herbaceous perennials. *E. Jenkins.*

THE DANIELS POTATO.—A few weeks ago you kindly made mention of a Potato called Daniels, and how well the variety looked when growing, giving great promise. We had a small local exhibition here the other week, and I was tempted to dig up my Daniels. They exceeded my expectations. I staged two dishes, and was awarded two prizes in a strong competition with different varieties in both classes. A friend of mine was present when I took up two roots to be weighed, on one of which we found twenty-one Potatoes, and twenty on the other. On weighing the best root it was found to turn the scale at 6 lb., all good sound tubers, clean and free from scab. After exhibiting at Keighley, they were put to the test of being cooked for the table, and were found to be all that could be desired. *F. G., Epworth.*

"DROPPERS" IN TULIPA SYLVESTRIS.—I send a box with a few specimens of "sinkers," as we call them in Holland, in cultivated bulbs of *Tulipa sylvestris*. This peculiarity has been known here as long as I can remember, and it occurs principally and regularly with cultivated *T. sylvestris*. Usually at the bottom of the old bulbs there is found only one bulb, at the end of a long thread, of 10 to 30 centim. in length (there may be sometimes even longer ones); the fact that two bulbs are coming from the old bulb, as in one of the specimens sent, is an exception. There are some other Tulips where the new bulbs, when the beds are taken up, are found in the ground at a much lower level than the old ones were planted. This phenomenon is especially observed in some of the yellow and citron early single bulbs, which are known as *Ducs* (not *Duc van Thol*), such as *Duc Voorhelm*, *Duc d'Orange*, &c.; but up to the present the cords which in *T. sylvestris* are found between the old and the new

bulbs have not been found here. It may be that they have existed and have rotted at an early period, but this fact has not been observed. *J. H. Krelage, Haarlem.* [The specimens sent were illustrations of what English Tulip growers call droppers (fig. 30). The structure was obvious on cutting one open. The old bulb mostly decays, but one or more of its scales or leaves remains with an axillary bud, which forms the new bulb. Then the scale or leaf grows downwards into the soil, carrying the bulb with it, so that at length there is a long tubular thread with the bulb at the bottom. This may be a protection from frost, or the inquisitiveness of birds and mice. *Ed.*]

THE HEDGEHOG'S CRY.—"Hystrix" (p. 189) has only just supplanted me on this subject. Unless the hedgehog emits two distinct notes, I cannot at all account for the loud whistling noise heard by your correspondent, for here I have heard them giving a sound resembling that of a calf when sucking. Several evenings of late, when having a walk round the grounds, I have come on the hedgehog unawares, and have thus had an opportunity of noticing its ways—not its cries, for it appears to cry but rarely, and never (that I am aware of) when in danger. Whoever heard the hedgehog complain when being worried by a dog, or when trundled into the water? The noise is a sort of suppressed squeal mingled with a sucking noise; but this, be it remembered, is from the young ones. It is a disputed point as to what the cry really resembles. I think it varies with the age of the animal. *A. D. Webster.*

THE MISUSE OF THE POTATO HAULM.—Growers of Potatoes should be more careful as to what they do with blight-stricken haulms. The plan I adopt is to wheel them away, and burn them at once. It would seem that the mischief done by the haulms lying about is not realised by many persons, for I have seen farmers carting diseased haulm into the fold-yard to be made into manure, as they will tell you, and I have seen the same carried back to the field, there to wait until planting time came round, when it could still be picked out by the forkful from among the rest of the manure. It is also a common practice amongst those who keep pigs to throw a few forkfuls of diseased haulm into the piggery, where the leaves are soon trodden out of sight, but the stalks are more enduring, and eventually get carted with the rest into the fields as manure. *F. G.* [Now that the consequences of such practice are known no words are strong enough to reprobate it. *Ed.*]

SOCIETIES.

ROYAL HORTICULTURAL.

AUGUST 28.—The Drill Hall was made to look very bright by the extensive display of cut spikes of Gladioli from Messrs. Kelway & Son, and by the charming group of Orchids arranged by Mr. B. S. Williams. Hardy flowers from Mr. Ware, and Begonias from Messrs. Cannell & Sons were also prominent; while from the Society's gardens at Chiswick there was sent a fine collection of Asters and Stocks, the floral display being of a lively and varied nature. Messrs. Veitch & Son had a collection of fruit which formed the chief object in the fruit division.

Floral Committee.

Present: Rev. W. Wilks (Sec. R.H.S.), in the chair; and Messrs. Shirley Hibberd, H. Herbst, J. Fraser, J. Walker, W. Holmes, W. Goldring, R. Dean, B. Wynne, H. Ballantine, J. Dominy, H. M. Pollett, M. T. Masters, J. O'Brien, and E. Hill.

Orchids were not largely shown beyond the group from Mr. B. S. Williams, Victoria and Paradise Nurseries, Upper Holloway, London, N., who had some excellent plants neatly arranged and displayed by Ferns and other foliage plants. *Cypripedium* were conspicuous objects. *C. tessellatum porphyreum*, not often seen, was represented by one plant; it has peculiar mottled dull red-brown flowers, not strikingly beautiful. *C. ananthum* was one of the brightest flowered shown, the rich madder-red of the lip and petals contrasting with the pure white margin of the dorsal sepal, which is green lined with red-brown spots towards the base; a variety of this, named *superbum*, differed in being more deeply red-coloured in the dorsal sepal, the margin being greatly reduced. Others were *C. Sanderianum*, the dorsal sepal of which is distinct and striking, being deep

brown with broad yellow lines; *C. Harrisianum*, *C. superbiens*, and *C. Ashburtoniae* superbum. A good piece of *Cattleya Dowiana* was attractive, and also *Laelia Turneri*, *Mesospinidium vulcanicum*, and *Odontoglossum biconense* var. *alba*, *Cattleya Eldorado splendens*, with a richly coloured lip, and *Pachystoma Thomsonianum*.

A number of *Sarracenias* in good examples were sent by the same exhibitor, and a pan of *Drosera dichotoma*, *D. capensis*, *Dionaea muscipula*, and *Cephalotus follicularis*; also a very pretty variety of *Adiantum Capillus-Veneris* named *versailleense*, in which the pinnae spring from the summit of the rachis in a tuft, as in the variety *Luddemanniana*, but more loosely, giving a graceful and light appearance, yet compact; it makes a capital pan plant. Hybrid greenhouse *Rhododendrons* and a few *Amaryllis* completed the display.

Mr. Robbins, gr. to W. Vanner, Esq., Camden Wood, Chislehurst, sent a well-flowered plant of *Odontoglossum* (*Miltonia*) *Karwinski* with a spike about 4 feet in length; it is a form of *O. keve*; the lip was wholly of a soft lilac-violet colour.

Cattleya Loddigesii, *Le Doux's* variety was shown by Mr. Rhymer, gr. to A. le Doux, Esq., Langdon House, East Moulsey; sepals and petals delicate mauve-lilac, with a slightly lighter lip, pale cream-coloured at the margin. It was in excellent condition, and bore a number of flowers.

Disa lacera, not frequently to be seen, was shown from Mr. G. W. Cummins, gr. to A. H. Smee, Esq., The Grange, Wallington; it is not a very showy species, but the flower of a most pleasing light violet hue; the lip is much fringed, and is darker than the rest of the flower.

Mr. G. T. White, Drayton Villa, Winchmore Hill, N., had a *Trichocentrum*, to which he had given the name *Ella*; it attains a height of about 4-6 inches; flower cup-shaped, dull white, spotted with dull rosy-lake; lip similarly coloured, but with a yellow crest.

Messrs. H. Cannell & Sons, Swanley, Kent, had a group of single and double tuberous *Begonias*, embracing a great range of colour, and of which some were very beautiful. The *Lady* a single white variety, almost circular in form, and with pale stamens, was very noticeable, and moreover was of dwarf habit. Mrs. Lynch was a good double, of a delicate rosy-pink colour, and each segment frilled, and the whole flower of fine form. Mrs. Lascelles was a dull, deep pink, of large size (double), and Mrs. Berkeley was also good, being deeper and brighter in colour than Mrs. Lascelles. Messrs. Cannell also sent a number of *Cannas*, of which the following were selected for Certificates:—Admiral Courbet, light yellow, spotted with orange-red, with very large and broad foliage; Madame Just, in which the outer segments were orange and broad, the inner narrow and scarlet; Francesque Morel, rich crimson, large flowered; Capricieuse, scarlet, with a yellow margin—a striking object.

The collection of spikes of *Gladioli*, numbering about 100, from Messrs. Kelway & Son, Langport, was probably the chief item of the show. Several new varieties were to be seen, some of which were awarded Certificates by the committee. The individual flowers were large, and the combinations of colours very pleasing, some of the finest were:—Bullion, sulphur-yellow with a few red flakes; Mago, bright-crimson with white in the throat; Nicot, very pale pink, with the inner segments pale yellowish, faintly flaked with pink on all; Accia, rich crimson, lighter in the throat; Magas, white with the very faintest suspicion of pink suffusion, with a pink line in the throat; Cebes, magenta; Pompus, brick-red, purplish throat; Lyde, lilac-pink; and Dares, salmon with scarlet spots and a lake colour in the throat. This firm also sent a number of pretty *Gaillardias*, one named *splendidissima plenissima*, a double flower, being the greatest novelty. It is deep blood-red tipped with yellow. They also showed a few very good spikes of *Delphiniums*—Horus, deep blue, with a white centre, was especially fine. Rob Roy, light blue; and Lycas, rich azure, were other good forms. *Funkia grandiflora* and *Lobelia splendens* were well shown by Mr. W. Roupell, Harvey Lodge, Roupell Park, S.W.

Mr. J. F. West, gr. to W. Keith, Esq., Brentwood, sent a few *Dahlias*. Beauty of Brentwood (*Cactus*), rich and bright purple-lake, was a specially fine flower. Ethel Keith, also a *Cactus* form, was yellow and white, but was not favourably received.

Some fine stands of *African Marigolds* were shown by Messrs. Veitch & Sons, Chelsea, some measuring as much as 4 inches in diameter; and in colour rich orange, pale lemon, and others were striped yellow and brown, the latter being of smaller dimensions.

A large and varied collection of Stocks and Asters was staged from the Society's Gardens, Chiswick, the finest of which are referred to in the report of the Chiswick Committee in another column. The colours were very bright and greatly varied, the Asters looking particularly well. Cut spikes of *Hedychium Gardinerii* were also shown, and very pretty objects they are too.

Dahlias were largely contributed by Messrs. Cheal & Son, Crawley, Sussex, and were arranged in their new stands for flowers, by which means they were well displayed. The following were the most noticeable of "*Cactus*" varieties:—Mr. Tait, white; Annie Harvey, rich red; General Gordon, light scarlet. The pompons were, as usual, popular varieties, but the single varieties contained one or two distinct varieties; the best were:—Mr. Rose, white, heavily flaked with crimson-lake; Sunningdale Yellow, bright yellow; Miss H. Cameron, lilac; Duchess of Albany, lilac, with large decidedly brown flakes—a highly striking variety, and totally distinct, the combination of

Delphinium Horns, from Messrs. Kelway & Son. *Gaillardia splendidissima plenissima*, from Messrs. Kelway & Son.

Begonia (double) Mrs. Lynch, Messrs. H. Cannell & Sons.

Begonia (double) Lascelles, from Messrs. H. Cannell & Sons.

Begonia (single) The Lady, from Messrs. H. Cannell & Sons.

Canna Admiral Courbet, from Messrs. H. Cannell & Sons.

Canna Madame Just, from Messrs. H. Cannell & Sons.

Canna Francesque Morel, from Messrs. H. Cannell & Sons.

Canna Francesque Morel, from Mr. T. S. Ware.

Dahlia (single) Victoria, from Messrs. Cheal & Son.

Dahlia (single) Duchess of Albany, from Messrs. Cheal & Son.

Adiantum versailleense, from Mr. B. S. Williams.

Dahlia (*Cactus*) Beauty of Brentwood, from Mr. J. T. West.

Odontoglossum Karwinski, from W. Vanner, Esq.

Campanula isophylla alba, from Mr. T. S. Ware.

BOTANICAL CERTIFICATES.

Disa lacera, from A. H. Smee, Esq.

Trichocentrum Ella, from Mr. G. T. White.

MEDALS.

Silver-gilt Banksian.—To Mr. B. S. Williams, for group of plants.

Silver Banksian.—To Messrs. Kelway & Son, for collection of *Gladioli*.

Bronze Banksian.—To Mr. T. S. Ware, for group of plants; to Messrs. J. Cheal & Sons, for collection of *Dahlias*; to Messrs. H. Cannell & Sons, for group of *Begonias*.

Fruit Committee.

Present:—T. Francis Rivers, Esq., in the chair; and Messrs. J. Lee, R. D. Blackmore, I. J. Saltmarsh, G. W. Cummins, J. Burnett, W. Marshall, and P. Barr.

Messrs. H. J. Veitch & Sons, Royal Exotic Nursery, Chelsea, S.W., had an interesting collection of fruits, which were some of the best varieties of Plums, such as Gisborne's, The Czar, Blue Gage, St. Etienne, Rivers' Early Prolific, Wilmot's Orleans, and Denniston's Superb, all fine examples. Of Apples, there were good clean examples of Keswick Codlin, Gladstone, Irish Peach, Red Quarrenden, Lord Suffield, and Worcester Pearmain; and also a dish of good Jargonelle Pears. A dish of handsome fruits of Peach Sea Eagle was a noteworthy object, the fruit being large and finely coloured.

A few good samples of Plums were also sent from Chiswick, the best samples being Blue Gage, July Green Gage, and Mamelonnée.

Mr. W. Roupell had a basket of some of the old Grapes rarely to be seen now-a-days, and which possess flavours of high quality. The varieties shown were the true Chasselas Musqué, Primavis Frontignan, and Purple Constantine; he also had American Grapes, which do not meet with much appreciation in this country. Duke of Buccleuch was also shown in fine condition. All had been grown in pots. A few Melons were shown, but none of particular merit. Mr. O. Thomas, Chatsworth Gardens, Chesterfield, sent a precocious Grape, about which the committee desire further evidence. Messrs. Harrison & Sons, Leicester, had Green Emperor Broad Beans, evidently a prolific variety.

General Meeting.

At a general meeting, the Rev. W. Wilks, Hon. Sec., in the chair, the following candidates were duly elected Fellows, viz.:—Miss Browning Hall, Mr. Thos. Butcher, Mr. S. C. Clay, Mr. Edwd. Cumberlege, Mr. H. M. Cumberlege, Mr. Jas. H. Forwalk, Mr. C. A. Harris, Mr. C. B. Saunders, Mrs. Spencer, Mr. A. W. Tait, Mr. H. A. Thompson, Mr. Theodore Waterhouse, Mr. John Watkins, and Mr. A. L. Wigan. Mr. R. B. Gall was elected an Associate.

Chiswick.

FRUIT AND VEGETABLE COMMITTEE.

A meeting of this committee was held on the 21st ult. at Chiswick. Present: Mr. W. Warren, in the chair; and Messrs. Howe, Cheal, Barr, Den-

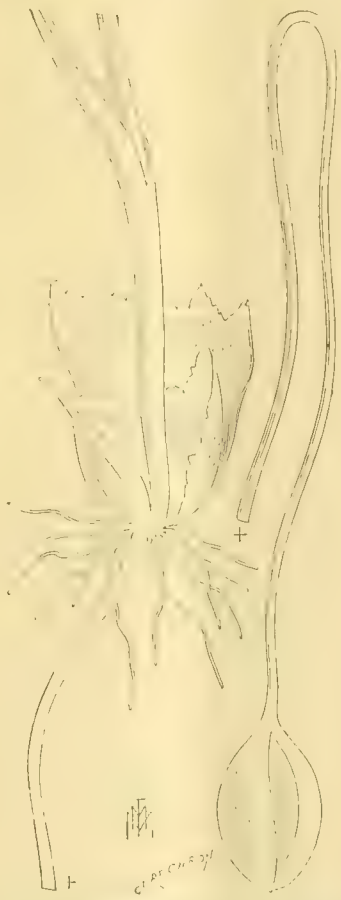


FIG. 30.—TULIP "DROPPER". THE NEW BULB IS PLACED AT THE BOTTOM OF A TUBE OR SHEATH PROLONGED DOWNWARDS.

colours not being at all unpleasing; Victoria, white, with broad dark crimson band on each side, was also a very distinct variety of great beauty, and likely to become a favourite.

Mr. T. S. Ware, Hale Farm Nurseries, Tottenham, had a collection of cut *Dahlias* and other flowers. Iceland Poppies, *Papaver bracteatum*, *Montbretia crocosmaeflora*, *M. Pottii*, *Alströméria chilensis*, *Polemonium Richardsoni*, *Lobelia splendens*, *Scabiosa caucasica*, *Lilium Batemannia*, &c., were conspicuous; also *Campanula isophylla alba*, one of the prettiest of the *Campanulas*, and eminently suited for growing on rockeries; and *Canna Francesque Morel*, deep crimson.

FIRST-CLASS CERTIFICATES.

Gladiolus Cebes, from Messrs. Kelway & Son.

Gladiolus Bullion, from Messrs. Kelway & Son.

Gladiolus Accia, from Messrs. Kelway & Son.

Gladiolus Magas, from Messrs. Kelway & Son.

Gladiolus Nicot, from Messrs. Kelway & Son.

Delphinium Horns, from Messrs. Kelway & Son.

ning, Smith, Wright, Marshall, and Cummins. The following crops on trial this season were inspected:

1. *Potatoes*.—A collection of eighty-six varieties being grown. With very few exceptions they were found to have suffered severely from disease, the early varieties more especially so. The following varieties proving to be good croppers and of fine appearance, were subjected to the test of cooking, viz., Governor (Dean), Lavington Conqueror (Lye), Epicure's Delight (Smith), Vegetarian (Dean), Renown (Webb & Son), D  butante (Ellington), Castle Morton (Collins), Nelly Blue Eyes (Dean), Basford Beauty (Howard), Bluebeard (Dean), Purple Beauty (Dean), Stirling Castle (Murdoch). None of them was considered of superior quality, being somewhat watery, a result attributable to the excessively wet season.

2. *Cabbages, Spring-sown*.—A collection of forty varieties. The following were selected as the most desirable varieties to cultivate for use at this season, viz., Early Etampes (Vilmorin), Early Paris Market (Vilmorin), Leeds Market (Rutley & Silverlock), Prince's Nonpareil, Early Dwarf York.

3. *Tomatos*.—A collection of fifty-two varieties, grown in pots. None of these were considered superior to sorts certificated in 1887, and now in general cultivation.

FLORAL COMMITTEE.

A meeting of this committee was held on the 24th ult., Mr. H. Herbst in the chair. Present: Messrs. Walker, Dean, Laing, Noble, Goldring, Masters, Lowe, Hibberd, Pollett, Bates, Dominy, Fraser.

The collections of Stocks and Asters on trial in the gardens were examined. Of the large-flowering Ten-week Stock from Messrs. Vilmorin the following colours were selected as the most distinct, and awarded three marks, viz., white, sulphur, lilac, blood-red, violet, light violet. Of the same section, from Messrs. Benary, the white, dwarf white, brick-red, and light blue, received three marks; also of the Dwarf German Chamois and those of the new Giant Perfection (Benary), sulphur-yellow and light blue, received three marks, and the dark blood-red from the Novelty Company.

Amongst the Asters the following received three marks:—Half dwarf: Multiflora, white; ditto, light yellow (Vilmorin); Globe Paony-flowered, copper coloured, white edge (Vilmorin). Dwarf: Chrysanthemum, rose (Vilmorin); and ditto, scarlet-red (Vilmorin); Dwarf Queen, crimson (Benary); Dwarf Queen, white (Benary); Mignon (Benary). Pyramidal: Hedgehog or Needle, dark crimson (Benary); large flowered rose, dark scarlet (Benary); Triumph (Novelty Company). The following assortments of various colours from Benary were commended, viz., double dwarf, early flowering, fourteen vars.; dwarf bouquet flowered (Boltzes), eight vars.; dwarf Chrysanthemum flowered, ten vars.; dwarf pyramidal flowered, twelve vars. The later varieties will be further examined.

STOCKS AT CHISWICK.

Mr. Barron maintains the practical and useful work he does at the Chiswick Gardens of the Royal Horticultural Society by this season carrying out a very successful and extensive trial of Ten-week Stocks. No annuals are more grown, probably, than the German Stock; they are so floriferous, so bright, and varied in colour, so fragrant, and so easily managed, that it is not to be wondered at the popular Stock Gillyflower maintains its ascendancy in the flower garden. And so great has been the improvement in types and varieties during the past few years that they are even more attractive and useful as decorative agents than they were a few years ago.

About four distinct types may be found in the trial at Chiswick, viz., the dwarf Ten-week, the dwarf pyramidal large-flowering Ten-week, the large-flowering Ten-week, and the Giant Perfection. The finer types have, no doubt, been obtained by means of selection, and by possessing varying characteristics they can be used for different purposes by the gardener, according as his taste or humour may incline him.

The Stocks tried comprised those put into circulation by Messrs. Vilmorin Andrieux & Co., of Paris, and Mr. Ernest Benary, of Erfurt. Of the large-flowering type of Vilmorin & Co. three marks, which are equivalent to a Certificate of Merit, were given to the following colours:—White, yellow, lilac, blood-red, purple, and light violet—all distinct and decided colours. Of the large-flowering type of Ernest Benary—and the high quality of both strains appeared to be identical—the following were selected for three

marks:—Two white, one dwarf and one taller; Chamois was fawn, purple, and ash-grey. Of all the types of Stock this appears to be the most useful, and in each case the percentage of double flowers was very large. There are other colours, all with good double flowers—too many colours, indeed, and combinations of colours; but it appears to please the Continental growers to select as many as possible, probably to make up bulky collections. Benary's type of large flowering dwarf pyramidal is of a more erect habit of growth, and not so branching. The only one of this type selected for three marks was a very fine white and a dark scarlet or crimson, growing to a height of 15 inches, very fine and showy. Of Benary's type of dwarf Ten-week, a very useful and compact-habited Stock, suitable for beds or massing, the following three varieties were awarded three marks:—Lilac-rose, violet, and yellow.

The finest, tallest growing, and most showy type of Stocks is that known as the Giant Perfection; and especially is this adapted for exhibition purposes where bold spikes are required; the general height may be stated at 18 inches. Probably it was owing to occupying a more favourable position, but Benary's strain appeared to be rather finer in development than Vilmorin's; still there was little to choose between them in point of quality. The following varieties from Mr. Ernest Benary received three marks:—Yellow, blush, and light blue.

It is pleasing to record the advance made in the yellow Stocks, as the shades are being deepened, and the green is giving place to a truer tint of yellow. The Wallflower-leaved Stocks are quite a distinct race, but with very few exceptions they lack robustness of character, and are therefore not so popular as the woolly-leaved strains.

A rich crimson Ten-week Stock, named Victoria, sent by the Novelty and Specialty Company, Newton-le-Willows, was also awarded three marks. It is a charming variety for bedding or pot culture. R. D.

TROWBRIDGE HORTICULTURAL.

AUGUST 22.—This busy Wiltshire town fully maintained its old prestige by holding a capital exhibition on the above date: and by the townspeople coming out very strong in the way of decoration. The railway station was very gay indeed, and as the weather was fine, the effect was good throughout. The show took place as usual in the field adjoining the railway station, and was largely attended.

Plants, Stove and Greenhouse.—In the leading class for nine specimens, Mr. G. Tucker, gr. to Major W. P. Clarke, Trowbridge, took the 1st prize with a good fresh lot, his leading plants being *Statice profusa*, *Stephanotis floribunda*, *Dipladenia amabilis*, *D. Brearleyana*, finely bloomed; *Lapageria alba*, and *Allamanda Hendersoni*; 2nd, Mr. J. Matthews, gr. to W. R. Brown, Esq., J.P., Trowbridge, his best specimens being *Bougainvillea glabra*, *Erica Maroccaniana*, *E. Macnabiana*, *E. ampullacea*, and *Rondeletia speciosa major*.

In the amateur class for six plants, Mr. H. Pocock, gr. to J. P. Haden, Esq., Trowbridge, had very good specimens of *Oncidium flexuosum*, *Dipladenia amabilis*, *D. Brearleyana*, *Stephanotis floribunda*, and *Allamanda nobilis*; 2nd, Mr. G. Tucker. Mr. J. Matthews, came in 1st with the best three.

The best new or rare plant was shown by Mr. J. Hiscocks, gr. to E. B. Rodway, Trowbridge, who had a good piece of *Anthurium Van Houttei*; Mr. J. F. Mould being 2nd with *Impatiens Hawkeri*.

Mr. Tucker had the best six plants of *Achimenes*. Some very good plants of *Gloxinias* were shown by Mr. C. Richmond, gr. to G. L. Palmer, Esq., Trowbridge, and Captain Tucker.

Tuberous-rooted *Begonias*, both double and single, shown in sixes, made an excellent feature, Mr. G. L. Palmer being 1st in both classes.

Mr. G. Pyner, gr. to Mrs. Goldsmith, Trowbridge, was the only exhibitor of four *Orchids*, having well-grown and bloomed pieces of *Cattleya Loddigesii*, *C. Eldorado*, *Odontoglossum citrosum*, and *Cypripedium Stonei*.

Mr. J. F. Mould had the best six *Heaths*.

Fuchsias.—These, always such a fine feature at Trowbridge, though remarkably well shown, were not yet up to their usual average, it being the practice of the growers to finish off their plants in the open air, they showed the effects of sunless days and cold nights. Mr. G. Tucker, who is one of the leading Wiltshire growers, came 1st, with very good plants of the following six varieties—Charming, the Hon. Mrs. Hay, Thomas King, and Dell's Favourite, dark varieties; and Harriet Lye and Arabella, light

varieties. 2nd, Mr. H. Pocock. Mr. Matthews had the best four varieties, having very good plants of the Hon. Mrs. Hay, Bountiful, Rose of Castille, and a seedling; 2nd, Mr. Tucker, with Charming, Thomas King, Mrs. Rundle, an excellent exhibition and decorative variety, and Bountiful.

In the cottagers' division could be seen specimen *Fuchsias* much superior to what are generally seen at horticultural exhibitions.

Miscellaneous Flowering Plants.—Among these were zonal *Pelargoniums*, *Petunias* trained to large oval wire trellises and finely bloomed, and *Verbenas* the same. Balsams and Cockscombs were also good for the season, and all furnished good and pleasing patches of colour.

Foliage Plants.—The best lot of nine came from Colonel Pepper, who had the following *Crotons* in good character:—Weissmanni, Queen Victoria, Countess, and Johannis, also *Kentia australis*, *K. Fosteriana*, and *Latania borbonica*. *Caladiums* were a good feature, the plants being well grown and finely marked. *Coleus* were a very good feature also, strongly grown plants having handsomely variegated foliage. Messrs. Matthews and Pocock were severally 1st and 2nd in both the last mentioned classes.

Ferns.—These are always well shown at Trowbridge, although fifteen specimens of *Ferns* and mosses are required, and good-sized well-developed plants are always to be seen. Mr. Tucker came in 1st, with a very good, even, varied, and well-grown collection; Mr. J. Coke, gr. to A. P. Stancomb, Esq., Trowbridge; and Mr. H. Pocock, being equal 2nd. That handsome Silver Fern, *Gymnogramma peruviana argyrophylla* is always a good feature in the Trowbridge collections.

Cut Flowers.—These are always a prime feature at Trowbridge, and, notwithstanding the character of the season, they were generally in good form. *Roses* were numerous, and very good; the best twelve varieties, three blooms of each, came from Mr. J. Mattock, nurseryman, Headington, Oxford, who had excellent blooms of Mdle. Marie Verdier, Souvenir d'Elise, Marie Baumann, Marie Van Houtte, Souvenir d'un Ami, Alfred Colomb, Madame Lambard, Devonensis, Lady Sheffield, Rubens, Dupuy Jamain, and Catherine Mermet, the Tea-scented varieties being remarkably fine. 2nd, Messrs. Keynes, Williams & Co., nurserymen, Salisbury, who had very good blooms Ulrich Brunner, The Bride, Beauty of Waltham, Alfred Colomb, Marie Verdier, Marshall P. Wilder, and Madame Eugene Verdier.

In the class for twenty-four blooms, Dr. Budd was a remarkably good 1st, the leading flowers being Comtesse de Nadaillac, Madame Lambard, A. K. Williams, Mrs. John Laing, Marie Baumann, Catherine Mermet, Souvenir d'Alphonse Lavall  , Innocenta Pirola, Fisher Holmes, Alfred Colomb, &c.

In the amateur division, Dr. Budd was 1st with twelve varieties, three blooms of each, and also with twelve single blooms. Mr. Humphries also staged a box of blooms of *Cactus* and decorative *Dahlias*, having in good character Juarez, Charming Bride, Mrs. Hawkins, Empress of India, one of the most distinct and best; F. C. Henley, Constance, William Pearce, Lady Kerrison, &c. A pretty rosy-pink seedling is of a promising character.

Miscellaneous Cut Flowers.—Hollyhocks were fairly good; *Gladioli* not up to the usual mark, both showing the hostile character of the season. *Pansies* were as good as could be expected at this late season. French and German *Asters* were very good, but not so fully developed as one is accustomed to see them the third week in August. *Carnations*, *Picotees*, *Clematis*, and *Verbenas* were numerous and generally of good character. Zonal *Pelargoniums*, in bunches of five trusses, were very fine indeed, and made a great display. Collections of hardy annuals, shown in twelves, were remarkably good, and served the useful purpose of showing what fine things can be grown under this heading.

Table Decorations, Bouquets, &c.—The former were very good, arranged in one class with garden, and the other with wild flowers. Bouquets, wreaths, and buttonholes were also good. Some charming collections of wild flowers grown within 12 miles of Trowbridge were also staged.

Dahlias.—The best stand of twenty-four show varieties came from Messrs. Keynes, Williams & Co., who had fine blooms of King of Crimson, J. T. West, Henry Keith, Hon. Mr. P. Wyndham, William Rawlings, Royal Queen, James Service, Colonelist, J. N. Keynes, Mrs. Langtry, Henry Walton, Harrison Weir, Mrs. Gladstone, George Dickson, Herbert Turner, Mrs. Shirley Hibberd, Joseph Ashby, and

seedlings. The best twelve varieties came from Mr. Sidney Cooper, Chippingham.

Messrs. Keynes & Co. had the best twelve fancy Dahlias—a very good stand also—the leading varieties being Prince Henry, Rev. J. B. M. Camm, Pelican, Peacock, Mrs. Saunders, Rebecca, Gaiety, Chorister, a sport from Gaiety, yellow, tipped with white; Frederick Smith, and seedlings.

Single Dahlias were well shown, Mr. A. A. Walters, nurseryman, Bath, being 1st, with a very fine lot, showing one bloom only of each.

Pompon Dahlias, in bunches of four flowers, were a capital feature, Messrs. Keynes, Williams & Co. being 1st, with some remarkably good varieties, consisting of Janet, Gem, Golden Gem, Darkness, Lady Blanche, Favourite, White Aster, Grace, Lelia, and seedlings.

Fruit.—As is general, this season's collections of fruit scarcely come up to their usual extent and quality. The only collection of varieties on this occasion came from Mr. A. Miller, gr. to Walter H. Long, Esq., M.P., Rood Ashton, Trowbridge, a very good lot indeed, consisting of Alicante and Foster's Seedling Grapes, Barrington Peaches, Violet Hâtive and Stanwick Elruge Nectarines, Moor Park Apricots, Brown Turkey Figs, Melons, &c.; Mr. W. Iggulden, gr. to the Earl of Cork, Marston House, Frome, had the best six dishes, consisting of Black Hamburgh and Foster's Seedling Grapes, Grosse Mignonne Peaches, Moor Park Apricot, Pine-apple Nectarine, and a Melon. The best two bunches of black Grapes were highly finished, viz., Black Hamburgh from Mr. J. Gibson, gr. to Earl Cowley, Chippingham; Mr. A. Miller being 2nd with the same variety, also in excellent character. The best productions of white, Muscats excluded, were Buckland Sweetwater, from Mr. Iggulden; Mr. J. Attwell, gr. to T. B. Brain, Esq., Bristol, being 2nd with the same. Messrs. Gibson and Ashwell were severally 1st and 2nd with Black Muscats, showing good Madresfield Court. Mr. Iggulden was 1st with White Muscats. The best Peaches were Royal George and Grosse Mignonne; the best Nectarines were Pine-apple and Elruge. Melons were fairly plentiful. The best dessert Apple was Beauty of Bath; the best culinary, Lord Suffield, shown very fine indeed. The best dessert Pears were Doyenné d'Ete and Jargonelle. Miss Lily Durbin, and Mr. Hoskings, of Clifton, were severally 1st and 2nd, with a centrepiece arranged with fruit and flowers.

Vegetables.—These were numerous and remarkably fine. This remark applies to those produced by cottagers as well as in the open class. Mr. G. Garaway, of Bristol, had the best collection of nine varieties. Potatoes were a great feature, and as they are shown with a much larger number of tubers composing a dish than is usual, they make quite an imposing display. Tomatoes were very fine, the Perfection type being to the fore.

WILTS HORTICULTURAL.

SALISBURY, AUGUST 23.—The annual summer show was held in the Palace grounds, and was in every way a success, a grand all-round display of plants, cut flowers, fruits, and vegetables being got together.

For twelve stove and greenhouse plants, distinct, six foliage and six flowering, £15, £10, and £5 were offered as prizes. Mr. G. Lock, gr. to W. B. Cleam, Esq., Crediton, secured the premier position, with magnificent specimens, the most remarkable among them being Erica Eweriana, 5 feet over; E. æmula, Clerodendron Balfouri, Bougainvillea glabra, Encephalartos villosus ampliatus, Latania borbonica, very large, and splendidly coloured Crotons. Mr. J. Cypher, Cheltenham, was 2nd, his plants being smaller, but very good and even. Bougainvillea glabra and Ixora Fraseri, were the best.

For a group of plants arranged for effect in semicircle 12 feet in diameter, Mr. Lock was 1st, with a very light and pretty arrangement, the materials being well chosen, and put together in finished style; Mr. Wills being 2nd with a bright group. Mr. Lock was again successful for six stove and greenhouse plants in bloom, with medium-sized, well-flowered specimens of Dipladenia amabilis, Erica Fairieana, E. Aitoniana, Ixora Duffii, Allamanda Hendersoni, and Phenocoma prolifera Barnesi; 2nd, Mr. Wills, Eucharis amazonica and Clerodendron Balfouri being very fine in his lot.

Exotic Ferns were shown in capital condition. In the class for six, distinct, Mr. Wills was 1st, with large healthy specimens.

Mr. H. W. Ward, gr. to the Earl of Radnor, Longford Castle, Salisbury, had the six best Begonias, with well-flowered plants.

Fuchsias were represented by well-flowered plants of medium size, Mr. Wills winning 1st honours with such well-known varieties as Charming and Beautiful.

In the gardener's class for a group of plants, arranged in a semicircle, 10 feet in diameter, Mr. Lock was again to the fore with a very effective display, thereby winning the £5 Cup or money given by the Messrs. Keynes, Williams & Co. Seven lots were put up, all of which were wonderfully well done.

Two other classes were provided for groups, the prizes to be competed for by amateurs living within a radius of 6 miles of Salisbury. So well were they put up that they deserve special mention. Mr. L. Browne was 1st (in the class where a semicircle 10 feet in diameter had to be covered), with a very light and pleasing combination; 2nd, Dr. W. Coates, whose background of Palms was very effective. Mr. Gregory won the 1st prize for a group of the same shape but 2 feet less in diameter.

Fruit was largely and well shown, with the exception of hardy kinds, the collections, black Grapes and Peaches, being especially good. For eight dishes of fruit, Mr. Ward secured the premier position, showing compact bunches of Madresfield Court, large in berry and splendidly coloured; Muscat of Alexandria, large in bunch and of good colour; a large scarlet Invincible Melon, good Smooth Cayenne Pine and Pine-apple Nectarines, Negro Largo Figs, Goshawk Peach, and Moor Park Apricots. Mr. Evans, gr. to Lady Louisa Ashburton, Melchet Court, Romsey, Hants, was a close 2nd, his best dishes being well coloured Black Hamburgh Grapes, grand Brunswick Figs, good Barrington Peaches, and Moor Park Apricots, and William Tillery Melon; Mr. A. Miller, gr. to H. W. Long, Esq., M.P., Rood Ashton Park, Trowbridge, was a good 3rd, having a splendid Smooth Cayenne Pine, but not quite ripe, and good Peaches, Nectarines, Figs, and Melons. For one Pine, Mr. Lock was 1st, with a large well ripened Smooth Cayenne; Mr. Ward being a close 2nd with the same variety.

Mr. J. Northeast, gr. to Mrs. Torrence, Norton House, Warminster, was 1st for three bunches of Muscat of Alexandria Grapes, with large well coloured bunches.

The next class, for three bunches of Black Hamburghs, was a very strong one, Mr. Chalk, gr. to G. Read, Esq., Westwood, Salisbury, taking 1st, with very large and beautifully coloured examples; Mr. Ward following with smaller, but equally well coloured bunches; the latter also led for any other white, with good Buckland Sweetwater, and for any other black, Mr. Ward again secured the post of honour with Gros Maroc.

For the best flavoured Melon, Mr. Neville was 1st, with Sutton's Imperial Green-flesh; and Mr. Evans was 2nd, with Read's Scarlet-flesh.

Mr. Englefield, Tedworth House, Marlborough, was easily 1st for a single dish of Peaches, showing Walbourn Admirable, very large and highly coloured; Mr. Rudd was 2nd, with Barrington. The prizes for Nectarines were awarded to Mr. W. Browning, gr. to Sir Talbot Baker, Bart., Blandford, and Mr. Ward in the order named. Mr. Browning was also 1st for Apricots, with very fine fruits, of Moor Park, and for six dishes of Apples; and Mr. Englefield led for Plums; and Mr. F. Smith for four dishes of Pears.

Vegetables.—Fine collections were put up, the 1st and 2nd prize ones being very close in point of merit. Mr. Wilkins was placed 1st—he put up good dishes of Rousham Park Onion, Standard Bearer Celery, Advance Cauliflower, Giant White Beans, and dark-red Beet; Mr. Haines following closely, showed very fine Reading Perfection Tomatos, Anglo-Spanish Onion, Satisfaction Potatoes, and Jubilee Beans.

Cut Flowers were not numerous, but in some cases were well shown. Mr. Campbell, gr. to Dr. S. P. Budd, Bath, was 1st for twenty-four Roses; Dr. D. Seaton, Bitterne, Hants, 1st for twelve; Mr. Harkins, Salisbury, occupied a like position for single and pompon Dahlias; Mr. N. Gilbert, Bishop's Waltham was first for eighteen Carnations or Picotees. The same exhibitor showed flowers of a seedling border Carnation named Edwin Molyneux, which was a very promising variety; Mr. Chard, Stoke Newington, was 1st for a dressed flower vase, and also for two bouquets, all of them being set up in his usual style.

Miscellaneous Exhibits.—A goodly number of exhibits were put up, not for competition. Messrs. Keynes, Williams & Co. arranged groups of Palms

and Lilies at one end of the large tent, and they also put up grand stands of Roses and Dahlias. The many beautiful blooms among the Cactus and Dahlias came in for a large share of attention from the visitors. Mr. R. Davis, of the Yeovil Nurseries, contributed a bright and imposing stand of Begonias among the doubles. Mr. B. Latham, High Street, Shirley, Southampton, showed a good collection of herbaceous cut flowers and seedling Petunias in pots; and Mr. Brittan, Salisbury, a tastefully arranged exhibit of miscellaneous plants and cut flowers, all of which commanded a good deal of attention.

SEVENOAKS HORTICULTURAL.

AUGUST 22.—A capital exhibition took place in Montreuil Park, the seat of the Right. Hon. Earl Amherst. The flowering groups set up for effect—always a feature at this show—were exceptionally good, as were the table decorations. Stove and greenhouse plants were well shown by Mr. Gibson, gr. to T. F. Burnaby Atkins, Esq., Halsted Place—indeed, his specimen plant of Dipladenia was one of the best that has ever been shown, having 47 trusses of bloom, and no less a number than 587 blooms had already been picked off. Mr. Gibson said that it commenced to flower on May 9 last.

Ornamental foliage plants and exotic Ferns were well shown by Mr. Goodman, gr. to Mrs. Crawshaw, Bradbourne Hall; and Mr. A. Hutton was well to the front with Caladiums and table decorations.

Groups not for competition were shown by Messrs. Laing & Sons (Forest Hill), Cutbush (Highgate), Webber (Tonbridge), Cheal & Sons (Crawley), Seale (Sevenoaks), and Edmonds (Westerham).

Vegetables were generally good, and the competition keen, but the fruit was not quite up to the quality of some previous years, if exception be made to the Grapes shown by Mr. T. Osman, of Chertsey, which were very fine examples.

ROYAL HORTICULTURAL OF IRELAND.

AUGUST 23.—The autumn show was held under favourable auspices. In many classes the number of exhibits was limited, but of high merit; splendid Grapes were shown from the Earls of Wicklow and Clancarty, who took 1st and 2nd prizes in the order named for three varieties, two bunches of each, finely finished and coloured.

The excellent stands of Roses and Dahlias from Messrs. Alex. Dickson & Sons, of Newtownards and Belfast, were, however, the special feature of the show. They included, first, a stand of forty-eight, all different, in grand condition, and for which the Society's 1st prize in the nurserymen's class was awarded. In this stand were splendid blooms of Messrs. Dicksons' new certificated hybrid pedigree varieties, such as Earl Dufferin, dark velvety-red; Lady Helen Stewart, crimson-scarlet; Lady A. Hill, cerise-pink; and Miss Jennie Dickson, silvery-rose. In this stand also were effective blooms of Her Majesty, Mrs. John Laing, Chas. Lefebvre, and Duc de Rohan. They had also awarded to them the Society's Silver Medal for two other stands of forty-eight Roses—not for competition. Another of Messrs. Dicksons' specialties, and for which they had similar honours, were stands of forty-eight show and fancy Dahlias in fine condition. Mr. McCormick, Swords, had 1st in amateurs' class of thirty-six Dahlias.

ROYAL HORTICULTURAL OF ABERDEEN.

AUGUST 23, 24, AND 25.—The floral fête, held under the auspices of the above Society, was held in the Duthie Public Park, Aberdeen, on the above dates, in fine weather. The entries numbered 1561 as against 1011 last year, the details of this year's being—For pot plants, 287; cut flowers, 486; fruit, 263; and vegetables, 525. The pot plants, cut flowers, and stove and greenhouse plants, Potatoes, and fruit were shown in the large marquee situated at the east side of the grounds, and considering the backward nature of the season the display was really an excellent one. The most striking feature in it was the stand in the centre, near the entrance, of pot plants, which included very fine Fuchsias, Begonias, Liliiums, and Pelargoniums; and a remarkable specimen of the British Fern, *curtum cristatum*.

Mr. Alexander Grigor, gr. to Mr. A. O. Gill, of Fairfield, Aberdeen, had a fine display. A little further on was a fine collection of horticultural produce by Mr. John Proctor, gr. to Mr. Henderson, Lord Provost of Aberdeen. It was a mixed collection, and included Palms, Crotons (fine in colour), and Orchids in bloom. There was also a pretty *Clanthus Dampieri*, one of the best specimens that could be produced. In Mr. Proctor's collection of six stove or greenhouse plants were a *Clerodendron Balfouriana*, particularly well flowered; a beautiful *Eucharis amazonica*, and a fine Palm. A table of flowers by Messrs. Smith & Son, seedsmen, Aberdeen, was a great attraction. It contained a selection of herbaceous flowers, also Gladioli, Roses, and Carnations, besides many choice and valuable stove and greenhouse plants.

Amateurs.—In the class for the cut blooms were very fair considering the conditions under which they were raised and the backward season. Dahlias were poor and nothing like what is generally found at this show; the Stocks, Pansies, and Roses were, however, very good, and the Carnations were well marked though scarcely so good as they would have been with finer weather.

Nurserymen.—In this division the judges had some difficulty in deciding who had the best selection of blooms of Tea Roses, Messrs. D. & W. Croll, Dundee, and Messrs. Cocker & Son, Aberdeen, being the only competitors. Both had good displays, but the 1st prize fell to the latter. Among his flowers Grace Darling and Vicomtesse Folstone were particularly noticeable. Messrs. Croll's included fine blooms of Madame Lambard, Rubens, and The Bride. Messrs. Cocker also took 1st prize for H.P.'s; the blooms, however, were generally over-blown, here again, Messrs. Croll came in 2nd.

The Dahlias were a fair display in this division, and Messrs. Croll, Dundee, took 1st place.

There was a very fair display of Marigolds (varied), Asters, and Stocks, the latter being very good. Amongst the prize takers for French Marigolds and cut Roses, Mr. W. Murdock, whose exhibits were raised within the City Hospital grounds, secured a creditable position, being 1st and 3rd in each. Of the cut flowers of herbaceous plants there was a very fine show.

The table plants in pots, the 1st prize for which went to Mr. Malcolm, Montrose, were well coloured, strong and healthy. There were also, finely-bloomed specimens of Petunias, shown by Mr. Grigor, Fairfield; and Begonias by Mr. R. Hall Belhelvia.

In addition to the plants, flowers, and fruit for competition were two stands near the entrance by Messrs. B. Reid & Co., Aberdeen; and Messrs. Cocker for exhibition. On these were artistically displayed branches of Tea Roses, herbaceous plants, Pinks, and fine healthy examples of various stove and greenhouse foliage and blooming plants.

Fruit.—The display of fruit was a fine one. Red Currants and Strawberries were particularly good. Grapes were not so good generally, but the collection sent by Mr. W. H. Lumsden, of Balmedie, was very fine, the largest bunch weighing 10½ lb.

The fête, as stated above, was favoured with beautiful weather, and in the evenings large crowds visited the grounds, the total proceeds amounting to £262 5s. 6d.

THE WEATHER.

THE PAST WEEK.

The following summary record of the weather for the week ending Aug. 27, is furnished from the Meteorological Office:—

"The weather has been unsettled and rainy over the western, north-western, and extreme northern parts of the kingdom, but elsewhere the conditions have been fairer, and the rainfall less heavy and frequent. Some thunder and lightning were experienced in many parts of Great Britain, as well as at a few of the Irish stations.

"The temperature has been a little above the mean in Ireland, Scotland, and the north-east of England, and about equal to it in 'England, S.W.' and the 'Channel Islands,' but in the other English districts a slight deficit is shown. The height of the maxima, which were recorded either on the 24th or 25th, varied from 68° in 'England, N.W.' to 74° in 'Scotland, N.' and 75° in 'England, E.' and 'England, S.' The lowest of the minima, which were registered on the 23rd in Scotland, and on irregular dates over England and Ireland, varied

from 45° in 'England, N.W.,' 'Ireland, S.' and at some of the Scotch stations, to 50° in 'England, S.W.' and to 56° in the 'Channel Islands.'

"The rainfall has been rather more than the mean over Ireland and in the north of Scotland, but less in most other districts, especially over the south of England and in the 'Channel Islands.'

"Bright sunshine shows a decided decrease over Scotland, but in most parts of England and in the south of Ireland it has been more prevalent than it was last week. The percentage of the possible amount of duration ranged from 24 to 29 in Scotland, from 34 to 47 in Ireland, and from 27 to 41 over England. In the 'Channel Islands' the percentage was 47."

[Accumulated temperature indicates the combined amount and duration of the excess or defect of temperature above or below 32° F. for the period named, and is expressed in Day-degrees — a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	Above or below the Mean for the week ending Aug. 27.	TEMPERATURE.				
		ACCUMULATED.				
		Above 42° for the Week.	Below 42° for the Week.	Above 42° difference from Mean since Jan. 3, 1888.	Below 42° difference from Mean since Jan. 3, 1888.	
Principal Wheat-producing Districts.		Day-deg.	Day-deg.	Day-deg.	Day-deg.	
0. SCOTLAND, N. ...	1 above	97	0	— 214	+ 201	
1. SCOTLAND, E. ...	2 above	108	0	— 383	+ 157	
2. ENGLAND, N.E. ...	2 above	116	0	— 406	+ 73	
3. ENGLAND, E. ...	1 below	125	0	— 323	+ 154	
4. MIDLAND COS. ...	1 below	118	0	— 389	+ 150	
5. ENGLAND, S. ...	1 below	127	0	— 421	+ 204	
Principal Grazing, &c., Districts.						
6. SCOTLAND, W. ...	2 above	113	0	— 277	+ 107	
7. ENGLAND, N.W. ...	1 below	115	0	— 313	+ 117	
8. ENGLAND, S.W. ...	0 (aver.)	120	0	— 392	+ 254	
9. IRELAND, N. ...	1 above	113	0	— 247	+ 67	
10. IRELAND, S. ...	1 above	121	0	— 226	+ 113	
— CHANNEL ISLANDS	0 (aver.)	133	0	— 308	+ 154	

DISTRICTS.	More or less than the Mean for the Week.	No. of Rainy Days since Jan. 3, 1888.	RAINFALL.		BRIGHT SUNSHINE.	
			Total Fall since Jan. 3, 1888.	Percentage of possible Duration for the Week.	Total Fall since Jan. 3, 1888.	Percentage of possible Duration for the Week.
	Tenths of Inch.		Ins.			
Principal Wheat-producing Districts.						
0. SCOTLAND, N. ...	3 more	153	24.1	29	30	
1. SCOTLAND, E. ...	1 less	136	19.8	24	30	
2. ENGLAND, N.E. ...	2 less	126	17.9	28	26	
3. ENGLAND, E. ...	0 (aver.)	128	16.8	32	28	
4. MIDLAND COS. ...	1 less	118	16.5	31	27	
5. ENGLAND, S. ...	3 less	119	17.7	34	28	
Principal Grazing, &c., Districts.						
6. SCOTLAND, W. ...	3 less	129	27.7	26	2	
7. ENGLAND, N.W. ...	2 more	129	19.9	27	29	
8. ENGLAND, S.W. ...	0 (aver.)	134	23.1	41	34	
9. IRELAND, N. ...	4 more	135	24.5	54	28	
10. IRELAND, S. ...	2 less	123	24.9	47	33	
— CHANNEL ISLANDS	3 less	147	19.8	47	39	

MEAN TEMPERATURE OBSERVED AT CHISWICK DURING THE WEEK ENDING SEPT. 8. (AVERAGE OF FORTY-FOUR YEARS.)

Sept. 2	59°·8	Sept. 6	59°·3
" 3	59°·6	" 7	59°·1
" 4	59°·5	" 8	59°·0
" 5	59°·4	Mean for the week ...	59°·4

Obituary

PHILIP HENRY GOSSE.—We regret to announce the death of Mr. Philip Henry Gosse, F.R.S., which occurred at his residence, St. Marychurch, Torquay, on the 23rd ult. This distinguished zoologist was born at Worcester in 1810. He went out in a mercantile capacity to Newfoundland, where he occupied his leisure in collecting insects. After a residence of eight years in Newfoundland, Mr. Gosse visited Lower Canada, where for three years he specially devoted himself to the study of zoology and entomology. He afterwards travelled through the United States, and resided for about a year in Alabama, making a large collection of drawings of insects, especially the fine lepidoptera of that region. After his return to England in 1839, Mr. Gosse published a general synopsis of his investigations, under the title of *The Canadian Naturalist* (1840). In 1844 he visited Jamaica, and spent eighteen months in the study of zoology, and issued on his return the result of his researches in *The Birds of Jamaica*, and *A Naturalist's Sojourn in Jamaica*. During the next few years he devoted himself especially to the microscopic study of the British rotifers, and took a prominent part in the formation of public and private collections of marine animals. Mr. Gosse was for many years a correspondent of this journal, and took especial interest in Orchids, of which he grew a collection. He leaves an only son, Mr. Edmund Gosse, the well-known literary critic.

VARIORUM.

WOUNDS OF FRUIT TREES.—Sometimes a large limb of a tree has been broken, and must be sawn off, or severe pruning seems called for through other causes. In such cases it is important that the wound occasioned by the knife shall be protected from the damaging effects of the weather by the application of some protecting or healing substance until new wood has time to form over it. Gum shellac dissolved in alcohol is generally used for this purpose; but a more effective material can be made as follows:—Melt a pound of common resin over a slow fire, adding to it meantime an ounce of beef tallow, and stir all well together; then take from the fire, and when the whole has partly cooled mix with it a teaspoonful of spirits of turpentine, and in a few minutes stir in a few ounces of 95 per cent. alcohol. Care should be taken to prevent the alcohol taking fire, and for this reason the kettle should be moved to a distance from the stove, and on no account should this mixture ever be made in the evening, when there is a danger that a lamp may be brought near it during the process. The compound should be carefully and thoroughly stirred until it becomes a homogeneous mass of the consistency of honey. Keep it for use in a large-mouthed bottle. Then in pruning trees, or whenever they have been cut in any way, coat each wound well with this preparation. It will stop the flow of sap, and hasten the complete healing of the wound. *Mildura Irrigationist.*

A TRADE CENSUS.—Mr. Myrick, at the Detroit Convention of Nurserymen, urged the preparation of a "census," or report of nursery stock, made up of reports from the different producers, which would tend to prevent over or under production in any particular line. He took the ground that growing stock should not be taxed; that there should be a comprehensive revision of fruit literature, to keep pace with the times; that great attention should be paid to nomenclature, and that proper names should be selected for new fruits; that a standing committee to co-operate with the Department of Agriculture and the State experimental stations should be appointed; that short practical papers should be made a leading feature of all meetings; that business and Association matters should not be allowed to conflict, and that to this end the exhibition hall and the meeting hall should be kept separate, and that both should not be open at the same time.

NOTICES TO CORRESPONDENTS.

ABIES MAGNIFICA: *S. S.* What you send is undoubtedly *A. nobilis*. Thanks for the Sciadopitys.

ABIES AND PICEA: *W. J. B.* The Abies and Picea question is an old one. We follow the standard authority, Bentham and Hooker. *Plagianthus*: ask Messrs. Veitch.

ANTS IN ORCHID-HOUSES: *G.* Sprinkle their haunts with a solution of carbolic acid.

DRIED FLOWERS, &c: *T. D.* Apply to Messrs. Hooper & Co., Limited, Covent Garden, W.C.

EUCHARIS: *A. C.* It is not uncommon for two flowers to be united.

FERN GROWING THROUGH THE HOLE OF THE POT: *E. C.* There was nothing remarkable in the rhizome of the *Davallia* creeping through the hole at the bottom.

INSECTS: *A. B.* Your Plums are attacked by the red grubs, or larvæ, of a small blackish moth, with an eye-like spot near the tips of the fore-wings—*Tortrix* (*Carpocapsa*) *nigricana*. Shake the trees, and burn all the Plums as soon as they fall, and before the grubs escape to become chrysalids. *I. O. W.*

JUDGING AT FLOWER SHOW: *Secretary.* 1, Yes; 2, no.

NAMES OF PLANTS: *G. F. D.* 1, *Poa nemoralis*; 2, *Bromus asper*; 3, *B. giganteus*; 4, *B. tectorum*; 5, *Festuca duriuscula*, the glabrous specimen, and *F. arenaria*, the pubescent one; 6, *F. elatior*; 7, *Bromus commutatus* var.—*Sedge.* 1, *Juncus conglomeratus*; 2, *J. glaucus*; 3, *J. maritimus*.—*W. J. W., Jun.* 1, we cannot name without flowers; 2, *Gaultheria Shallon*.—*W. P. L. & S.* *Scopolendrium vulgare confertum*.—*J. Robertson.* *Gongora maculata*.—*G. W. H.* *Olearia Haastii*.—*W. F. & Sons.* *Lycaste cruenta*.—*S. C.* 1, *Ceanothus azureus*; 2, *Rhus cotinus*.—*C. W. D.* *Periploca græca*.—*H. P.* *Calycanthus occidentalis*.—*A. B.* 1, *Tussilago Farfara*; 2, *Berteroa incana*; 3, *Ballota nigra*; 4, *Erigeron*, sps.—*D. S.* *Phallus impudicus* (common Stinkhorn fungus). See Cooke's *British Fungi*.—*G. B.* 1, *Adiantum Capillus-veneris* var.; 2, *Calepellis scabra*; 3, *Pteris Adiantoides*.—*P. McD.* 1, *Cryptomeria elegans*; 2, *Abies Douglasii*; 3, *Picea excelsa*; 4, *P. Morinda*; 5, *P. Menziesii*; 6, *Tsuga japonica*; 7, one of the forms of *Pinus Laricio*; 8, not found; 9, *Ailantus glandulosa*.—*H. R. L.* *Spiræa confusa*.—*R. C. K.* 1, *Echinops sphærocephalus*; 2, *Centaurea aurea*; 3, *Eupatorium cinnabarinum*; 4, *Heuchera Richardsoni*.

PLANT INJURIOUS TO STOCK: *W. A.* Swine-cress (*Senebiera coronopus*). We do not think it likely this plant would be injurious. It is a cruciferous plant allied to Cress, Cabbage, &c.

SHOOT OF SHRUBS: *W. W.* We find on your specimen traces of the former presence of greenfly and thrips, besides plenty of actual mealy-bug; and on the *Fuchsia* some caterpillar, referred to our entomological referee.

TOMATOES DISEASED: *H. T., Llandudno.* The tomato foliage is attacked by the now too well known and widespread mould named *Cladosporium lycopersici* (see *Gardeners' Chronicle*, November 12, 1881). The disease has several times been described in this journal. It is very probable that next year's plants will become affected if grown in the same house as the present. Better destroy infected material, and clear out and thoroughly clean the house. We do not think the slight discolorations on Rose leaves are due to fungi.

CATALOGUES RECEIVED.

DICKSON, BROWN & TAIT, 43 and 45, Corporation Street, Manchester—Flowering Bulbs.

DICKSON & ROBINSON, 12, Old Millgate Manchester—Bulbous Roots.

WILLIAM BULL, 536, King's Road, Chelsea, London, S.W.—Bulbs and Tuberous-rooted Plants.

S. TAYLOR & SONS, Reading—Bulbs.

W. COTBUSH & SONS, Highgate Nurseries, London, W.—Bulbous Roots.

DICKSON & CO., 1, Waterloo Place, Edinburgh, N.B.—Flower Roots.

MUNRO & FLEMING, 33, St. Andrew Square, Edinburgh, N.B.—Dutch Flower Roots.

E. P. DIXON & SONS, 57, Queen Street, Hull—Bulbs, Strawberries, &c.

JAMES VEITCH & SONS, Royal Exotic Nursery, King's Road, Chelsea, London, S.W.—Bulbous Roots.

B. S. WILLIAMS, Victoria and Paradise Nurseries, Upper Holloway, London, N.—Bulbs, Roses, Fruit Trees.

LOUIS DE SMET, Ledeberg-lez-Gand, Belgium—Azaleas, Cacti, Orchids, &c.

LITTLE & BALLANTYNE, Carlisle—Bulbs.

HOGG & WOOD, Coldstream and Duns—Bulbs.

DICKSONS (Limited), Royal Nurseries, Chester—Bulbs.

E. WEBB & SONS, Wordsley, Stourbridge—Bulbs.

R. NEAL, Wandsworth Common, London, S.W.—Bulbs.

FISHER, SON & SIBRAY, 4, Market Street, Sheffield—Bulbs.

PAUL & SON, Old Nurseries, Cheshunt—Bulbs, Herbaceous Plants, &c.

DOBIE & MASON, 66, Deansgate, Manchester—Bulbs.

JOHN FEED & SONS, Rouppel Park Nurseries, Tulse Hill, S.W.—Bulbs.

JARMAN & CO., Chard, Somerset—Bulbs and Seeds.

W. B. HARTLAND, 24, Patrick Street, Cork, Ireland—Daffodils, Hellebores, Primroses, &c.

ALEXIS DALIÈRE, Faubourg de Bruxelles, Ghent—Azaleas, Rhododendrons, Orchids, &c.

KENT & BRYDON, Darlington—Bulbs, &c.

BROWN & WILSON, 10, Market Place, Manchester—Bulbs.

J. CARTER & CO., 237 and 238, High Holborn, London, W.C.—Bulbs.

COMMUNICATIONS RECEIVED.—Dr. King, Calcutta. —H. W. W. Sir T. L. Baden Baden. —G. W. C. —P. McD. —W. T. —S. S. —F. W. B. —A. W. T. —Oporto. —Canon E. —H. A. —J. W. —H. C. —H. M. W. —M. & T. —L. Kiennat, Zurich. —H. G. —W. H. —G. F. D. —W. C. —W. N. —W. R. (next week). —W. G. S. —R. W. J. D. —Bee. —B. A. —J. R. J. —C. —J. W., jun. —A. D. W. —C. C. —D. J. Y.

Correspondents sending plants or fruits to be named, or asking questions demanding time and research for their solution, must not expect to obtain an answer to their enquiries in the current week.

MARKETS.

COVENT GARDEN, August 30.

[We cannot accept any editorial responsibility for the subjoined reports, which, however, are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list, and who are responsible for the quotations. It must be remembered that these quotations represent averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the supply in the market, and they fluctuate, not only from day to day, but often several times in one day, and therefore the prices quoted as averages for the past week must not be taken as indicating the particular prices at any particular date, and still less can they be taken as guides to the prices in the coming week. ED.]

MARKET very quiet. *James Webber, Wholesale Apple Market.*

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
<i>Aralia Sieboldi</i> , doz.	6 0-18 0	<i>Foliage plants, vari-</i>	
<i>Asters</i> , per dozen	3 0-6 0	<i>ous</i> , each	2 0-10 0
<i>Balsams</i> , per doz.	2 0-4 0	<i>Ficus elastica</i> , each	1 6-7 0
<i>Bouvardias</i> , per dozen	9 0-12 0	<i>Fuchsias</i> , doz.	3 0-6 0
<i>Calceolarias</i> , dozen	3 0-6 0	<i>Heliotropes</i> , dozen	3 0-6 0
<i>Carnations</i> , per doz.	6 0-18 0	<i>Hydrangeas</i> , dozen	9 0-18 0
<i>Chrysanthemums</i> , doz.	4 0-9 0	<i>Liliums</i> , var., doz.	18 0-30 0
<i>Cockscombs</i> , per doz.	2 6-4 0	<i>Marguerites</i> , doz.	6 0-12 0
<i>Coleus</i> , dozen	2 0-4 0	<i>Mignonette</i> , 12 pots	3 0-6 0
<i>Crassula</i> , per doz.	9 0-12 0	<i>Myrtles</i> , per dozen	6 0-12 0
<i>Cyperus</i> , per dozen	4 0-12 0	<i>Palms in var.</i> , each	2 6-21 0
<i>Drosera terminalis</i> ,		<i>Parlagoniums</i> , doz.	6 0-12 0
per dozen	30 0-60 0	—scarlet, dozen	3 0-6 0
—viridis, per doz.	12 0-24 0	<i>Rhodanthe</i> , per dozen	4 0-6 0
<i>Euonymus</i> , in var.,		<i>Scented Geranium</i> ,	
per dozen	6 0-18 0	per dozen	3 0-6 0
<i>Evergreens</i> , in var.,		<i>Solanums</i> , dozen	9 0-15 0
per dozen	6 0-24 0	<i>Verbenas</i> , per doz.	4 0-6 0
<i>Ferns</i> , in var., doz.	4 0-15 0		

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
<i>Asters</i> , 12 bunches	2 0-6 0	<i>Mignonette</i> , 12 bun.	1 0-3 0
—French, per bun.	1 0-1 6	<i>Pansies</i> , 12 bun.	1 0-2 0
<i>Bouvardias</i> , per bun.	0 6-1 0	<i>Pellargoniums</i> , 12 spr.	0 6-1 0
<i>Carnations</i> , 12 blms.	1 0-2 0	—scarlet, 12 spr.	0 2-4 0
—dozen bunches	4 0-6 0	<i>Pinks</i> , 12 bun.	3 0-6 0
<i>Chrysanthemums</i> ,		<i>Poppies</i> , 12 bun.	4 0-6 0
12 blooms	0 6-3 0	<i>Primulas</i> , double, 12	
—dozen bunches	2 0-6 0	—sprays	0 9-1 0
<i>Coriander</i> , 12 bun.	1 6-3 0	<i>Pyrethrums</i> , 12 bun.	2 0-4 0
<i>Eucharis</i> , per dozen	3 0-6 0	<i>Rhodanthe</i> , 12 bun.	4 0-6 0
<i>Forget-me-nots</i> , 12		<i>Roses</i> , Tea, per doz.	0 6-1 6
bunches	2 0-4 0	—coloured, dozen	2 0-4 0
<i>Gardenias</i> , 12 blooms	1 6-1 0	—red, per dozen	0 6-1 0
<i>Glabellus</i> , doz. sprays	0 6-1 6	—“12 bunches	2 0-6 0
<i>Heliotropes</i> , 12 spr.	0 6-1 0	—Safrano, dozen	0 6-0 9
<i>Lavender</i> , 12 bun.	3 0-1 6	<i>Stephanotis</i> , 12 spr.	2 0-4 0
<i>Lilium longifolium</i> ,		<i>Sweet Peas</i> , 12 bun.	2 0-4 0
12 blooms	3 0-5 0	<i>Sweet Sultan</i> , 12 bun.	2 0-4 0
—lanceifolium, 12 bl.	1 0-3 0	<i>Tuberose</i> , 12 blms.	0 4-0 9
<i>Marguerites</i> , 12 bun.	3 0-6 0		

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
<i>Apples</i> , half-sieve	2 0-4 6	<i>Peaches</i> , dozen	2 0-8 0
<i>Filberts</i> , 100 lb.	75 0-...	<i>Pine-apples</i> , Eng., lb.	2 0-3 0
<i>Grapes</i> , per lb.	0 9-2 0	<i>Plums</i> , half-sieve	3 6-5 0
<i>Lemons</i> , per case	12 0-21 0	—St. Michael, each	2 0-5 0
<i>Melons</i> , each	1 0-3 0		

VEGETABLES.—AVERAGE RETAIL PRICES.

	s. d. s. d.		s. d. s. d.
<i>Artichokes</i> , p. doz.	4 0-...	<i>Mustard and Cress</i> ,	
<i>Beans</i> , Kidney, lb.	0 4-...	punnet	0 4-...
<i>Beet</i> , red, per dozen	1 0-2 0	<i>Onions</i> , per bunch	0 5-...
<i>Carrots</i> , per bunch	0 6-...	<i>Parsley</i> , per bunch	0 4-...
<i>Cauliflowers</i> , each	0 4-...	<i>Potatoes</i> , per cwt.	4 0-5 0
<i>Celery</i> , per bundle	1 6-2 6	“kidney, per cwt.	4 0-5 0
<i>Cucumbers</i> , each	0 6-0 9	<i>Shallots</i> , per lb.	0 6-...
<i>Endive</i> , per dozen	3 0-...	<i>Spinach</i> , per bushel	3 0-...
<i>Green Mint</i> , bunch	0 4-...	<i>Tomatoes</i> , per lb.	0 9-1 0
<i>Herbs</i> , per bunch	0 4-...	<i>Turnips</i> , per bunch,	
<i>Leeks</i> , per bunch	0 6-...	new	0 5-...
<i>Lettuce</i> , per dozen	1 6-...	<i>Vegt. Marrows</i> , each	0 2-...
<i>Mushrooms</i> , punnet	1 0-2 0		

POTATOS.—Jersey trade finished; English Myatt's, 2s.; Beauty of Hebron, 2s. to 2s. 3d.; and Regents, 2s. per bushel.

CORN.

Averages.—Official statement showing the average price of British corn, imperial measure, in the week ended August 25:—Wheat, 36s. 1d.; Barley, 21s. 11d.; Oats, 20s. 9d. For the corresponding week in 1887:—Wheat, 30s. 10d.; Barley, 24s. 5d.; Oats, 16s. 5d.

FRUIT AND VEGETABLES.

SPITALFIELDS: August 29.—Plentiful supplies of all kinds of fruits, fresh vegetables, Potatoes, &c.; trade somewhat slow at prices as under:—Black Currants, 4s. to 4s. 6d. per half sieve; red do., 3s. to 3s. 6d. do.; English Green Gages, 5s. 6d. to 7s. per bushel; foreign do., 4s. to 5s. per half-flat; do. 2s. 6d. to 3s. per basket of about 18 to 20 lb.; Gooseberries, 3s. to 3s. 3d. per half sieve; English Plums, 3s. to 4s. do.; foreign do., 3s. to 3s. 6d. per flat; do., 2s. to 2s. 6d. per round basket; English Tomatoes, 4s. 6d. to 5s. 6d. per peck; foreign do., 2s. to 2s. per box; Apples, 4s. 6d. to 7s. per bushel; do., 2s. 6d. to 3s. 6d. per half-bushel; Pears, 4s. 6d. to 6s. per bushel. Vegetables: Cauliflowers, 2s. 6d. to 5s. per tally; Cabbages, 1s. 6d. to 3s. do.; Vegetable Marrows, 2s. 6d. to 3s. 6d. do.; Peas, 2s. 6d. per bushel; do., 2s. 6d. to 4s. per sack; Broad Beans, 1s. to 1s. 6d. per bushel; do., 1s. 6d. to 2s. per sack; Scarlet Runners, 1s. 6d. to 2s. 6d. per sieve; foreign Onions, 6s. to 7s. 6d. per case; Turnips, 2s. to 2s. 3d. per dozen bunches; Carrots, 2s. do.; Onions, 2s. to 2s. 6d. do.; Parsley, 1s. to 1s. 6d. do.; Mint, 1s. to 2s. do.; frame Cucumbers, 2s. to 3s. 6d. per dozen; common do., 9d. to 1s. do.; Endive, 1s. to 1s. 3d. do.; Cos Lettuces, 6d. to 8d. per score; Beetroots, 2s. to 3s. per dozen bunches; Walnuts (for pickling), 2s. to 2s. 3d. per half sieve.

STRATFORD: August 28.—Both trade and supply have been good during the past week. Cabbages, 2s. to 3s. per tally; Carrots, household, 3s. to 3s. 6d. per dozen bunches; Mangels, 26s. to 28s. per ton; Onions, 7s. 6d. to 8s. 6d. per case; Lisbons, 7s. 3d. to 7s. 9d. do.; Apples, English, 3s. to 6s. per bushel; Watercress, 6d. per dozen; Tomatoes, 4½d. per lb.; ditto Bordeaux, 2s. 6d. per box; Pears, 3s. to 3s. 6d. per sieve; Plums, 3s. to 5s. per half-sieve.

POTATOS.

BOROUGH AND SPITALFIELDS: August 28.—Full supplies continue to be sent on the market, and with a dull demand prices rule in favour of buyers. Quotations:—Regents, 60s. to 80s.; Shaws, 60s. to 70s.; Hebrons, 60s. to 85s.; kidneys, 65s. to 85s.; Early Roses, 40s. to 60s. per ton.

SPITALFIELDS: August 29.—Quotations:—English Regents, 55s. to 70s.; do. kidneys, 60s. to 80s.; Beauty of Hebron, 55s. to 65s.; Early Rose, 50s. to 55s. per ton.

STRATFORD: August 28.—Quotations:—Kidneys, 55s. to 70s.; light land Magnum Bonum, 50s. to 70s.; dark do., 50s. to 60s.; Early Rose, 45s. to 60s.; and Beauty of Hebron, 50s. to 65s. per ton.

HAY.

Averages.—The following are the averages of the prices obtained at the various metropolitan markets during the past week:—Clover, prime, 98s. to 135s.; second, 80s. to 110s.; mixture, 80s. to 130s.; hay, prime, 94s. to 130s.; inferior, 50s. to 110s.; and straw, 36s. to 48s. per load.

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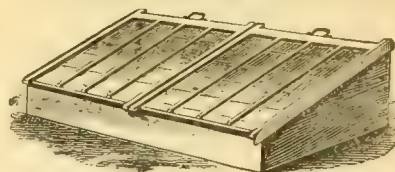
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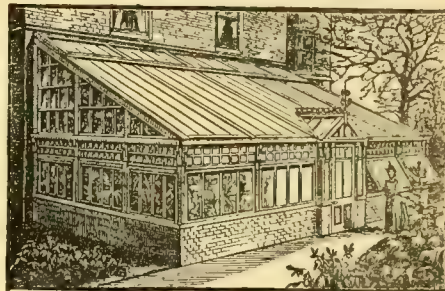


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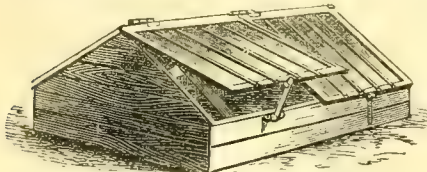
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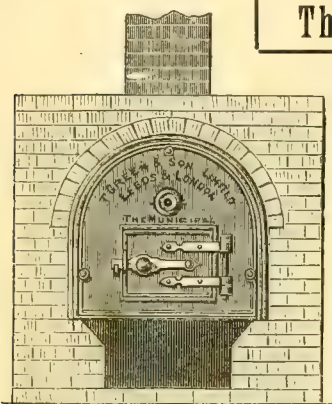
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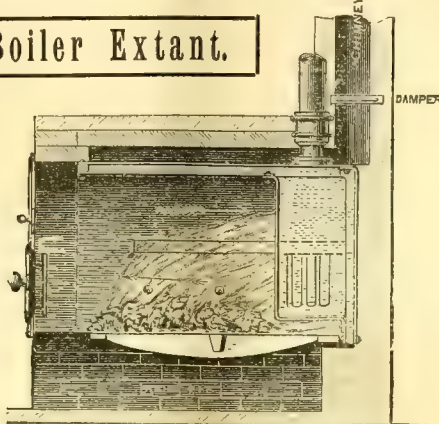
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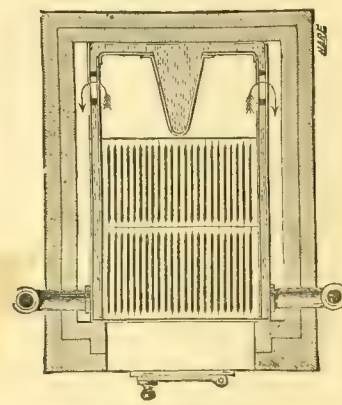
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Now ready, in cloth, 11s. 6d.

THE GARDENERS' CHRONICLE,
Vol. III., Third Series, JAN. to JUNE, 1888.

W. RICHARDS, 41, Wellington Street, Strand, W.C.

NATIONAL CHRYSANTHEMUM SOCIETY.

ROYAL AQUARIUM, WESTMINSTER.—Early CHRYSANTHEMUM and DAHLIA EXHIBITION, SEPTEMBER 12 and 13. Schedules free on application. The Floral Committee will meet September 12, October 10, 24; November 7, 21; December 5, and January 9.

WILLIAM HOLMES, Hon. Sec.,

Frampton Park Nurseries, Hackney, E.

PLEASE NOTE.—Intending Members should join at once, and so secure the full advantages for the current season—viz., admission to 4 Grand Exhibitions, 7 Floral Meetings, and the usual privileges. Ordinary Member, 5s., and Fellows, 21s. per annum.

GLASGOW AND WEST OF SCOTLAND HORTICULTURAL SOCIETY'S

GRAND AUTUMN FLOWER SHOW will be held (by special arrangement) within the International Exhibition, Glasgow, on WEDNESDAY, THURSDAY, and FRIDAY, September 12, 13, and 14, 1888. Admission to Exhibition and Flower Show, 1s. The magnificent Bands of the Exhibition will perform.

FRANC GIBB DOUGALL,

Secretary to the Glasgow and West of Scotland Horticultural Society.

The Committee have agreed to give the following Special Prizes, open to all, not included in the Schedule:—For 10 Best Specimens of Foliage and Flowering Plants—8 Foliage and 4 in Flower—1st Prize, £10; 2nd, £6; and 3rd, £4.

Competitors will use Form in the Prize Schedule, which must be sent to Mr. F. G. DOUGALL, 167, Canning Street, Glasgow, not later than September 7.

HARTLAND'S ORIGINAL LITTLE BOOK OF DAFFODILS and CHRISTMAS ROSES for 1888 is now ready. Price 1s. 6d.; gratis with orders above 40s. Please send for copy, and if you do not like the work as a reference, its cost will be refunded. Bulbs never finer, and Gertrude Hartland's additional drawings superb.—WM. BAYLOR HARTLAND, Seedsman, F.R.H.S., 21, Patrick Street, Cork.

SUTTON'S HYACINTHS
FOR POTS AND GLASSES.

SUTTON'S NARCISSI
FOR POT CULTURE.

SUTTON'S TULIPS
FOR POT CULTURE.

FOR LOWEST PRICES
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SUTTON'S BULB CATALOGUE:
beautifully Illustrated with numerous Engravings and a handsome Coloured Plate, representing the leading Bulbous Flowers, and containing accurate descriptions of the choicest Narcissus, together with particulars of the best varieties of Hyacinths, Tulips, &c., for bedding. Now Ready: Post-free to intending Customers.
SUTTON AND SONS, The Queen's Seedsman, READING.

STRAWBERRY RUNNERS.—Strong and well rooted. Rifleman, the best Market variety in cultivation; also Elton Pine. Price 10s. per 1000, cash.
J. B. YOUNG, Bridge of Allan.

ORCHIDS.—Amateurs having Large Specimens to DISPOSE OF in EXCHANGE, are requested to state value expected and sorts desired, to
W. H. (who has a large stock to select from), *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

WANTED, GERANIUM CUTTINGS.—Sophie Dumaresque, Louisa Smith, Mrs. Pollock, MacMahon, Chelsea Gem, Lass o' Gowrie, West Brighton Gem. State Price, or would EXCHANGE with the best Covent Garden strain CINERARIAS fit for potting.
Apply, FOREMAN, Calcot Gardens, Reading, Berks.

WANTED, CUTTINGS OF GERANIUMS.—Mrs. Pollock, Sophia Dumaresque, Henry Jacoby, and Lady Emily. Samples and price, with quantity to offer, to WEBB AND BRAND (late Cheater), Nurseries, Saffron Walden.

WANTED, good Specimen CYATHEA DEALBATA. Particulars as to size and price to IRELAND and THOMSON, Nurserymen, Edinburgh.

WANTED, STRAWBERRY RUNNERS, strong, President and James Veitch. TROPÆOLUM Ball of Fire, Canariense Improved.
H. CANNELL AND SONS, Swanley, Kent.

PEACHES, PEACHES, MELONS, &c.—Highest Market Prices guaranteed for really good and well-packed fruit of the above.—HENRY RIDES (late Wise & Rides), Fruit and Flower Salesman, Covent Garden, W.C.

Floral and Fruit Commission Agency.

W. CALE is open to RECEIVE CONSIGNMENTS of choice FLOWERS and FRUIT. Empties supplied.—10, Burleigh Street, Strand; and Flower Market, Covent Garden, W.C.

SQUELCH AND BARNHAM, North Row, Covent Garden, W.C., are OPEN TO DISPOSE OF any quantity of MUSCATS and BLACK GRAPES, TOMATOES, CUCUMBERS, FRENCH BEANS, STRAWBERRIES, CHOICE FLOWERS, &c. Highest Market Prices obtained. Account Sales daily; Cheques weekly or as preferred by Sender. Baskets and Labels supplied. References given.

MESSRS. GREGORY AND EVANS, NURSERYMEN, Sidcup, and 285, 286, 287, 288, Flower Market, Covent Garden, W.C., are open to RECEIVE CONSIGNMENTS of Choice CUT FLOWERS in any quantity for their Commission Department. Boxes and Labels supplied. Telegraph Address—"COMMISSION, SIDCUP."

Surplus Cut Flowers.

HOOPER AND CO. (Limited) RECEIVE and DISPOSE of any quantity of above at best Market Prices. Boxes, &c., supplied.—Address, Commission Department, HOOPER AND CO. (Limited), Covent Garden, W.C.

S. HILL, Jun., COMMISSION AGENT, RECEIVES FOR DISPOSAL any quantity of Choice CUT FLOWERS. Market Prices Returned Weekly. Empties supplied.—21, Charlotte Street, Fitzroy Square, and Covent Garden Market, W.C.

Erratum.

MESSRS. PROTHEROE AND MORRIS'
SALE at UPPER EDMONTON. See *Gardeners' Chronicle* last week, p. 230.
For H. Bellay read H. B. MAY.

Azaleas, Camellias, Orchids, Palms, &c.
AUG. VAN GEERT, Continental Nurseries, Ghent, Belgium. Special LIST now ready, and will be sent post-free on application to
WILLIAM DENMAN, 7, Catherine Street, Covent Garden, W.C.
See large Advertisement, August 26, page 205.

SPECIAL OFFER OF FERNS.—*Pteris tremula*, *P. cretica*, *P. cretica cristata*, *P. serrulata cristata compacta*.—CINERARIAS and PRIMULAS in best Covent Garden strains. All in thumbs, fit for immediate potting. Also *Pteris tremula*, good stuff, in 48's, to offer in quantity. Prices per 100 or 1000 on application.
R. PENGELLY,
Dyson's Lane, Upper Edmonton.

Bulbs of Finest Quality only.
BARR'S BULB CATALOGUE for 1888, Now Ready. Sent free on application. Contains full Descriptive List of the best Hyacinths, Tulips, and other Dutch Bulbs in cultivation, also an interesting descriptive List of Cape and Californian Bulbs and Tubers, including many beautiful rarities.
BARR AND SON, 12 and 13, King Street, Covent Garden, W.C.

BOUVARDIAS.—Special Offer.—Best Market sorts, very strong, in 60 pots, 20s. and 15s. per 100. ADIANTUM CUNEATUM, strong, in 60 pots, 12s. per 100. PRIMULA, Double White, 25s. per 100.
ROBERTS BROS., East Grinstead.

BOX'S JUBILEE BEGONIAS.—Thousands of outdoor Begonias now in full flower at Tooting Park Nursery (close to Balham Station). The best display in the Trade, and cheapest rates.
JOHN R. BOX (for ten years J. Laing's sole partner), Tooting, Balham, and Croydon.

To the Seed Trade.
NEW ZEALAND COCKSFOOT (DACTYLIS GLOMERATA).
HORNE, SON, and BRYANT, 59, Mark Lane, London, E.C., are First-hand Sellers of the New Crop. 14 to 18 lb. per Bushel. Samples and Quotations on application.

MR. DODWELL'S GRAND CARNATIONS.—The finest grown. 5000 Unbloomed Seedlings, warranted of the highest parentage; unrivalled whether for bedding or forcing for spring flowering. 3s. 6d. per doz.; 21s. per 100. Special terms for quantities. Particulars on application.
The Cottage, Stanley Road, Oxford.

Now in Full Bloom.

BEGONIAS.—Awarded Four Gold Medals. Unequaled as a floral display. Visitors are cordially invited; free admission. Frequent trains from the City and West End to Catford Bridge and Forest Hill Stations.
JOHN LAING AND SONS, Stanstead Park, Forest Hill, S.E.

Kent—The Garden of England.

STRAWBERRIES true to Name.

GEO. BUNYARD AND CO'S NEW LIST, embracing Noble, Waterloo, &c., and the 30 best kinds, may now be had on application. Splendid Plants in little pots, and Runners. The Old Nurseries, Maidstone.

DICKSON'S IMPROVED MUSHROOM SPAWN, most superior, now reduced to 5s. per bushel of 14 cakes. Circular with Cultural Notes and List of Testimonials post-free on application.
DICKSONS (Limited), The Royal Seed Warehouse, CHESTER.

PASTUPLANTA, the best Artificial Manure. It enriches the soil with the fertilisers drawn from it by plants; no unpleasant smell; admirably adapted for all pot plants. In bags: 112 lb., 19s.; 56 lb., 11s. 3d.; 28 lb., 6s. 9d.; 14 lb., 4s.; 7 lb., 2s. 3d. In tins, 1s. each. Sole Manufacturers, (PHILIP HARRIS AND CO. (Limited), 9, Bull Ring, Birmingham.

W. H. LASCELLES AND CO., HORTICULTURAL BUILDERS, 121, BUNHILL ROW, LONDON, E.C. Plans and Estimates Free. See large Advertisement, September 1, page 233.

SALES BY AUCTION.

Bulbs from Holland.

Sales every MONDAY, WEDNESDAY, and SATURDAY, in Large and Small Lots, to suit all Buyers.

MR. J. C. STEVENS will **SELL** by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., every MONDAY, WEDNESDAY, and SATURDAY, at half-past 12 o'clock precisely each day, first class consignments of HYACINTHS, TULIPS, CROCUSES, and other BULBS, arriving daily from well-known Farms in Holland.

On view morning of Sale, and Catalogues had.

Thursday Next.—(Sale No. 7739.)

SPECIAL SALE OF ORCHIDS IN FLOWER and BUD.

MR. J. C. STEVENS will **SELL** by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, September 13, at half-past 12 o'clock precisely, a fine collection of ORCHIDS in FLOWER and BUD, comprising *Cypripedium Seegerianum*, *C. Pageanum*, *Odontoglossum asperum*, *Cattleyas*, *Laelias*, &c.; also some choice ESTABLISHED ORCHIDS, including *Cypripedium Morganii*, with 3 leads; *C. grande*, *C. Veitchii* (Demidoff var.), 2 splendid specimens of *Cymbidium Lowii*, &c.

On view morning of Sale, and Catalogues had.

Thursday Next.—(Sale 7739.)

VALUABLE IMPORTED ORCHIDS.

MR. J. C. STEVENS will **SELL** by AUCTION, at his Great Rooms, 38, King Street Covent Garden, W.C., on THURSDAY NEXT September 13, at half-past 12 o'clock precisely by order of Messrs. Shuttleworth, Carder & Co., VALUABLE IMPORTED ORCHIDS, the whole in fine condition, including *Cattleya aurea*, *C. Mendelii*, and *C. gigas*; *Odontoglossum vexillarium*, *O. grande*, *O. crispum* (Alexander), the very best type; *Onidium fuscum*, *O. Kramerianum*, *Bollea Patinii*, *Compactia macrophyllum*, and the rare *Chysis aurea* var. *maculatum*, &c.

On view morning of Sale, and Catalogues had.

Linslade, Leighton Buzzard.

Within five minutes' walk of the Station.

MESSRS. STAFFORD AND ROGERS will **SELL** by AUCTION, on THURSDAY, September 20, 1888, at 3 o'clock precisely, by direction of the Executors of the late Mr. Winchello, the PRODUCE OF THE VINEY, comprising about 400 large bunches of Black Hamburg Grapes, some ready for table, and the remainder for successive cuttings. Also the whole of the FRUIT and GARDEN PRODUCE, including a large quantity of the best sorts of Peas, Apples, and Plums, Greenhouse and other Plants, &c., subject to conditions to be read at the time of Sale.

Catalogues to be obtained of Messrs. STAFFORD AND ROGERS, Bedford.

Dutch Bulbs.

Every MONDAY, THURSDAY, and SATURDAY.

Great Unreserved Sales.

MESSRS. PROTHEROE AND MORRIS will **SELL** by AUCTION, at the Central Sale Rooms, 67 and 68, Cheapside, London, E.C., every MONDAY, THURSDAY, and SATURDAY, at half-past 11 o'clock precisely, extensive consignments of first-class HYACINTHS, TULIPS, CROCUS, NARCISSUS, and other BULBS, from Holland, lotted to suit the Trade and Private Buyers.

On view morning of Sale, and Catalogues had.

Peterborough.—Under a Deed of Assignment.

Two Days' UNRESERVED CLEARANCE SALE of the whole of the STOVE and GREENHOUSE PLANTS, UTENSILS-IN-TRADE, EXHIBITION PLANT VAN, &c., by Order of the Trustees of the Estate of Mr. John House, the Freehold Nursery having been disposed of.

MESSRS. PROTHEROE AND MORRIS are instructed to **SELL** by AUCTION, on the Premises, the Estate Nurseries, Peterborough, on TUESDAY and WEDNESDAY, September 11 and 12, at 11 for 12 o'clock precisely each day, without Reserve, the whole of the remarkably well-grown STOVE and GREENHOUSE PLANTS, consisting of 4000 Maidenhair Ferns, 1000 Tuberose, Specimen Palms, 1000 Aspidistras, fine Specimen Lapagerias, 2000 Tea Roses in pots, 500 Azaleas, well set; Specimen Camellias, 1500 Eucharis amazonica, 2000 Dahlias, Carnations, a fine collection of Pæonies, Bulbs and Plants in ground; nearly new EXHIBITION PLANT VAN, constructed to travel on any Railway; 20 HIVES of BEES, and numerous other effects.

May be viewed one week prior to the Sale. Catalogues may be obtained at the Nurseries, or at the Seed Shop, Church Street, Peterborough; of J. ADNITT, Esq., the Trustee, Oriel House, New Road, Peterborough; and of the Auctioneers, Estate Agents and Valuers, 67 and 68, Cheapside, London, E.C.; and Leytonstone, E.

N.B.—In consequence of the large number of lots in this Sale it has been found impossible to include the OUTDOOR NURSERY STOCK in the Branch Nursery, which will be sold on the Premises on TUESDAY, October 9.

Swanley Junction, Kent.

GREAT UNRESERVED SALE of immense quantities of unusually well-grown GREENHOUSE PLANTS.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. P. Ladds to **SELL** by AUCTION, on the Premises, The Nurseries, Swanley Junction, Kent (adjoining the Swanley Junction Railway Station), on THURSDAY, September 13, at 11 o'clock precisely in consequence of the unusually large number of lots, immense quantities of GREENHOUSE PLANTS, including the following:—

24,000 winter-flowering Heaths	2000 Crotons
20,000 Genistas	1000 Palms
6000 Solanums	1000 Dracenas
12,000 winter-flowering Carnations	5000 Zonal Geraniums
7000 Adiantum Cuneatum	Queen of Whites improved
10,000 Tea Roses (all best varieties)	2000 Ferns in variety
1000 Clematis Jackmanni	300 specimen Gardenias
	Quantity of small Heaths
	600 White Primulas
	Variety of other stock.

The Stock may now be viewed. Catalogues had of Mr. P. LADDS, on the Premises, and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

Friday Next.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. F. Sander to **SELL** by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY NEXT, September 14, at half-past 12 o'clock precisely, a grand importation of the magnificent *ONCIDIUM CRISPUM*, just to hand per steamer *Tages*, some exceptionally fine masses being amongst it. The plants offered are in splendid condition, with strong plump pseudobulbs, abundantly furnished with healthy green foliage; also a fine lot of *O. MARSHALLIANUM*. It is very seldom this fine Orchid can be offered in such masses, being extremely rare in Brazil. The plants offered are almost as good as established. *PHAIUS SPECIES*, a very fine importation from the interior of Brazil, in splendid condition. A grand lot of *CATTLEYA VIOLACEA* from a new district; *C. FORBESII*, *C. CITRINA*; a fine lot of *LELIA CINNABARIVA*, a large importation of *ODONTOGLOSSUM VEXILLARIUM* variety, from a new district; the rare *ONCIDIUM CURTUM*, *O. CAVENTISHIANUM*, splendid masses, in grand condition; *O. FORBESII*; a fine lot of the rare *ORNITHOCEPHALUS GRANDIFLORUS*; large importations of *SOPHRONITIS GRANDIFLORA*, including very good masses in splendid condition; fine growing plants, well established, of the rare *ONCIDIUM HUMEANUM*, and many other valuable ORCHIDS. Also an assortment of ESTABLISHED ORCHIDS, another property.

On view morning of Sale, and Catalogues had.

Upper Edmonton.

About 3 minutes' walk from Angel Road, and 8 minutes' walk from Silver Street Stations, G.E.R.

THIRD ANNUAL SALE.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. H. B. May to **SELL** by AUCTION, on the Premises, the Dyson's Lane Nurseries, Upper Edmonton, on MONDAY, September 17, at 12 o'clock precisely, in consequence of the large number of lots, about 40,000 STOVE and GREENHOUSE PLANTS, remarkably well grown and in the best possible condition, comprising:—

20,000 FERNS, including *Adiantum cuneatum*, *Lomaria gibba*, the most useful sorts of *Pteris*, *Adiantum elegans* (a useful variety for cutting), and many rare and choice sorts.

10,000 TREE CARNATIONS, including *Middle*, *Carle*, *A. Alegatierre*, *Dr. Raymond*, *Andalusia*, *Fride* of *Penshurst*, *Lucifer*, and all the best sorts.

CRIMSON CLOVES, CARNATION Mrs. REYNOLDS HOLE, &c.

TEA ROSES—extra strong *Maréchal Niel* and *Gloire de Dijon*, with growths from 15 to 18 feet long; *The Bride* (new white), and other good sorts.

A splendid lot of *AMPELOPSIS*, *CLEMATIS*, *IVIES*, &c.

AZALEAS, white, large plants for cutting from; English-grown *CAMELLIAS*, full of bloom-buds; *BOUVARDIAS*, including the new beautiful scarlet *President Cleveland*; Double White *PRIMULAS*, *CYCLAMEN*, *EUCARIS AMAZONICA*, &c.

CROTONS, a splendid lot of beautifully coloured sorts; *FICUS ELASTICA*, *ARALIA SIEBOLDII*, &c.

Many thousands of small HEATHS, *GENISTAS*, &c.

May be viewed. Catalogues had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, E.C.; and Leytonstone, E.

Lea Bridge Road, E.

ANNUAL UNRESERVED SALE of fine Winter-flowering HEATHS, &c.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. John Fraser to **SELL** by AUCTION, on the Premises, the Lea Bridge Nurseries, Lea Bridge Road, Leyton, E. (close to the Hoe Street Station, Great Eastern Railway) on WEDNESDAY, September 19, at 11 o'clock precisely, in consequence of the large number of lots. A large quantity of WINTER FLOWERING and OTHER PLANTS, including:—

12,000 Erica hyemalis	2000 Maréchal Niel and other Roses
3000 Tree Carnations	6000 Clematis Jackmanni and other best named sorts
4000 Erica gracilis	5000 Bouvardias, including a lot of "President Cleveland"
2000 Ampelopsis Veitchii	5000 Solanums
4000 fine named Hollyhocks from seed	1000 Clematis indivisa lobata
1000 Lapageria rosea superba	
6000 Cyclamen persicum (Fraser's superb strain)	

and a great number of *Araucaria excelsa*, *Epacris*, *Passifloras*, *Jasmines*, *Honeysuckles*, variegated *Ivies*, *Lapageria alba* from seed, and other plants.

The whole of the Stock is in the best condition, and ready for immediate Sale.

May be viewed. Catalogues had on the Premises; and of the Auctioneers, 67 and 68, Cheapside, London, E.C.; and Leytonstone, E.

Sidcup, Kent, S.E.

About ten minutes' walk from New Eltham Station, S.E.R. GREAT ANNUAL TRADE SALE OF WINTER-BLOOMING HEATHS, &c.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. Gregory & Evans to **SELL** by AUCTION, on the Premises, The Longlands Nursery, Sidcup, S.E., on FRIDAY, September 21, at 11 o'clock precisely, in consequence of the large number of lots, without reserve, an enormous quantity of unusually well-grown WINTER-BLOOMING HEATHS and other PLANTS, consisting of:—

30,000 Erica hyemalis	5,000 Erica gracilis
1,000 " Caffra	1,000 mixed varieties of Erica
3,000 " Cavendishii	
3,000 " Cocconia minor	3,000 Erica magnifica
All in 40 and 48-pots.	5,000 Genistas
10,000 Solanum, well berried	10,000 Bouvardias of sorts
1,000 Double Primulas	6,000 Cyclamen, best market strain
1,000 Poinsettias	
12,000 Roses, grown especially for the Sale, including some of the best leading sorts for pot culture	5,000 Adiantum cuneatum
	1,000 Ivies of sorts
	10,000 small Ferns for growing on

The whole stock will be found up to the quality of previous years.

May be viewed. Catalogues had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, London, E.C., and Leytonstone, E.

Lee, Kent, S.E.

GREAT ANNUAL TRADE SALE, to commence punctually at 11 o'clock, in consequence of the large number of lots.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. B. Maller & Son, to **SELL** by AUCTION, on the Premises, The Burnt Ash Lane Nurseries, Lee, S.E., adjoining the Railway Station, on TUESDAY, September 18, at 11 o'clock punctually, without reserve, 25,000 Winter-blooming HEATHS, beautifully grown, and remarkably well set with bloom buds, including:—

15,000 Erica hyemalis	Alsophilla australis, in 24 and 16-pots
5,000 " gracilis	500 Epacris, well grown.
Large quantities of Melanthus, ventricosa, perspicua, erecta, Cavendishii, Caffra, and other kinds	Boronia megastigma
	Quantity of extra strong Maréchal Niel and other Tea Roses
15,000 Small E. hyemalis and 5,000 Small E. gracilis, for growing on	4,000 Grevillea robusta
8,000 Solanum capsicastrum, in berry	Palms
6,000 Bouvardias, single and double	Ficus elastica
2,000 Genistas, very fine	Greenhouse Passion-flowers
Cyclamen persicum	Poinsettias
2,000 Adiantum cuneatum	Ampelopsis Veitchii
3,000 Lomaria gibba, true, compact variety, and other Ferns	Stephanotis
	Plumbago capensis flore alba
	500 Clematis Jackmanni
	Beautifully Coloured Crotons, &c.

May be viewed. Catalogues may be had on the Premises, or of the Auctioneers and Valuers, 67 and 68, Cheapside, E.C., and Leytonstone, E.

N.B.—Messrs. P. & M. desire to call the attention of intending purchasers to the Stock to be offered as above. The Plants are remarkably well grown, fit for immediate Sale, and the whole will be found in an equally good condition as former years.

Enfield Highway, N.

The Brimsdown Nursery, adjoining Brimsdown Station, Great Eastern Railway.

TWENTY-SECOND ANNUAL TRADE SALE.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. John Maller to **SELL** by AUCTION, on the Premises, The Brimsdown Nursery, Enfield Highway, N., on THURSDAY, September 20, at 11 o'clock precisely, in consequence of the unusually large number of lots, without Reserve, upwards of 1200 lots of remarkably well-grown STOVE and GREENHOUSE PLANTS, mostly in 48-pots, and fit for immediate Sale, consisting of:—

15,000 winter-blooming Heaths, including hyemalis, gracilis, Caffra, Wilmorea, &c., and extra large E. Cavendishii	1,000 double white Primulas
5,000 Solanums, exceptionally well grown	1,000 Stove and Greenhouse Climbers
5,000 Ferns, Pteris, &c.	Dipladenias, of sorts
3,000 Tree Carnations, leading varieties	Allamandas
500 Epacris, sorts	Bougainvilleas
5,000 Bouvardias	Stephanotis
1,000 Geraniums, Improved Queen of Whites, &c.	Tacsonias
	1,000 Passifloras and Ampelopsis Veitchii
	Crotons and Dracenas, beautifully coloured
	1,000 Palms, Ficus, Grevilleas, &c.
	Large Azaleas for cutting

Many thousands of small *Ericas*, *Genistas*, *Ferns*, &c.; large quantities of *Acacias*, *Gardenias*, *Euphorbia jacquiniiflora*, *Chrysanthemums*, *Poinsettias*, *Euonymus ovatus aureus*, in stores, &c., suitable for the Trade, and other extensive buyers.

May be seen any day prior to the Sale. Catalogues may be had on the Premises, or at the Brunswick Nursery, Tottenham; and of the Auctioneers, 67 and 68, Cheapside, London, E.C., and Leytonstone, E.

N.B.—The Auctioneers desire to call the attention of intending purchasers to this GREAT ANNUAL TRADE SALE, which has hitherto taken place at the Brunswick Nursery, Tottenham; but, in consequence of the Lease of that Nursery having nearly expired, the Sale this year, and in future, will take place as above, adjoining the Brimsdown Station, G.E.R. The whole of the Stock is in first-rate condition, the *Ericas* being especially well set for flower, and the *Solanums* unusually well berried. There will also be this season a Sale at The BRUNSWICK NURSERY, Tottenham, on THURSDAY, September 27, of which a separate Advertisement will appear.

Kingston-on-Thames.

By order of the Executors of the late Mr. Thomas Jackson. CLEARANCE SALE of the whole of the GREENHOUSE, STOVE, and other PLANTS, a choice COLLECTION of ESTABLISHED ORCHIDS, large CAMELLIAS, UTENSILS-IN-TRADE, &c., without reserve.

MESSRS. PROTHEROE AND MORRIS (having sold the Freehold Estate), are instructed to **SELL** by AUCTION, on the Premises, the Kingston Nursery, Kingston-on-Thames, close to the Kingston Railway Station, on TUESDAY and WEDNESDAY, September 25 and 26, at 12 o'clock precisely each day, without reserve, the whole of the well-grown GREENHOUSE and STOVE PLANTS, including some thousands of Ferns, Geraniums, Fuchsias, 4000 Pot Roses, 200 large Double White and other Camellias, from 2 to 12 feet, particularly worthy the notice of the Trade; Azalea India, a large and choice assortment of ESTABLISHED ORCHIDS, comprising *Cattleyas*, *Vandas*, *Saccolabiums*, *Aerides*, *Odontoglossums*, principally *O. Alexandra*, also the LIVE and DEAD STOCK, consisting of:—Horses, 5 Cows, 2 Exhibition Plant Vans, Utensils-in-Trade, and numerous other effects.

May be viewed three days prior to the Sale. Catalogues may be had on the Premises; at the various Branch Nurseries, Norbiton and Long Ditton; of G. C. SHERARD, Esq., Solicitor, 26, Lincoln's Inn Fields, W.C., and Kingston; and of the Auctioneers, 67 and 68, Cheapside, London, E.C., and Leytonstone, E.

N.B.—The whole of the Valuable Nursery Stock now growing on the Branch Nurseries, will be lotted to suit Large and Small Purchasers, and Sold without reserve, on the respective Premises, OCTOBER 15 and following days, in the meantime anyone desirous of having either of the productive Nurseries transferred may arrange to do so with the Auctioneers, which would afford them the opportunity of purchasing only what Stock they require at unreserved Auction Prices.

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TO THE
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IPSWICH.



THE
Gardeners' Chronicle.

SATURDAY, SEPTEMBER 8, 1888.

CONFERENCE OF FRUIT GROWERS.

A CONFERENCE of fruit growers was held
at the Corn Exchange, St. Albans, on
Tuesday last, to hear a lecture by Mr. Sampson
Morgan on "Small Fruit Farms," and to consider
means for promoting larger attention to fruit
growing. Mr. H. P. Smith (ex-Mayor) presided.
Mr. Sampson Morgan's lecture [we quote from
the *Times*], dealt with the creation of small
farms for the alleviation of agricultural dis-
tress. With the good land at our disposal the
old forms of cultivation must give way to
new. The system of small farming which he
would recommend the Legislature to promote
would be as follows:—To obtain freehold land
at, say, £20 an acre, and divide it into two-acre
plots. Upon each plot would be a labourer's
cottage, with 50 feet of glasshouse and 100 feet
of frames. One acre would be planted with
special fruit trees, and from each two-acre plot an
industrious man could obtain a living for his
family. The cost of the two acres, cottage, glass
erection, 260 fruit trees, manure, &c., would be
£125. For, say, 2s. 6d. a week a million
labourers could secure a perfect little homestead.
In answer to the objection that there would be
an overplus of production, he would reply that
most of the labourers would prefer to do without
glass, from want of experience, and choose the
extra fruit trees instead, so that 75 per cent.
would be without glass erections. In America,
notwithstanding a great increase of fruit farms,
prices had increased; and as the demand was on
the advance in England, and we imported so
much fruit, &c., they need not fear over-produc-
tion. Did the home-grower satisfy the demand
that existed there would hardly be any need for
imported goods at all. He gave many instances
as to experiments, prices, &c., and said he had
known growers to secure, season after season, a
nett return of £100 per acre from fruit alone.
His suggestion was equally favourable to the
landlord and to the tenant, since were more land
devoted to fruit the value of the land would
increase. Arable land being worth from 20s. to

60s. per acre, while orchard land was worth £4 to £10, showed that owners who screened themselves behind their legal rights were not only the enemies of the people, but also their own. Small fruit farms had become deservedly popular in the most prosperous States of America.

Mr. W. F. Emptage, of Hawswick, St. Albans, read a paper on "Fruits Suitable for the District for Market Purposes." After describing the qualities of the land in the locality, he said that some of this land would pay better with fruit than with Wheat, but with this condition—that the soil must not be trenched. Trenching frequently occasioned "canker" of the soil. On the riversides of the Ver, Lea, and Colne, he ventured to assert, there was some of the finest land in the world, but it was mostly covered with grass. Those who, a few years ago, persuaded the farmer to lay down grass had done more to promote agricultural depression than any foreign competition. It had drawn the labourer from the land; and he was rather glad the past season had been so bad, because it would give the quietus to the laying down of good land to grass. The land was now bound down by cursed laws, and held by hands which did little for their fellow beings. A better state of things might be brought about by the better cultivation of the land. In the growing of fruit lay England's salvation. He considered that a greater production of the Grape would prevent much excessive drinking, and they might be grown so as to be supplied to the poor man, and made to pay, at 4d. per pound, and then pay better than Wheat. He spoke thus after having made experiments in Grape production in Herts. They need not let foreigners supply all our fruit. In conclusion, he would recommend the early system of cultivation combined with the system of irrigation discovered by the Hon. A. N. Cole, of Wellsville, U.S.A., which adopted, the land of England and Ireland would support in comfort their populations—indeed, would amply support that population if doubled.

Mr. E. Hobday, of Ramsey, Huntingdonshire, in a paper on "Fruit Planting in Relation to Land Tenure," considered that the main cause of our neglected fruit gardens was that the land was bound up in "fetters forged in a narrow-minded past," and to make the land productive to its fullest extent it must be absolutely free. Fruit growers should feel assured that it would be possible for them to become owners of their own freeholds; and no impracticable conditions should be imposed on tenants which were likely to hamper industry. He referred to the baneful effects of the extraordinary tithes and ancient manorial exactions. Mr. Hobday condemned the former practice of growing numerous varieties, and said that beyond selecting good stocks it was necessary to judge of what would best suit a locality before planting, and to well consider the capabilities of the land. He hoped that the English markets would soon be filled with home-grown fruit.

Among other papers read was one by Mr. Joseph Cheal, of Crawley, Sussex, on "Apple and Pear Culture," which he regarded in the light of the proverb "He that plants Pears, plants for his heirs." He dwelt in detail upon the "Cordon" system of culture, recently adopted in this country, and signifying practically the planting of fruit trees in extended lines. He had witnessed the remarkable success of this system in the Channel Islands. Gardeners had been slow to recognise its advantages, but the want of success complained of in some quarters could be traced to a false start in some important particular, or to the want of knowledge as the proper pruning and treatment.

At the close of the Conference resolutions were passed protesting against the tolls exacted at Covent Garden and provincial markets; protesting against the practice of the Royal Horticultural Society in granting First-class Certificates to comparatively worthless fruits; and calling upon the Legislature to appoint a Royal Commission to enquire into the present system of tenure of labourers' allotments, and the question of improved systems of culture. A special resolution was also passed against the railway rates charged to horticulturists.

MARKETING FRUIT.

Apropos of the above important subject, we reprint a letter which appeared in the *Gloucester Journal* of September 1:—

"Much has lately been said and written upon the better utilisation of our crops of fruit, and it all tends to show how far Englishmen are behind other countries in preserving and packing fruit. The present method of disposing of our fruit is more worthy of the rough and ready times fifty years ago than of the present day, when science and skill have done so much to enlighten us. What are the facts? In England, when we get an abundant crop of fruit (take Plums as an instance), the few first pots usually sell well; but the markets soon become so completely glutted that salesmen sometimes have a difficulty in selling for a sufficient sum to pay the carriage, and the grower gets only a trifle, or perhaps nothing, for picking and packing; consequently many tons are often left to rot when the crop is very heavy. As soon as the main crop is gone, the few very late Plums usually fetch good prices, thereby proving that there is always a fair consumptive demand; therefore if, instead of glutting our markets when the main crop is ripe, we could utilise a portion by drying, &c., we should secure better prices for the remainder; and then we should have the dried and preserved fruit for use in winter and spring, instead of purchasing these from other countries. Owing to the climate it would probably be impossible for us to produce dried and crystallised fruit equal to that which we import from France, &c.; but, surely we might produce an article which would command a ready sale at a reasonable price; as the dried and crystallised plums which we import are sold at prices which place them entirely beyond the reach of the majority of our population. It certainly appears an absurd policy to feed our people with home-grown fruit only during the time it will keep in its raw state, and import what is required for the remainder of the year; and this, while we throw away the raw material which, with proper treatment, would produce a similar article to that imported. Also with the harder fruit (Apples and Pears) much might be done in drying for spring and summer use, and cheap jam might be made, which would be a boon to the mass of the people, and thus, in a time of plenty, prevent the present waste and the flooding of the country with wretched cider and perry.

"Packing also is a matter in which we are far behind. Smaller packages might be used with very great advantage, and the best fruit would sell much better in small boxes, which could be made very cheaply. These should be branded with the packer's name, thereby insuring to the purchaser a guarantee that the fruit would be as good throughout the box as on the top. After this system had been adopted for a little time those who packed really good fruit would soon find their labours amply rewarded. Very much more could be said upon making fruit more profitable, but some practical experience of drying, preserving and packing would be much more instructive than volumes of written arguments. There appears to be a move throughout the country in this very important matter, and the Gloucestershire Root, Fruit and Grain Society are well to the front, as they are offering through the kindly aid of two county gentlemen several prizes of considerable value for essays

upon this subject and for dried and preserved fruit in various forms, to be competed for at their show in November. Those who would like to compete for these prizes, and, in fact, any interested in fruit, would do well to write to the secretary of the society—Mr. T. H. Phelps, Tibberton, near Gloucester, who will forward a schedule which fully explains the prizes offered."

THE FERNERY.

LASTREAS.

This genus includes many very pretty species, which deserve better attention than they usually get; as they are chiefly hardy, or nearly so, they do not meet with such good treatment as those that require a higher temperature. The deciduous sorts—some of which are very pretty—often suffer much through being neglected after they have lost their fronds, and, consequently, when they start into fresh growth in the spring, the fronds are attenuated and deformed. To keep the plants in good condition through the winter, a little protection is necessary even for the hardy sorts when grown in pots, and they all require just enough moisture to keep the roots in good condition; and as soon as the first sign of activity is discernible they require to be brought into a light cool position. It is one of the greatest faults connected with Fern-growing to keep them in dark over-shaded positions. Of course, plants started under these conditions will not bear exposure afterwards, unless great care is taken in hardening them off; but start them in full daylight, and they will withstand a great amount of sunshine, provided proper attention be paid to watering; and plants so treated are not only more beautiful, but more serviceable as well.

Most of the Lastreas are of rather slow growth, especially in a young state, and generally the spores are longer in starting into growth than is the case in many other Ferns, and they are consequently liable to be over-grown by other sorts which spring up as weeds. I saw an instance of this not long since. *Lastrea erythrosora* had been sown, and a good number of young seedlings were pricked off, but these turned out to be *Pteris*; however, the seed-pot was stood by, and later on a good crop of the right sort came up.

In growing Lastreas the chief thing is to keep them clean. Thrips are particularly partial to most of the species. It seems almost impossible to keep them perfectly clean, but a good deal may be done by keeping all the old fronds removed, always avoiding a dry, arid atmosphere, and using as little artificial heat as possible. The plants should never be disturbed at the root, except when they are in active growth, and they may be repotted two or three times during the season, if it is desired that they should make as much growth as possible. Any ordinary compost will suit them, but peat should be used very sparingly. Like many other Ferns they thrive much better in good loamy soil than where much peat is used. Of the numerous species and varieties the following are among the most useful:—

L. aristata variegata.—This is one of the prettiest, and perhaps the most useful of the genus. The fronds are of good substance, with a bright green surface, relieved by a linear marking of pale green. Although this comes from Japan, and is nearly hardy, it succeeds best in a higher temperature, and to form useful specimens two or three should be grown in the same pot.

L. patens.—A very elegant Fern, with gracefully arching fronds of a pale green; this forms a very pretty plant for table decoration. To grow this successfully the plants must have plenty of room, as, if the fronds come in contact with each other, they get deformed, and do not attain a symmetrical outline; but if the plants are stood upon inverted pots, and receive favourable treatment, they form very handsome specimens.

L. erythrosora is another very useful Fern for decorative purposes. In a young state the fronds have a bright reddish-brown tint, which changes

with age to deep green; the fructification also is very pretty, the coverings of the spore-cases having a bright rosy tint. Although a deciduous species, it is well worthy of a place in every collection, and is a very useful decorative Fern for summer use.

L. decomposita is another very pretty species, with broad finely-cut fronds.

L. Standishii, *L. flabella*, *L. opaca*, *L. atrata*, and *L. Sieboldii*, are all useful greenhouse Ferns. I should not omit the prettily tasselled *L. Richardsii multifida*, which should be grown in a stove temperature; and *L. cristata*, a very pretty hardy form, very regularly tasselled at the extremities of the side-pinnæ, and the fronds terminating with a heavier crest. *Pteris*.

PLANT NOTES.

IRIS DICHOTOMA.

THIS curious species is now flowering in the herbaceous grounds at Kew, and though not in any way to be compared with the numerous garden varieties in cultivation now, it is a very remarkable plant, distinct from any other *Iris* grown, both in habit and flowers. It is figured in the *Botanical Register*, t. 246, Sweet's *Brit. Fl. Garden*, t. 96, and shortly since in the *Bot. Mag.* The figure in the latter work gives the flowers as bright purple, and the description says rather small. In the plant flowering at Kew the standards are pale satiny-white, with just a trace of purple, chequered with brown spots or bars towards the base; the falls are much the same, with the exception of a few scattered purple spots, densely purple spotted or barred from half their length to the base. The flowers are over 2 inches in diameter, from fifty to seventy on each plant, and rarely more than two or three open at a time, and that always towards evening. It has a very much branched habit, throwing flowering branches from all the upper leaves, and these again branched or forked. It seems to have been long in cultivation, but is apparently rare, and probably not more than a biennial. The Kew plants were raised from seed kept in a cold frame during winter. It is not hardy in the open air. *D.*

IRIS ROBINSONII.

A plant of *Iris* (or *Morea*) *Robinsonii*, given to T. A. S. Dorrien Smith, Esq., by H. J. Elwes, Esq., some six years ago, is now in flower in these gardens. It is a native of Lord Howe's Island, and Mr. Elwes says that it has never flowered in Europe before. It also flowered here in 1887. The plant is in vigorous health, the flower-spike about 5 feet in height, and there have been some sixty flowers on it, which are of a large size, and white. The plant is growing in a border only a few feet from the edge of the lake. *G. D. Vallance, Tresco Abbey Gardens, Isles of Scilly Sept. 3.*

LAGERSTREEMIA INDICA.

According to some writers this is said to be one of the most beautiful of flowering plants in the gardens of India. However this may be, we can say that it is one of the handsomest of plants to be found now in bloom under glass, and it certainly deserves a place in every garden where room can be provided for its accommodation. The *Bot. Mag.* (t. 405), says of it:—"The flowers are produced in panicles or trusses at the end of young shoots of the current year, from 3 to 8½ inches long, and from 6 inches at the base, to 3 inches in diameter. Upon the first opening of the flower it is seen to greatest advantage as the glittering golden-yellow of the stamens makes a dazzling contrast with the richly coloured petals, which are beautifully formed, the limb being gracefully waved and curled, and connected to the inside of the segment of the calyx by a longish narrow claw." Its height is about 10 feet, and it thrives in a house where the temperature never reaches lower than 40° to 45°. It can be grown into good specimens by pot culture, but is seen more to perfection when planted out in a well drained situation, the compost being made up

of strong fibrous loam with some peat and sand mixed with it. In the beginning of the year it should be pruned in rather closely. It may be readily propagated from the young growths if these are taken off when an inch or two long. Our plants always receive plenty of water at the roots, no attempt being made to dry them off; the main thing is to keep the temperature low enough so as not to excite them into growth during the winter months. The genus is not a large one, and only a couple or so of species are in cultivation. There is a white form, *L. indica alba*, which is well worth cultivating. *L. flos-regina* has been termed one of the most beautiful of flowering plants in the world. This attains the height of from 50 to 60 feet. *W. Harrow, Botanic Garden, Cambridge.*

THE BULB GARDEN.

LIFTING AND STORING NARCISSUS BULBS.

WRITING in these pages a week or two ago, Mr. James Walker stated that drying, or, rather, cleaning and storing, *Narcissus* bulbs was an advantage to them, adding that such bulbs would be found to have made stronger and deeper roots in October than those of other bulbs not so cleaned and dried. Now, on p. 189 we have Mr. Dod's experience, that dried bulbs of *N. Bernardii* are with him soft and rotten, or likely to become so when replanted, while bulbs of the same kind left in the soil are perfectly sound and firmly rooted. I have always looked on the storing of *Daffodil* roots as a necessary evil on the part of nurserymen and professional bulb growers, but one which the amateur would do well to avoid. Mr. Walker is such a noted cultivator of these flowers, and so honest and high-minded in his public statements, that his advice is apt to be followed—*longo intervallo*—by many; and I note that "R. D." (p. 180), in writing on "The Florist's Tulip," also follows Mr. Walker in stating that "the bulb which has been kept cool and dry strikes root with far greater force at its natural time for rooting, which is about the month of September." And yet we are told that November 9 is the traditional time for planting Tulips. But even supposing that the dried bulbs of *Narcissi* (or of Tulips, as in "R. D.'s" case) do "strike root with greater force," I fail to grasp that fact alone as a gain in any way. I have never yet heard a physiologist assert that a man or an animal is the better for being deprived of their food past the natural limits of meal-times, even although the tendency generally is to make them eat more "forcibly" in the natural anxiety to make up for lost time. The fact is, that neither animals nor plants are permanently benefited by being starved when they ought to be eating in the one case, or rooting and growing in the other.

The only real point of difference in *Narcissus* culture between myself and Mr. Walker is this question of drying, cleaning, and storing the bulbs. It may be that soil and climate cause me to hold to one view, and he to the other. The soil I should select in which to grow the bulk of *Daffodils* to perfection would be "a meadow to which manure of any kind had been a foreigner for many years," such as Mr. E. Jenkins describes at p. 189. On such a soil bulbs can scarcely require much cleaning, I should say, after being dug in dry weather in July or August.

I see Mr. Jenkins approves, and, as I think, rightly, if any be used, of cow manure. Cow manure is largely used in the light deep sandy soils in Holland, and yet, if I am not mistaken, Messrs. Rozen & Son in their newly published book on the *Cultivation of Bulbs*, make a point of "not cow manure" in their note on the culture of *Narcissus*. If this is so, I should like to ask those noted growers why they place a ban on cow manure, as opposed to other stimulants?

I at once admit that an increase of size and weight is the result of using manure in *Narcissus* culture, but at the same time I should be very sorry to take

it for granted that large and heavy bulbs as so produced were better, all things considered, than are equally large and heavy bulbs producible on deep, rich meadow loams, over gravel (*i.e.*, well drained) and not manured. Indeed, I will go further, and if needs be, prove by examples that the largest of manured *Narcissus* roots or bulbs do not necessarily flower better than medium-sized bulbs grown without manure on a suitable soil. That manured roots are very prone to disease is a well-known fact. The finest flowers of *N. Horsfieldii*, *N. Sir Watkin*, *N. Emperor*, and many other kinds grown here are, I find, not the produce of the very large and heavy "mother or breeder roots," but of medium-sized, solid, and well-ripened globular bulbs before they reach or attain to the breeder stage.

The present season has been so constantly wet and sunless that the bulbs sent out new roots before the leaves had entirely died away, and amateurs will, I think, be wise in deferring the lifting the bulk of their *Daffodils* until next season. As to deep or shallow planting much must depend on the subsoil below. On well drained, gravelly sub-strata, deep planting, and on soils water-logged, or moist below, shallow planting would be most likely to succeed. In the latter cases, raised beds with ample drainage (*i.e.*, deep alleys) between them, would be an advantage. There cannot possibly be any question as to the benefit attending annual replanting in ordinary seasons on all soils where leaves and roots die off simultaneously. The new roots strike out into fresh soil, and obtain a good form, level quality, and a vigour not attainable in any other way. It is the Dutch plan, and is, as I think, the plan for nursery or trade growers in England, and the amateur should at once adopt it in the case of any tender varieties, such as *N. pallidus præcox*, *N. noschatus*, of the Pyrenees, *N. variformis*, or others that do not succeed on the replanting every two or three years system. I have always protested against the drying or storing of *Daffodil* roots in any shape or form. To the trade it is a necessary evil, and even they as growers are now waking up to the fact that early-planted *Narcissi* are the best. It cannot be too strongly or earnestly enforced that the present is the time to plant *Daffodil* roots, or to pot them for indoor culture, and every bulb dried and tossed about in shed or shop until November or even later cannot be expected to flower anything like so strongly or so well as they will if planted now. Amateurs fond of *Daffodils* should insist on August, or at the very latest, September delivery.

There is a little point in Mr. Dod's note at p. 189 which is rather puzzling to me. It is there stated, "As long as the soil is wet the root-action remains active, even after the leaves are quite dead, and enables the bulb to get rid of its superfluous moisture into the soil. It may be so, but after the leaves are dead, I fail to see how evaporation or transpiration can take place through the bulb tunics when they are surrounded by wet soil. My notion is that they do not attract any superfluous moisture after the leaves are withered and fallen. All superfluous moisture, if any, imbibed by the roots before the leaves decay is by them (the leaves) drawn off and returned to the atmosphere in the usual course of transpiration. It is this continued labour being forced upon them (owing to a prolonged season of rain and little sunshine) which has led to the leaves being now, in many cases, as fresh and as green as in April, when last year they had all died clean away by June.

To sum up, my advice to amateurs is as follows:—Plant early, *i.e.*, in August if possible, but not later than September. On dry sandy, or even on deep loamy soils, if well drained, plant deeply, say 6—9, or, on very light soils, 12 inches deep. Use no manures, but replant on fresh land a year or two after it has been manured for other crops. Replant a third of the entire stock every year, just as the leaves die away. On strong, damp soils plant shallow, 2—3—4 inches deep only. On wet subsoils plant on raised beds well drained below; planting

shallow and in the most sunny positions. Delicate sorts should be replanted in fresh soil every year, in July or August. Burnt earth and sea sand are valuable for dressing the soil in which Narcissi are grown, and on wet soils the bulbs should be covered with sand when planted. *F. W. Burbidge.*

NEW OR NOTEWORTHY PLANTS.

PENTSTEMON ROTUNDIFOLIUS (*A. Gray*),
(Fig. 31) *n. sp.**

THIS very distinct species is entirely new to science, and is certainly one of the most important novelties of 1888. Its introduction to our gardens is due to the untiring efforts of Mr. W. Thompson, of Ipswich, whose name has long been identified with the plants of Texas, Mexico, and other North American States. The present plant has flowered with such profusion this year, in spite of the very uncongenial weather, and the flowers withal are so pretty and graceful, that it has only to be known to become a general favourite. Its nearest ally, among those in cultivation at least, is *P. centranthifolius* (Chelone) of the *Botanical Register*, vol. xx, p. 1739. The latter was sent from California by David Douglas, and is described by Bentham in the *Proceedings of the Royal Horticultural Society*, vol. i., as Chelone. It is perfectly hardy, growing well in any good garden soil if fully exposed to the sun. It differs abundantly from the present species in longish ovate lanceolate Valerian-like leaves, and glabrous flowers. In *P. rotundifolius* (see fig. 31) the leaves are coriaceous, orbiculate, entire, the lower ones on longish petioles, those on the stem clasping, the whole conspicuously glaucous. The flower-stem, 2 feet in height, is very graceful, producing abundance of medium-sized brick-red flowers, with pale yellowish throat, anthers slightly exerted, the same length as the style. It has flowered at Kew all through the summer and autumn months. The plants were collected by Mr. Pringle in the State of Chihuahua, Mexico, in the summer and autumn of 1886, and described by Dr. Gray in the *Proceedings of the American Academy of Arts and Sciences*, vol. xxii., p. 307, 1887. In a note attached to the description, Mr. Pringle says he collected it at Mapula, Potrero, and other mountains near Chihuahua, hanging from seams of cliffs, long enduring, apparently flowering for most of the year. The plant may be seen at the present time in the new alpine-house at Kew. *D. Devar.*

CATLEYA HARRISONIANA (*Bateman*) var. REGNIERIAN,
n. var.

The rather short sepals and petals show such a wonderfully clear, warm purple tint as I never saw in the affinity. The lip's side lacinia are light purple outside, yellow in the mid line. The inside is light yellow, with darker keels and a light purple border to the side-lacinia. The mid-lacinia is very deeply plaited and minutely crenulate, and the whole lacinia stands upright and hides the top of the column. It is whitish-yellow, with an orange callous basilar disc, and washed with purple outside. Column white, with a greenish base. This lovely thing was kindly sent me by M. A. Regnier, Fontenay-sous-Bois, Seine, and whose name it may justly bear. *H. G. Rehb. f.*

LELIA XANTHINA (*Lindl.*) AGRAPHIS, *n. var.*

With this species have always appeared specimens without any purple markings on the lip. It has also been sent me lately through my kind old corre-

spondent, Mr. B. S. Williams, from Mr. Wischusen of Wood Green, N., who desired for a distinct variety a separate name, as is the custom now-a-days. The first-named gentleman appears to be very successful in growing this tribe. I shall have the pleasure to write shortly about a Cattleyoid sent by the same gentleman. *H. G. Rehb. f.*

CYPRIPEDIUM CONCOLOR (*Parish*), var. SULPHURINUM,
n. var.

This is stated to be green-leaved. It is a lovely elegant variety, with light sulphur-coloured flowers, without the least trace of a spot. There are only two darker yellow eyes on the disc of the triangular, heart-shaped, very acute staminode. The petals are bent down with much elegance. It was kindly sent me by Messrs. Hugh Low & Co., Clapton. *H. G. Rehb. f.*

CYPRIPEDIUM PAGEANUM, *n. hyb.* (*Gall.*)

This is stated to be the result of crossing *Cypripedium superbiens* (Veitchianum) and *C. Hookerae* (Hookeri of many gardeners). The leaves are nearly glaucous, with dark reticulations. The red hairy peduncle is one-flowered. Bract half as long as the ovary, spathaceous, acute, reddish at the base. Upper sepal elliptical acute, with twenty-three green veins, a few of which are reddish at the apex. Lower sepals much smaller, not equalling half the lip, oblong acute, with green veins, two of which are red at the apex. Petals deflexed, ligulate acute, ciliate, with green veins on a whitish ground that turns in the light to a reddish colour in the anterior third. There are numerous Indian-purple spots on the basilar and median portions. Lip in the way of that of *Cypripedium superbiens*, but narrower, two-horned at the mouth of the sac, dark brown, ochre in the mid-line. Staminode transverse, with two inflexed horns and a small apiculus light green, with the usual dark reticulation in the middle.

It was raised by Mr. Page, an ardent orchidist, at Bougival, near Paris, and whose name it duly bears. I had it through the kindness of Messrs. Seeger & Tropp. *H. G. Rehb. f.*

FLORISTS' FLOWERS.

AUTUMN BLOOM OF AURICULAS.

I THINK it not unlikely there will be, as one of the results of the moist cool June and July, a good deal of autumn bloom from Auriculas. The plants appear to have made, under the favourable condition of coolness, a continuous summer growth, and the crowns are plump, green, and full of life. I am keeping my own plants pretty dry at the roots, at the same time not allowing them to flag in any way, as I think this is disastrous in its effects. I am potting later than usual, in the hope thus to check autumn blooming. Seedlings have grown vigorously—the strongest are beginning to bloom. By doing this in the autumn it enables one to throw out all the inferior types. Anything promising should be marked, and the test of spring flowering applied. I find that the autumn promise and character is occasionally reversed when the spring bloom is put on. But a second year's flowering should be tried before anything of promise is finally rejected. *R. D.*

THE PINK.

The laced varieties are not grown quite so much as they used to be a quarter of a century ago, when Pink shows were popular. It is a distinct border plant. There are not many raisers of seedlings now, but Messrs. Hooper & Co., of Bath, have raised some very distinct varieties, of which they sent blooms a few weeks ago. One of them had flowers as large as those of a Carnation. They were well laced and distinct in colour, and this is saying a good deal, for Pinks have but little variety amongst them. The young plants propagated from pipings put in about the end of June should now be well rooted, and they ought to be planted out in the beds or borders where

they are to flower as soon as the ground can be prepared for them and they are strong enough. If the plants are small 9 inches apart is a good distance; large plants may be allowed a foot each way. It is a good plan to have the plants well established before the winter, as they will throw up stronger flower-stems the following season. They like rich soil, not too heavy. In fact, they are not so fastidious as their near ally, the Carnation, and will succeed admirably in any ordinary garden soil. The plants are strong enough to plant out about the middle or end of September.

THE FORCING PINK.

Varieties of this section are more readily propagated than those of the laced type. I think very highly of the pure white variety with prettily-fringed flowers, grown by the acre in the fields round about here to supply cut flowers for the London market. The plants are torn into pieces by the hand, and planted in rows in a rough-and-ready manner on ploughed ground. This variety has a very sweet Clove-like scent. For forcing and garden culture I like the more delicately-constituted Lady Blanche. It has pure white well-formed flowers, and is admirably adapted for forcing purposes. I have not yet seen any of the purple-coloured varieties to surpass Lord Lyons. The flowers are rich in colour, and, like Lady Blanche, they have long pods that do not burst with the opening flowers. To obtain good-flowering clumps, the cuttings of these should be put, during the months of April and May, in a forcing-house or hotbed. When well rooted, they may be planted out a foot or more apart in the open garden, and, if they are intended for forcing purposes, must be planted out in light rich soil to increase in size and vigour during the summer and early autumn months. About the first week in October they may be lifted, with plenty of roots attached, and be potted into 6 or 7-inch pots, according to the vigour of the plants. *J. Douglas, Ilford.*

CARNATIONS ADMIRAL CURZON AND SARAH PAYNE.

It is sometimes said, but not always with reason, that the continual propagation of any one variety of florists' flowers has an inevitable tendency to wear it out and cause deterioration. This has frequently been stated of the Carnation, and because the florist grows his plants in pots in cold frames during the winter rather than expose them to all the rigours of the winter in the open air, he is accused of making a hothouse plant of it, and inevitable weakness and decay are asserted as taking place. This statement is always made without due consideration. At the exhibition of the National Carnation and Picotee Society, held in the Drill Hall in connection with the meeting of the Royal Horticultural Society on July 24, two flowers were exhibited—one, Easom's Admiral Curzon, scarlet bizarre, sent out forty-three years ago; and Ward's Sarah Payne, pink and purple bizarre, sent out forty-one years ago. If the statement made at the commencement of this paper is correct these two varieties, debilitated beyond measure by hard propagation during this long period, ought to have disappeared from cultivation years ago. But they are grown and shown to-day as vigorously and of as fine quality as they were over forty years ago.

Admiral Curzon is still pretty well at the head of its class, and although its supremacy may be challenged by Dodwell's Fred, Dodwell's George, Barlow's Robert Houlgrave, and Dodwell's Robert Lord, it will yet be grown and exhibited for years to come. In the second edition of his book on the Carnation Mr. Dodwell states that "It is pleasant to record the Admiral is yet alive to us and worthy of admiration, as in the days of its earliest youth. Wherever Carnations are grown and shown there is Curzon—always to the front, indeed, quite seven times in ten the best flower of the exhibition. What a beautifully shaped petal—smooth, gently cupped, and of good substance. Its colours are rich, bright, well delineated, and strongly contrasted. Its outline is as unbroken as any flower I have ever cultivated, and its form good. It is of medium size and a good

* *Pentstemon rotundifolius*, *n. sp.*—Species insignis (e grege *P. centranthifolii*?), glaberrimus, glaucus; caulibus basi lignosis apertis-ramosis paniculato-plurifloris; foliis crasso-coriaceis orbiculatis integerrimis (majoribus sesquipollicaribus), imis in petiolum subulatum contractis, ceteris acrote sessilibus ramulibus parvis, floralibus minimis subcordatis; pedunculis pedicellisque gracilibus; sepalis ovalibus lin. 2 longis; corolla minutata pollicari tubiformi apice subequaliter 5 loba, lobis lato-ovalibus (lin. 2 longis), fauce genitalibusque glabris; antheris post dehiscenstiam explanatis; capsulis lato-ovatis lin. 2—3 longis pedicello arcte ecurvato pendulis. *Asa Gray*, Bot. Contributions, issued March 4, 1887. *Proc. Amer. Acad.*, No., vol. xxii.

grower." And this is written after forty years' culture by the most successful raiser of the day. I should not be surprised if it is grown for another twenty years to come. Sarah Payne is, as before stated, a pink and purple bizarre; and although the class has received of late, and is yet receiving, fine additions, it is still largely shown. Thirty-five years ago Mr. Dodwell described it as follows:—"For refined texture and colour it leaves nothing to be desired. Well done and at its best it would grace the finest stand of flowers imagination could paint. The petal is of medium breadth, and very smooth; colour delicate, sometimes deficient of bizarre, but always rich; the white exquisite." To-day Mr. Dodwell endorses this by stating that "the variety lives and fully supports its old renown. In its way, I believe, as with Admiral Curzon, it will never be surpassed." *R. D.*

The aspect of many Rose gardens does not at the present time present a scene of loveliness. Mildew and orange fungus have been very prevalent this month (August), and the consequence is that most of the bushes are partially denuded of the leaves; for the effect of both of these pests is to cause the leaves to fall. Looking at my own garden I find green tops to the shoots, but lower down the leaves are all gone. I know that the advice is often given, not to leave the dead foliage about, as it may propagate the malady for another year. The same advice is given as to the Potato haulm, but I have never yet learned that in either case it acted as a preventive; however, if people think it may be of use it does no harm, and at any rate prevents an untidy appearance.

Thinning Out the Shoots.—I believe this to be an excellent plan. The general plan of pruning now

plan, whether he be an exhibitor or not, will have cause to regret it; moreover, he can leisurely do it, leaving only the pruning, in its strictest sense, to be done in the spring.

Staking.—Wherever Roses are well grown, and in suitable soil, they will have thrown up by this time long and vigorous shoots: some of these will carry a bloom at the point, and others not. There are some varieties which always bloom in the autumn, and others only occasionally so; but whether these shoots are flowering or not, they ought to be staked and tied, and in doing this care should be taken that the stake be as long as the shoot, or otherwise it is very apt to get snapped off. When the time and trouble necessary for this cannot be given, in default of a better plan the shoots may be somewhat reduced in height, but in every way staking is the better plan.

Manure.—It is too soon to think of putting manure on the beds, but it is not too soon, or too late, to give liquid-manure. It is generally believed that this is only of use for the development of the bloom, and that when that is over, it may be abandoned, but this is not the belief of many Rose growers, who prefer more liquid and less mulching. Thus, I was at a celebrated Rose grower and exhibitor's the other day, who rejoiced in a large tank well-filled with astounding *eau de Cologne*, which he told me would, in the course of a few weeks, be on his beds, a good dose being supplied every week; his contention being that the autumn rains would wash it down to the roots, increase their action, and so communicate fresh vigour to the plants. The Roses are gross feeders, and will take much strong stuff.

Alterations.—It is of course too soon to make alterations, but not too soon to project and make arrangements for them. It will by this time be pretty evident to the Rose lover what flowers he will discard, and what varieties he will introduce into his garden, for the knowledge he has picked up in various ways during the season will now be brought into practice; only let him beware of thinking that, because he sees a beautiful Rose at an exhibition he ought to procure it; let him enquire about its constitution, and if possible see it growing; for there are some, to grow which only entails disappointment. If you read in any catalogue "moderate" or "does best on maidens" you may rely upon it that, unless you are a grower of some experience, you had better "have none of it." There are a few things to be borne in mind in this selecting. If you live in a cold climate or unsuitable soil, do not get your Roses from a warmer climate. You will get, no doubt, magnificent plants, but they will feel the change, and bring you disappointment. Then about the Manetti—the seedling Brier or Brier cutting is gradually pushing the Manetti out of the field. Exhibitors will not discard it, as it pushes the Roses into bloom in time for early shows; but the amateur will do better to avoid it. It is very apt to throw up underground shoots, and these are too often looked upon as belonging to the Rose itself and are left on, and so ultimately overpower it, and a flourishing bush of Manetti replaces the Rose. Some say, if you can do so, select your own Roses, and mark them in the nursery; I hardly think that this is useful. Rose nurserymen are mostly careful to send out good plants, and I think that they may be safely trusted; still, if this is to be done at all, it is much better to wait until planting time has arrived, and then not only select but bring away your plants. [The Manetti cuttings should be made and prepared like Gooseberry cuttings—that is, all the buds visible on the part which will be under the soil should be taken out. *Ed.*]

The Rose grower need not spend an idle autumn; he has to keep his beds free from weeds, to watch for all suckers and underground shoots, and cut them away, and to see to the various matters mentioned now. He will not mind the trouble, for he knows no excellence is to be attained by any royal road, but by earnest and painstaking efforts. *Will Rose.*

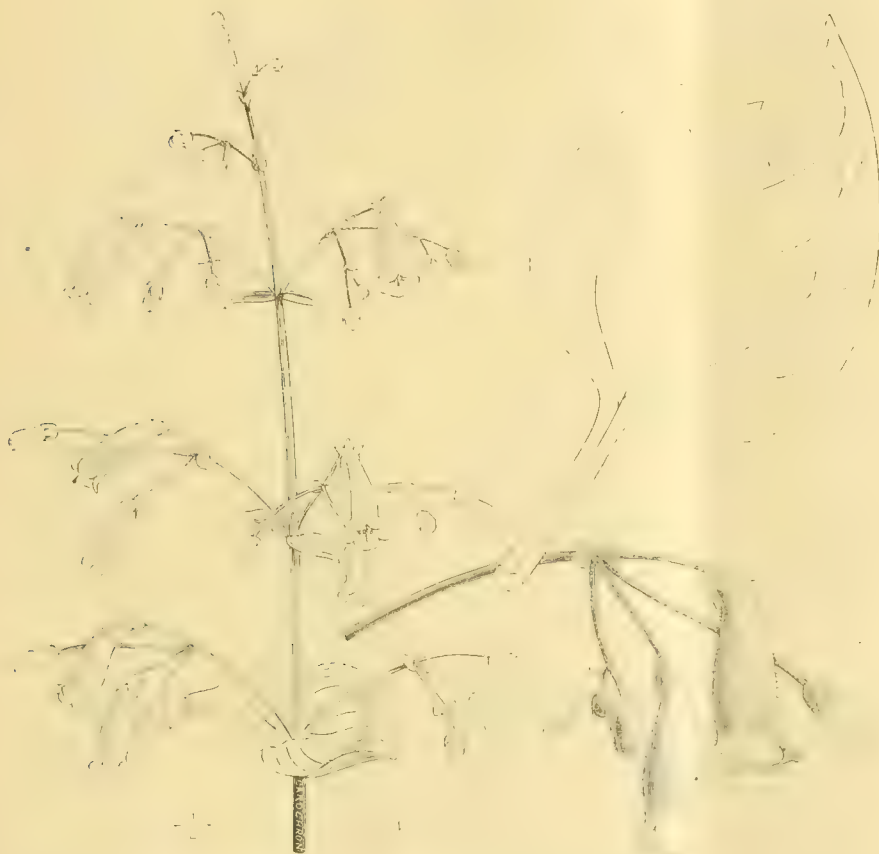


FIG. 31.—PENISTEMON ROTUNDFOLIUS: HARDY PERENNIAL: FLOWERS DULL RED. (SEE P. 264.)

ROSES.

AUTUMN WORK IN THE ROSE GARDEN.

THERE is a pretty strong feeling amongst the general public who grow Roses, that there is little to be thought of with regard to them after the blooming season is over, and that they may be safely left to themselves. Nothing can be wider from the mark than this, whether a grower be an exhibitor or not. I have always held that as the exhibitor has by experience gained the knowledge of the system by which he believes he can secure the best flowers, so the lover of the flower who does not exhibit may very safely follow out his plans, even if he does not carry them out to their fullest extent. The exhibitor does not leave his Roses to themselves when the season is over, but wisely takes such steps as may ensure him, so far as he can, a good bloom for the next season.

adopted is that of thinning out the old wood, and depending on the vigorous shoots of the present year for the bloom of next. Now that old wood is of no use, the general plan has been to leave it until the spring, and at the time of pruning cut it out; but why leave it until then? It will absorb a certain amount of the vigour of the plant which might well be spared; in fact, why not do with it as we do with our Raspberry canes? We know that the fruiting canes of the present year are of no use to the plant, and so we cut them away, and leave the new canes to get more light and air, to absorb the vigour of the plant, and to ripen better for next year. I believe that it will be equally wise to treat Roses in the same way. Cut out all the wood that you could cut out in the spring, and let that on which you depend for next season have a better chance, more and more light, more of the sun's ripening influence, and all the vigour that the plant can give them. I feel convinced that no one who adopts this

ORCHID NOTES AND GLEANINGS.

SEEDLING HYBRID ORCHIDS AT OAK-WOOD.

It seems but yesterday since the first Orchid Conference was held under the auspices of the Royal Horticultural Society at South Kensington, but it is more than three years ago, as it took place on May 12 and 13, 1885.

The paper read by Mr. H. J. Veitch, of Chelsea, on "The Hybridisation of Orchids" on that occasion no doubt stimulated many amateurs who had begun the work of hybridisation, and will have induced others to take up this interesting branch of occupation. Mr. Veitch's paper was published in the *Journal of the Royal Horticultural Society*, vol. vii., No. 1, 1886; and it may also be interesting to remark that just forty years previously an even more remarkable paper on "Hybridisation amongst Vegetables" was communicated to the same society by the Hon. and Very Rev. William Herbert, LL.D., Dean of Manchester; and published in vol. ii. of the *Journal*, 1847. The learned Dean had laboured assiduously in hybridising almost every class of hardy and exotic plants, and, amongst others, hardy Orchids and Ophrys, also *Cattleyas*, *Bletias*, &c. A good botanist and practical gardener himself, he strove to instill into the minds of gardeners the importance of taking correct observations of the work in which they were engaged. The whole paper, which occupies fifty-four pages of the *Journal*, is well worth careful study. In the passage referring to seedling Orchids he says:—"An intelligent gardener may do much for science if he keeps accurate notes of what he attempts, and does not jump at immature conclusions. . . . The cultivator has the test of truth within his scope,—

'Examenque improbum in istâ
Castigat trutinâ;'

and, far from being an evil, I look upon it as a great advantage, because it will lead the industrious and intelligent gardener to take a higher view of the objects under his care, and to feel his own connection with science, and it will force the scientific to rely less on their own dictation, and to feel that they must be governed by natural facts, and not by their own preference." Evidently at that time the botanist laboured in his study over dried specimens, and tried to lay down his own rules for the separation of genera, and the gardener toiled on, little heeding the work of the botanist, and seldom caring to keep any correct account of his work. Herbert himself combined the two, and he tried, not unsuccessfully, to induce others to do likewise.

Amongst modern amateurs I do not know any one who takes such intense interest in raising seedling Orchids as Mr. N. E. Cookson, of Oakwood, Wylam-on-Tyne, nor one who has been so successful. I visited his garden rather more than two years ago, and he had raised numerous seedling *Cypripediums* and also a few *Calanthes*. He had also been successful with *Zygopetalums*, and told me at that time that he would advise beginners to start with the last-named genus, as being the easiest to raise. *Dendrobiums*, *Cattleyas*, *Phajus*, and other beautiful Orchids, have been hybridized with results that are worthy of record. Mr. Cookson is fortunate in having a gardener almost as enthusiastic as himself, who spares no pains to bring to a successful issue the attempts of his employer.

In a short conversation with Mr. W. Murray, the gardener, he gave me several useful hints of a practical nature on hybridising, which may be summarised as under:—

1. Hybridising the flowers, which is a simple process, and consists in removing the pollen masses from under their thin covering at the top of the column and at once attaching them to the glutinous mass on the column of the flower intended to bear seeds. This is lower down, and at the front. The sticky substance is placed exactly where a bee or other insect would push its head when trying to

extract the nectar from the flower. When the pollen has taken effect, the petals close over the column, Mr. Cookson says, to protect it from wet—a wise provision of Nature. The flower soon fades, and the seed-pod rapidly swells.

When the capsule has arrived at maturity it splits open, and the seed would be scattered unless it is cared for. To ascertain if the seeds are good a few are placed in vinegar, and under the microscope the germ can be seen in the form of a black speck. Some species of Orchids will ripen their seed-pods in three months, and in the case of *Calanthes* I saw nice plants from seeds, and the flowers from which they had been obtained were fertilised only eight months previously. *Cattleyas*, on the other hand, are very slow. The seeds are seldom good if the capsules ripen under twelve months. They sometimes take as long as sixteen months to ripen good seeds.

2. A good seed-bed is of the utmost importance, and, perhaps, the seeds vegetate best if sown amongst the moist growing sphagnum and fibrous peat, charcoal, and potsherds, in which the parent plant is growing. Perhaps it is best to have indifferent plants of varieties of little value to sow the seeds upon. The compost ought to be kept to an uniform degree of moisture until the plants appear. Mr. Cookson approves of planting them out singly in very small pots as soon as the plants can be handled. After this process they are again kept moist; but not at any time saturated with water, or allowed to become dry. Mr. Cookson has had a great success with *Dendrobiums*; not one had been raised two and a half years ago; now there are 1700 plants from twenty capsules. In fact, only twenty-two capsules have been produced, and twenty of them gave a plentiful supply of good seeds. The plants also grow very rapidly; for instance, a seedling, the production of a cross between *D. Wardianum* and *D. aureum*, has made three growths since it was pricked out on March 13. No less than eighty different crosses of *Cypripediums* have been made. Of *C. Sanderianum* and *C. Veitchii* there are good plants. Also of *C. niveum* crossed with *C. Stonei*, and *C. Stonei* with *C. Farrieanum*. Mr. Cookson has also found that the produce of weakly parents often give very vigorous offspring. *C. Veitchii* (superbiens) and *C. lavigatum*, for instance, are not robust growers, but their offspring are. A remarkable instance of this may also be found in the case of *C. grande*, raised in Messrs. Veitch's nursery at Chelsea, by crossing *C. Roezlii* with the pollen of *C. caudatum*. It is the most vigorous of all known *Cypripediums*. It has also been found that all *C. Lowianum* crosses are unhealthy or diseased in a young state, but the plants that survive grow out of it.

Amongst *Cattleyas* plants have been obtained of *C. Trianae* crossed with *Lælia harpophylla*, and *vice versa*.

Masdevallia crosses have also been obtained, and it was noteworthy that plants raised from crossing *M. tovarensis* with *M. chimara* grew with astonishing rapidity. Seeds sown in March, 1887, produced plants, on one of which I counted ten leaves. Mr. Cookson was the first to obtain hybrid *Odontoglossums*, as he stated in the *Garden* for February 10, 1883, but all the plants perished. Bigeneric crosses have also been named, and plants obtained, but it is best to wait until the flowering of the plants verifies the expectations that have been formed. Capsules may be obtained containing good seeds of such crosses, but it has been found when the plants flowered that the progeny were exactly like the seed-parent, showing that the flowers had in some way been fertilised with their own pollen. Others besides Mr. Cookson are working in this field. I have done a little myself, but am free to admit that I have not yet seen anything like so much progress made by any amateur as has been made here during the last five or six years. *J. Douglas*.

MILTONIA MORELIANA.

The finest variety we have seen of this superb *Miltonia* is in the Kew collection, and it is now bearing several flowers. It is a variety of the variable *M. spectabilis*, and very similar to that

figured in the *Botanical Magazine* as *M. s. var. atrovirens*. Each flower is about 4 inches across, full, and of a deep port-wine colour, shaded with rose. The flowers have the excellent quality of lasting more than a month on the plant.

PHALÆNOPSIS AT KEW.

The display of flowers of *Phalænopsis* in the Orchid-house at Kew has for some weeks been exceptionally fine, and is still good. The majority of the flowers are those of *P. grandiflora*, and some of the varieties are large and perfect in shape. We notice that the plants are grown in tall cylinders, and the healthy appearance of the leaves shows that the treatment is the right one. A fine example of *P. Mariae* is also in flower. *W. W.*

ORCHIDS AT CAMBRIDGE LODGE, CAMBERWELL.

Most Orchids are well done at Cambridge Lodge, the residence of R. J. Measures, Esq., but some genera better than others. In the opinion of that clever and observant Orchid grower, Mr. Simpkins, who has charge of the collection, *Cattleyas* generally, and many *Lælias*, are good plants for the smoke-laden neighbourhoods; *Vanda tricolor*, and the varieties of *V. suavis*, are almost as manageable; *Odontoglossums* and *Oncidiums* thrive, and the favourite of the hour, the *Cypripedium*, is, if liberally treated, the most grateful and satisfactory of all. A glance round the collection shows all these and many other species in large numbers in robust health. It is said that the foggy atmosphere of London does not affect the health of the plants, if properly managed, but plays havoc with the flowers in the winter, and especially those of *Cattleya Trianae*—but not every year.

Were there not a flower expanded the *Cypripediums* in the two commodious houses devoted to these plants would be a pleasant sight by the endless variety of beautifully marked leaves—green, marbled, blotched silvery-white, and other delicate shades; the under-sides of the leaves in many cases tinted dark crimson or brownish-purple. Few plants amongst those grown for the beauty of their foliage can excel in the variety of leaf-marking the large specimens, *C. marmorophyllum*, *C. javanicum*, *C. Dayanum*, *C. Veitchianum*, the varieties of *C. Godefroyae*, and others, as grown at Cambridge Lodge. But beautiful though the varied foliage is, there is no lack of flowers the year throughout. At present a large number of rare species is in bloom or bud, especially noteworthy being *C. Ashburtonia expansum* ×, which, with its circular and beautifully spotted dorsal sepal and larger flowers, is immeasurably superior to the commoner form, which is also in bloom beside it; *C. gemmaiferum* × is handsome in flower and leaf; *C. javanicum superbiens* ×, a stately plant; *C. Charles Canham* ×, a fine large flower; *C. marmorophyllum* × and *C. selligerum majus* ×, two excellent varieties; and the *Sedeniflorum* section, which seem to be perpetual flowering, make a beautiful and varied show, being represented by large specimens of *C. Sedeni* ×, *C. calurum* ×, *C. Ainsworthii* ×, *C. cardinale* ×, and *C. porphyrium* ×, many others being in hand.

In the large class comprising the varieties of *C. barbatum* there are likewise several in bloom, the largest and richest-coloured being *C. b. grandiflorum nanum*, and the prettiest of the light-tinted ones *C. b. pulcherrimum*, which has flowers exactly like *C. callosum*, but of the *barbatum* form. *C. Godseffianum* ×, and *C. Germinyanum* ×, two *C. hirsutissimum* crosses are also in fine condition, as also many hybrids which have not yet bloomed.

The large and varied collection of *C. insignis* occupy a span-pit in summer, as their flowers are found to come better when so treated.

The *Cattleyas* and *Lælias* are in splendid condition, and especially the large lot of *Lælia elegans* 'Turneri' varieties, some of which are still in bloom. The *Odontoglossums* and *Oncidium macranthum* and *O. undulatum* and others of that class are in fine condition; the house full of *Vandas* as good as could be desired, and that of *Phalænopsis* in a sound

and vigorous state, and far beyond the average state of these plants in other collections. Many plants of ordinary interest are in bloom; and others, representing rare things seldom seen, are two good specimens of the handsome *Miltonia Peetersiana*, supposed to be a natural hybrid between *C. Clowesii* and *C. spectabilis* Moreliana; its rosy-purple flowers are much like small *M. s. Moreliana*, but they are borne several together on upright spikes. The pretty *Saccolabium Hende sonianum*, with pink and silvery-white flowers, and the rare scarlet and crimson *Renanthera matutina* are also in bloom, as well as a vigorous plant of that richest-coloured and rarest of Cattleyas, *C. Hardyana*, a supposed natural hybrid between *C. aurea* and *C. gigas*.

THE CALABRIAN PINE.

PINUS PYRENAICA (VERA).*—(See fig 32, p. 268).—The *Pinus pyrenaica* of English plantations is now generally considered to be a mere form of the very variable *Pinus Laricio*, or Corsican Pine, and recognisable among other things by the deep orange colour of the young shoots. But there is another plant which has also received the name of *pyrenaica*, and to which the appellation should strictly be confined. This is a tree which, on the authority of Parlatores, is a native of the forests of Central and South-Eastern Spain, the mountains of Calabria, the islands of Cyprus and Crete, the Caramanian Taurus, Syria, and Bithynia. Not unnaturally, it has received a variety of names, as generally happens when botanists describe a specimen from one locality without having the opportunity of detailed comparison of specimens from other regions. For our own parts, we have adopted the synonymy given by Parlatores, but for the special synonym of *P. brutia* we have had personal opportunity of making the necessary comparison.

The tree in question has been confounded with *P. pinaster*, as in Veitch's *Manual*, but from which it differs considerably, with *P. Laricio*, and with *P. halepensis*. M. Naudin, who kindly furnished the specimen (without a name) whence our illustration (fig. 32) was taken, warned us that this was a species "*qu'il ne faut pas confondre avec le P. halepensis*." Gay, in a note in the Kew Herbarium, says it differs from *P. halepensis* in its leaves, which are twice the length of those in *halepensis*; in the cones, which are oblong, not ovoid; and in the scales of the cone, which are depressed, not raised in the centre. We may also add that the stems are less glaucous, and the cones are on much shorter stalks, spreading, not deflected, broader at the base, and with flatter apophyses. Lambert unfortunately confounded both *halepensis* and *Laricio* under his *maritima*. He subsequently corrected the mistake in part, so that t. ix., vol. i., ed. 1, folio, represents *Laricio*, though called *maritima*. His t. x., vol. i, shows a detached cone with prominent apophysis = the *P. halepensis* var. *B.* of Tenore, while the cone on the branch has a flat apophysis, like *brutia*. We transcribe our notes taken from M. Naudin's plant, which we have compared with the specimens in the Kew Herbarium and Museum, and in particular with the type specimens of *P. brutia* of Tenore.

Bark grey. Herbaceous shoots green, naked at the base, marked with prominent pulvini.

Leaves two, in a very short sheath, $4\frac{1}{2}$ inches long, linear-pointed, concavo-convex, serrulate, with stomata on all sides. In section the leaf is boat-shaped with an epiderm of cuboidal cells, beneath which is a

very thick layer of hypoderm (which must give great resisting power to the leaf and adapt it to windy localities). The leaf substance consists of sinuous cells filled with chlorophyll; through its centre passes the double vascular bundle surrounded by an elliptical-bundle-sheath or endoderm of oval cells filled with starch, and enclosing a "pericycle" of cellular tissue with masses of woody cells separating the two fibro-vascular bundles. Two resin canals traverse the leaf substance just beneath the hypoderm on the upper surface. This structure is identical with that of Tenore's *P. brutia*, and of Visiani's *P. Paroliniana* and of Kotschy, n. 420. It is also the same as *P. halepensis*, but differs from that of *P. pinaster* and *P. Laricio*, with which it has been confounded, but from which the mere inspection of the leaf-section will enable the observer to distinguish it.

The male catkins are solitary (quere always so?) erect, oblong, about half an inch long, orange-coloured, anther-crest orbicular crenulate.

Cones lateral, solitary, or in groups of three (Tenore's specimen, showing a large number in a cluster, is accidental), each shortly stalked, spreading more or less horizontally; ovoid, conic, acute, rich shining chestnut brown, $3\frac{1}{2}$ inches long by $2\frac{1}{2}$ in breadth. Scales woody, apophyses rhomboid, flattish, with a slight transverse ridge and a rather short pyramidal umbo. In the fully-developed cone the upper angle of the scale is often prolonged into a short blunt process.

What follows is taken from the *Pinetum Woburnense*, p. 27:—

The Calabrian Pine "bears a strong similarity to the *P. maritima* of Lambert, as well as to the *P. halepensis*, but is readily distinguished from either of these species by its much longer wavy leaves, which vary from 3 to 5 inches in length, whilst those of the above-mentioned species are seldom above half the size. The cones of the *P. brutia* are also quite [nearly] sessile, growing in large clusters [or singly] surrounding the stem. A splendid figure of this is given in Mr. Lambert's third volume of his *Genus Pinus*, in which he says that 'Sprengel has even referred it to *P. pinaster*, not even allowing it the rank of a variety; but no two species can be more distinct; the leaves in *pinaster* are straight, rigid, twice as stout, and disposed in interrupted verticils; and the cones are double the size, with the scales elevated and angular. The specimen represented in the plate was obligingly communicated to me by the Hon. William T. H. Fox Strangways, Under Secretary of State for Foreign Affairs, who received it from Professor Tenore.' It, however, appears to me to be more nearly allied to the *P. halepensis* than to any other of the species. The Woburn collection is indebted for this new and valuable Pine to the Right Hon. the Earl of Mountnorris, who, I believe, was the first that raised it from seeds in this country, and kindly sent a couple of plants of it, along with a valuable collection of other plants, to Woburn. It is a native of Calabria (the ancient Brutium), where it attains a considerable size, and produces timber of a very superior quality."

This tree has been highly spoken of for the purposes of reforesting the Karst and the Adriatic coast. *M. T. M.*

CULTURAL MEMORANDA.

GAILLARDIAS.

THESE are among the most showy of plants, and several of them are of great value for growing in borders, as not only are they striking in the size and colour of their gorgeous flowers, but they last a long time when cut. The finest of all the varieties that I have yet seen is the true *G. maximus*, which I met with a few days ago in the grounds of Mr. Thompson, of Ipswich, where it is grown for seed, and the difference between it and *G. grandiflora* could be seen at a glance. The last-named, however, is a noteworthy kind, and has long been a favourite with many, and no garden of any pretensions should be without the one or the other. *G. grandiflora* is said to be a hybrid between *G. picta* and *G. cristata*; and besides this there are now several garden crosses, and as the plants breed and seed freely, many more may be expected, but they will have to be good to surpass those mentioned above. Although these *Gaillardias* are hardy perennials, they will not

succeed in all soils or live through all winters, and it is a wise plan to treat them as annuals or biennials, and raise fresh ones frequently, as that is the best way to make sure of them being vigorous, healthy, and strong; or they may be kept satisfactorily by striking fresh ones from cuttings, and the time to do this is in early autumn, when they may be put in under handlights, or in pots, and protected by being shut up in a close frame, in either of which places, if syringed or damped occasionally, they will soon root, but should not be planted out till the spring. *J. S.*

ONOSMAS.

There are two varieties of this Boragewort that are highly deserving of cultivation, the one being *O. tauricum*, the "Golden Drop," and the other *O. coccineum*, the last, as its specific name implies, bearing bright red flowers, which, though not large, are very showy and telling. The first has long tubular-shaped blossoms of a lovely citron or pale yellow, and these are borne on stout drooping stems from which they depend and make a fine show. The best situation for growing these *Onosmas* is on an elevated position such as a rock garden affords, as there they may be seen to advantage.

The easiest way of propagating the first-named is by means of root cuttings, which if put in in sharp sandy soil and kept close under a handlight will soon root. *J. S.*

NURSERY NOTES.

BERGHOLT, COLCHESTER.

MR. FRANK CANT, of Bergholt, and Mile End Nurseries, Colchester, the winner of the Trophy of the National Rose Society this year, has attained such signal success in the various tournaments of Roses which have been held in the metropolis and the provinces in the last few years—and this, too, in face of the powerful opposition of the longer established growers—that we were very pleased to accept an invitation to run down and see for ourselves what manner of place it was, and to discover, perchance, the grounds for the excellence of his flowers. Truly the prominent idea with us before the visit was made was that the Roses would be found to occupy a cosy warm sheltered position, comparatively protected from the ills to which Roses so often fall victims. That idea was soon dissipated on approaching the nursery, for a more thoroughly bleak, wind-swept spot could scarcely be found elsewhere. The house at Bergholt is a new one, facing, I believe, S.S.E., without a plantation or anything higher than a well-kept hedge for miles in that direction; therefore all cosiness for Rose or man is out of the question when cold weather prevails.

The main quarters of the Rose stand a few feet higher than the house, but are as little sheltered as that, and form part of a large field at present under farm crops. One-half the area of Roses is level land, and the other has a gentle slope towards the south; but there was nothing to indicate that the plants on the slope have any advantage over their brethren on the level. The general goodness of the flowers as observed in exhibition stands, and the robustness of shoot and leaf remarked at the nursery, are evidently due to soil and manuring. The former is a heavy yet friable loam—terrible stuff to trample about upon after rains, containing numerous stones, and not of the kind which gives out after a short period of sunny weather. Nor does it appear that rain such as we have this year experienced has had any detrimental effect on the plants; excepting that it would seemed to have brought about an unexpected and unusual denudation of the foliage itself—a result that would rather seem to be appropriate to a hot dry summer than a dripping one. On Teas many fine blooms were open, and to come, and the growth of the young shoots did not seem to be checked in any great degree by the untimely fall of the old foliage.

The nursery has much of the appearance of a new enterprise; the dwelling-house itself stands somewhat back from the road, and is flanked and

* *Pinus pyrenaica*, Lapeyrouse, *Histoire Abrégée des P. des Pyrénées*, Ac., p. 146 (1833); Parlatores, *Carrière*, Karl Koh, *Dendrologie*, ii. (1873), 295; Wilkonn and Lange, *Prod. Flor. Hesp.*, i., p. 19; Wilkonn, *Fürstliche Flora* (1875), 296; Engelmann, *Revision*, p. 180; not of Veitch, *Manual*.

P. brutia, Tenore, *Sylloge Plant. Vasc. Flor. Neapolit.*, (1831), p. 47; et *Flor. Nap.*, v. p. 266, t. 200 (1835); Lambert, *Enligner*, *Carrière*, Gordon, Christ, Koch, London, *Illustration* (1835).

P. Loricata, Carrière.

P. Pallasi, Parolin (1843).

P. Paroliniana, Webb herb. et. Carrière, Visiani, *Illustr.*, Nov. Ort. Bot. Padua, iii., p. 7, t. 1.

Synonymus, ex Parlatores, in DC. *Icon.*, xvi., *sect. post.*, fasc. ii. (1868), p. 384.

fronted by a few young ornamental trees, and some few flowering plants are dotted about, but you soon begin to find that everything is subordinated to the Rose, and it is this determination to put the Rose culture before everything else that has enabled Mr. F. Cant to get into the very front rank as a grower of the flower. A few yards away on the east of the dwelling there are wide borders filled with robust Teas worked on the seedling Brier or cutting-struck Brier. These plants are never lifted and never protected in any way, and yet there were no gaps in the rows but those caused by digging out to complete orders, and the shoots made were exceedingly robust. Many of the varieties possessed beautiful flowers, the majority of which would not disgrace an exhibition in June. The following are a few of such:—*Souvenir d'un Ami*, *Souvenir d'Elise*, *Rubens*, a flower which has been fine all through this season; *Perle de Lyon*, *Niphetos*, *Marie van Houtte*, *Madame Willermoz*, *Devoniensis*, still finding admirers for its peculiarly agreeable scent; *Jean Ducher*, a prodigious flowerer—so many flowers appeared that they could not expand, and required to have the buds reduced in numbers.

A large border was wholly filled with *Maréchal Niel*, in standards and half-standards—these plants were still bearing flowers and had borne enormously. That fine variety, *Ulrich Brunner*, than which no other Rose has been seen so good this year, does well here; it is a robust grower and possesses a good habit. In these borders there were fine blooms of *Rosieriste Jacobs*, a beautiful crimson Rose; of *Catherine Mermet*, also excellent this season; and of *Duchess of Edinburgh* (Veitch).

The Rose quarters previously mentioned as lying behind the dwelling-house cover at present an area of $7\frac{1}{2}$ acres, and contain about 35,000 dwarf Roses, mostly worked very low on the Brier and Manetti, the remainder—as many more—would be represented by standards, half-standards, and climbing Roses. Nothing could exceed the thrifty look of the stock here, firm shoots, short-jointed, and a habit of great compactness. It is not our intention to do more than select a few of the new and newer varieties observed in flower at the time. *Vicomtesse Folkestone* is a showy, light-coloured flower, of good form, and a strong grower. It is erroneously called by some persons a hybrid Tea, but the foliage is identical with that of most hybrid perpetuals, and would seem to point to its belonging to that section. The *Bride* (Henderson, New York, U.S.A.), is a white *Catherine Mermet*, a sport from which variety it is; *Countess of Pembroke*, *Earl Dufferin*, *Miss Ethel Brownlow*, a Tea-scented Rose, and *Lady Helen Stuart*, the last three raised by Messrs. A. Dickson & Son, Newtonards, have done well, and are already much in request. For fuller particulars of these and other new Roses of the year see our issue for August 25 last, p. 207. It may be stated as Mr. Cant's opinion that *Miss E. Brownlow* will take the place of *Madame Cusin*, which it much resembles in colour.

Comtesse de Nadaillac is a Rose which finds a ready sale. *Madame Eugene Verdier*, a Tea-scented variety, good for a pillar or a wall, canary-yellow—a bouquetist's flower in the bud; as is likewise *Amazon*, with a flower like *devoniensis* in shape, but of deeper tint. *L.* is a weakly grower. Flowers of *Innocenta Pirola* have grown this season to 6 inches in diameter.

Grand Mogul (W. Paul), a crimson-rose shaded with maroon, is considered to be about equal to *Jean Soupert*.

Etoile de Lyon has grown well, but no fine blooms have been produced here this season; *Ella Gordon* (Paul), of Victor Verdier form, has given much satisfaction; *Victor Hugo* has the colour of *Xavier Olibo*, and grows better than that variety; *M. Matbaron* is very similar to *Pitaud*, but better—it is a very dark coloured Rose.

Silver Queen (W. Paul) is a small grower, but still not delicate; it has grown and flowered fairly well.

Plants of *Princess of Wales* (Bennett) were

observed; *Baron Nathaniel de Rothschild* is a good dark Rose of 1882, not seen often as yet; *Baronne de Rothschild* is very fine as an autumn Rose.

Besides the area at Bergholt a large quantity of stocks for working Roses on—viz., Manetti, seedling Brier, and Brier cuttings—are planted at Mile End Nursery, situated on the south side of Colchester.

Here the land is heavy, and well suited for the purpose of growing Roses. A small quantity of general nursery stock is grown at Mile End, of which it was remarked that the Cherries, Plums, and Pears were the best.

Mr. F. Cant is a young man endowed with an enthusiastic love of Roses, and considerable know-



FIG. 32.—*PINUS PYRENAICA*. (SEE P. 267.)

A, Shoot and detached cone; B, Foliage; C, Plan of section of leaf, magn.

ledge of their vagaries and idiosyncracies, and is consequently a dangerous opponent at exhibitions, as many of our friends have already learnt. We believe that the business has not been established longer than eight years, but even now the stock of saleable plants is equal to any probable demands made upon it, and will be increased as occasion demands.

PLANTS AND THEIR CULTURE.

BEGONIAS.—*Begonia socotrana* is just now starting into growth, and should be repotted without delay as it is impatient of being disturbed after much growth has been made. The new bulbils are produced round the base of the shoots, therefore keep this part of the plant beneath the soil; in re-potting place the plants in a light position, near the glass, and in a temperature of 60°–65°; maintain a moist growing atmosphere, but water sparingly until they have made considerable growth. The soil best suited for this, as well as the other *Begonias*, is a rich loamy compost rather inclined to be light than heavy. There are several hybrids of *B. socotrana*, but I am of opinion, that it is still better than any of its hybrids. Any plants of other species which require potting, should be attended to, and placed in a mild heat. By shutting up early, fire-heat would not be requisite for some time yet. But to flower satisfactorily in winter an intermediate temperature, about 55° to 60°, must be afforded them.

Chrysanthemums.—The earliest-flowering varieties, such as *Illustration*, *Chromatella*, *Little Bob*, &c., are now coming in, and very useful they are. To prolong their flowering season, stand them in a position having a northern aspect, give plenty of air, and shade from bright sun. Where dwarf plants are much required, at a later period, the usual plan of rooting large tops of the later-flowering sorts taken from plants which are planted out, is a satisfactory method of getting up a stock.

Select clean robust pieces about 6 inches long, and which are showing signs of breaking below the terminal bud. Insert them three together in 60-pots, place in a frame with a gentle bottom-heat, watering and shading to prevent flagging, when if all goes well they should be nicely rooted in about twenty days, by which time they will require potting into 5-inch pots, employing a rich potting compost. Insert a small stake to each plant, keeping them rather upright, so as to form a dense head when in flower. If single plants in the pots are desired, they are best struck singly in pots of small size, and perhaps put in a little earlier. These small plants will be most useful for mixing in flower stands, or, indeed, for any kind of dwarf decorative work. The main stock of plants will now require careful attention, and by this time it should have been decided whether the terminal or lateral buds are to be retained. Whichever has been selected pinch out all subsequent superfluous growths, so as to concentrate the plant's energies on the buds which are left. In all cases where the pots are well filled with roots, water with weak liquid manure at regular intervals. Soluble nitrogenous manures, such as nitrate of soda, sulphate of ammonia, &c., are valuable fertilisers, but when applied alone, they are most serviceable just as the buds begin to show colour; they have then a wonderful effect both in increasing the quality and size of the blooms. If applied earlier, they are apt to cause too succulent growth, with abortive flowers; in any case, they require to be cautiously used. Farmyard liquid manure is the best in the earlier stage of growth, but failing that, give a top-dressing of some concentrated fertiliser containing the important elements nitrogen, phosphorus, and potash combined—say as is found in Standen's, Clay's, Jensen's fish potash manure, or similar compounds; they will give excellent results. *F. Ross, Pendell Court, Bletchingley.*

THE FLOWER GARDEN.

FLOWER-BEDS.—The recent gales and thunderstorms have played havoc amongst the usual summer flowering and foliage plants. If not already attended to, they had better be looked over at once, and put into a neat and trim condition, which ought to be sufficient to carry them on to the end of the season. Zonal *Pelargoniums* should have all decayed flowers, leaves, and seed-pods picked off, after which, if

favoured with a little bright sunshine, they will again make a presentable appearance. *Petunias*, *Heliotropes*, *Verbenas*, and such-like plants should have the shoots regulated, whilst *Stachys lanata*, *Perilla*, and other dwarf foliage plants will need pinching back and putting in line where overgrown. Sub-tropical plants of a soft-wooded nature will also need attention, when grown in groups, arranging that each specimen stands clear of its neighbours.

Carpet-beds, in some districts, have doubtless been a failure this summer owing to the cool nights and want of sunshine; in favoured localities, however, of which perhaps ours is one, some of the plants employed have made luxuriant growths, and more than ordinary attention has been wanted to keep them within bounds. Such beds will require to be looked over twice more at the least before the end of the month to keep the various lines and panels as accurate as is practicable.

Violets.—Preparations should now be made for transferring these to their winter quarters, and brick pits or frames with 9 inch walls are undoubtedly the best in cold districts. When made up the bed of soil ought to be sufficiently near to the glass as to give the plants head room only; the surface soil of the beds should have a depth of 6 inches, and should consist of good turfy loam and leaf-mould, three parts of the former to one of the latter. As regards distance at which to plant, this will depend on the size of the plants; they ought, however, to stand quite clear of each other, so that in dull damp weather there will be less risk of the flowers damping off. Cucumber and Melon frames are frequently made use of for this purpose, and in some of the southern counties it is only necessary to move the frames to the borders on which the plants have been growing during the summer. In these cases the end of the month or early in October will be quite early enough to put the frames over the plants. Previous to planting cut off all runners, and for some little time afterwards put the lights on at night only, leaving them slightly tilted at the back.

Shrubs.—Examine clumps and borders occupied with old plants, regulate and cut back straggling shoots of this season's growth where they are overcrowded or encroaching on their neighbours, of Yews, Laurels, and other plants whose flowers do not constitute their principal attraction, and burn all prunings immediately afterwards. Look over those that were planted spring and autumn, tying up the leaders and loosening old ties where necessary. *J. Horsfield, Hedgesbury.*

FRUITS UNDER GLASS.

PINE-APPLES swelling their fruit will now require careful attention, to keep the soil in a genial state of moisture, for if this becomes too dry the fruits will shrivel, and if too wet they are liable to become black in the middle. Do not afford them too strong doses of manure-water as the sun declines in power. Use the syringe with caution on swelling fruits, otherwise the crowns will develop to undesirable dimensions; let the temperature be 80° at 10 P.M., falling to 75° at daybreak; sprinkle the paths and plunging material on the morning and evening of fine days.

Successions.—Queens which are intended for starting early should be induced to rest by gradually withholding water, lowering the temperature, and giving free admission of air on all favourable occasions. Guard against excessive dryness at this season, as the sun shines forth with great power at times and the plants would be seriously crippled if not permanently injured if the soil were too dry. Cease syringing overhead and resort wholly to sprinkling the paths and other surfaces; a temperature of 70° will be high enough as a maximum at 10 P.M., allowing the thermometer to fall to 65° by the early morning. Growing stock should be kept steadily moving until the growth is fully made for the season, and the pots are filled with roots; supply them with weak manure-water every time they require watering, changing it each time, weak guano, drainings from a dung heap, and a dust over of Thomson's Vine manure being all employed in turn. Cease the use of the syringe overhead and only damp the paths, walls, &c. Shut up so as to secure a temperature of 95° for a time, but let the temperature decline to 75° by 10 P.M.; and the fires should be started in good time to prevent a too rapid subsidence. Look carefully after young stock, and pot on all suckers which have

filled their pots with roots. These plants should not require water for two or three weeks after being potted, unless the soil was in a very dry state when potting took place. Slightly dew over with tepid water, and shade during bright sunshine for the first fortnight, but do not allow the shading to remain over the plants longer than is necessary. Let the bottom-heat be kept as near 85° as possible.

The latest suckers should now be got in without further delay, in order to have them well-rooted before winter sets in. Strong growing sorts, like the *Cayenne*, *Charlotte Rothschild*, *Providence*, and *Black Jamaica*, may be placed in 8 and 9-inch pots, provided the suckers are of good size; but suckers of *Queens* and small ones will be better if put into 6 and 7-inch pots. Ample drainage should be afforded, and a handful of soot should be placed over the crocks. In preparing the soil for potting sift out the smaller particles and make use of the fibry part, and to every 2 bushels of loam add a 6-inch potful of bone-meal or Thomson's Vine manure and the same quantity of soot. If the soil be in a proper state of dryness it cannot be made too firm by ramming it into the pots; plunge the plants, so that they are close to the glass, and let the bottom-heat range from 85° to 90°. Shade during very bright sunshine, and dew over with water at 85°. This should not be done so as to cause the moisture to run off the leaves into the pots. Whenever the roots appear at the sides of the pots give a good watering, and no more should be given until the plants actually require it. After the first application of water cease the use of the syringe overhead. *W. M. Baillie, Luton Hoo.*

THE KITCHEN GARDEN.

ONIONS.—These should now be got under cover as soon as possible before they are affected by the slight frosts which are not rare at this late period, otherwise they will not keep well. If the bulbs are still green, the tops should be laid down flat, the bulbs exposed to the sun, and as soon as growth ceases they should be pulled up. In view of continued showery weather, it will be best to remove them altogether from the beds to hard walks or hurdles, where they can easily be turned over to dry, and quickly covered if necessary. When sufficiently dry, they may be spread out thinly in a dry place, to be cleaned and sorted as opportunity offers, when they may be tied in ropes, or placed on shelves in a dry, cool shed.

Cabbages.—A plot of ground should now be got ready for planting; many gardeners make a practice of planting the main crop of these on the ground the spring Onions have been taken from. In any case, the ground should be well manured (cow-manure being the best for the purpose), and deeply dug previous to planting. The roots should be preserved as much as possible when lifting, to prevent any check to their growth. It is well to plant some Cabbages from the earliest sowing on a border with a southern aspect, or some other warm position, in order to get a supply as early as possible in the spring. Smaller varieties, such as *Ellam's Early*, may be planted 18 inches apart each way; but for *Mein's No. 1* and many others, large growers, 2 feet each way is not too much if the soil be rich.

General Work.—A quantity of French Beans should now be sown in pots, and put into cold pits, to be eventually removed to warmer quarters; and when frost is anticipated it is well to gather all of the *Scarlet Runner* Bean pods that are ready. They will keep fresh for a considerable time if spread out thinly in a cellar, or similar cool, damp place.

Peas may also be had in winter by sowing at the present time *Chelsea Gem*, or some similar variety, in 8-inch pots, placing the pots in a frame now, and on a shelf in a Pine stove by-and-by.

All fruits on Tomatos should be exposed to the sun as much as possible. Any that are partially ripe will ripen successfully for use if they are placed on shelves in a late vinery.

Advantage should be taken of dry weather to destroy weeds, especially among Spinach and other standing winter crops. *W. H. Divers, Ketton Hall, Stamford.*

HECKFIELD.—The first show of a cottagers' society to be called the Heckfield and Mattingley Horticultural Society, was held in the gardens at Heckfield Place, on Tuesday, August 28, by the kind permission of Viscount Eversley. Mr. W. Wildsmith is the Secretary.

Advertisers are specially requested to note, that, under no circumstances whatever, can any particular position in the paper be guaranteed for advertisements occupying less space than an entire column.

APPOINTMENTS FOR THE ENSUING WEEK.

MEETINGS.

MONDAY, SEPT. 10—Chambre Syndicale of Ghent.
TUESDAY, SEPT. 11—Royal Horticultural Society: Fruit and Floral Committees.

SHOWS.

WEDNESDAY, SEPT. 12—National Chrysanthemum, Royal Aquarium, Westminster (two days).
(Glasgow and West of Scotland (three days).
Cheltenham (two days).

SALES.

MONDAY, SEPT. 10—Bulbs, by Messrs. Smail & Co., at 23, Lime Street, London, E.C., at 12.30 P.M.
First-class Bulbs from Holland, at Stevens' Rooms.
Dutch Bulbs, at Protheroe & Morris' Rooms.
TUESDAY, SEPT. 11—Greenhouse and Stove Plants, at Eastgate Nurseries, Peterborough, by Messrs. Protheroe & Morris (two days).
WEDNESDAY, SEPT. 12—Bulbs, by Messrs. Smail & Co., at 23, Lime Street, E.C., at 12.30 P.M.
First-class Bulbs from Holland, at Stevens' Rooms.
Choice Orchids in Flower, and Imported Orchids, at Stevens' Rooms.
Dutch Bulbs, at Protheroe & Morris' Rooms.
THURSDAY, SEPT. 13—Great Annual Trade Sale of Greenhouse Plants at Ladd's Nursery, Swanley Junction, by Messrs. Protheroe & Morris.
FRIDAY, SEPT. 14—Bulbs, by Messrs. Smail & Co., at 23, Lime Street, E.C., at 12.30 P.M.
Established and Imported Orchids at Protheroe & Morris' Rooms.
SATURDAY, SEPT. 15—First-class Bulbs from Holland, at Stevens' Rooms.
Dutch Bulbs, at Protheroe & Morris' Rooms.

IN our present issue we give a short report of two provincial conferences that have already been held with respect to the development of fruit-culture as a national industry. Next week we hope to be able to make mention of the meeting at the Crystal Palace, and, later on, of that in the old home of the Royal Horticultural Society at Chiswick, where, it will be remembered, the most extensive and most successful conferences were held a few years since. We can but rejoice heartily at the public interest manifested in this question. So much more might be done than is done—so many more pounds might be retained in our own pockets—so much less coin find its way into the coffers of our neighbours. All this must be admitted: but in their zeal, the promoters of extended fruit-culture must not suffer themselves to fall into the delusion, that fruit-culture is to be a perfect cure for agricultural depression. To say, as one gentleman at St. Alban's is reported to have done, that "in the growing of Fruit lay England's salvation" is to use the language of exaggeration. It may—and we believe will be—very useful as an auxiliary, and if it enforce on our agriculturists the recognition of the folly of putting all their eggs into one basket, to use a homely proverb, it will do good service. Nevertheless, we have only to look back to the Fruit Crop Reports given annually in these pages for the last quarter of a century and upwards, to see that the risks and contingencies of fruit-growing on a large scale are, to say the least, as great as those with which the farmer has to contend, while the difficulties in the form of land-laws, markets, and transit are certainly no less.

The Conferences will, we hope and believe, do much to show what sorts can be grown at a

profit in particular localities, and what sorts it is a mere waste of space to cultivate. For the selection of appropriate stocks and other details of cultivation, the farmer or market-gardener must at first depend upon the gardener or the nurseryman. Whatever, is to be the future of agriculture in this country, it is certain that the farmer has much to learn from the gardener. Fruit culture just now is in the air, but it is only one resource out of many open to him. In the future it will be by the careful study and extension of the methods adopted by the florist and the gardener that progress will be made. The knowledge of first principles is not too well ingrained among gardeners—it is all but absent in the great mass of farmers; and yet upon the teachings of physiology and chemistry, and upon practical experiments made in experimental gardens—success depends in the future. This, it will be said, is a slow and tedious process, and so it is; but have not the teachings of experience been tedious and slow? Any means whereby combined action may be brought to bear upon the search for knowledge and its application to practice must be welcomed as hastening the rate of progress, and in this direction a reconstructed Royal Horticultural Society might do much good. In these days of specialisation, however, and particularly in the present state of things, it seems almost hopeless to expect that the Society will take its proper place at the head of all such movements, and therefore it is well worth considering whether the time has not come for the formation of yet another special society, if we cannot have, as we should prefer, a special department of the Royal Horticultural Society. On this subject a correspondent writes:—

"In the interest of the fruit-growing industry of this country it is greatly to be hoped that one of the good results likely to accrue from the holding of conferences this autumn will be the formation of a National Fruit Growers' Society. We believe it to be one of the pressing requirements of the times. At first sight it appears somewhat strange, in these days of keen competition and business enterprise, that such a society has not been brought into existence long ago, and it is only because we believe it to be an absolute necessity—seeing that we are soon to have a Minister of Agriculture and Horticulture—that we call attention to the subject at this juncture, trusting thereby to stimulate the energy of those whom it most concerns. In a matter of this kind the duty of the Press begins and ends with drawing the attention of practitioners to the subject, and with directing or pointing out the channels in which their interest lie, and it is for them, and for them alone to take active proceedings afterwards, to set in motion the machinery through whose agency they are expected to reap advantageous results.

"There are already a few local societies in different parts of the country, and these we have reason to believe are doing a real and substantial service to their members. These in time to come will doubtless be largely increased in numbers, and, in our opinion, advantageously so; but what we have in mind at the present time is the starting a society which shall be of a national character, and to which all these local or district ones—at least such of them as think it advisable to do so—may be affiliated. At the present time there is a vast amount of capital employed and floating about seeking for employment in the fruit-growing industry of this country, and it behoves its owners to seek for methods of combinations whereby it shall receive legitimate protection to prevent loss or depreciation as far as it is in human power to do so, or at least, when they do occur, to confine them within the narrowest possible limits. Presuming that a National Fruit Growers' Society is brought into existence forthwith, we can quite conceive that some persons will say the time is not yet ripe for such a thing—what will its functions consist

of, and in what direction will it seek to do good by looking after the interests of its members?—are questions which all shrewd and common-sense persons will ask themselves before giving a subscription towards its support, or before fruit growers themselves will consent to have their names proposed as members.

"We will endeavour to answer these questions, and also to enlarge upon them, for it is only by such pithy points being put in a clear light that such a society as we are now advocating can ever hope to be established on a firm basis, or to become permanent, and of an increasingly popular character. In the first place, the society should hold an annual meeting of members for the reading of papers on matters connected with fruit growing, and others treating on the economic aspect of such questions as may be expected to crop up from time to time in regard to our fruit growing industry; the reading of each paper to be followed by a discussion; in fact, to put the matter in other words, the meetings should take the form of an annual Conference, and there cannot be the slightest doubt but what great good will result. Secondly, the society should be able to command the services of a qualified horticultural or agricultural chemist, so that any member by paying a small fee could obtain a chemical analysis of soil or manure at any time he wished for such information; and with the table of analysis there should be a few remarks stating what chemical properties will benefit the said sample of soil, and also what value can be attached to the manure for fruit growing purposes. This matter is one of very great importance, and it is a strange fact that no horticultural society of the present day, so far as we are aware, employs an analytical chemist for this purpose, and any fruit grower, be he a private gardener or a man working on his own capital, wishing to obtain such information, must do so through an Agricultural Society, or by paying a large private fee, the amount of which acts as a deterrent to men of small means. We believe that thousands of pounds are lost annually over artificial manures owing to a want of more knowledge on the subject by those who use them. Thirdly, the society should issue a Journal yearly or half-yearly, in which should be given in tabulated form statistical information relative to importation and exportation of fruit in its various forms, *i.e.*, dried, bottled, jams, and in green or ripe condition. Such a matter as this is also of the greatest importance to fruit growers, and as the fruit growing industry develops itself it will manifest itself in an intensified degree. Indeed it is becoming daily more apparent that we have been exceedingly lax and neglectful of such an important source of information, but the opinion is now fast gaining ground, that it stimulates the business capacities of men with the best brains, and contributes largely to the levelling-up of inequalities where they exist. In addition to such information as this, the society's Journal should contain a limited number of contributions from some of its leading members, on subjects immediately connected with the fruit-growing interests—not necessarily on systems of culture—but mostly on the broader questions—such, for instance, as improved methods of fruit transit and distribution, drying, storing packing, and marketing of fruit, with others again relating to tithes, rates and taxes, in so far as they affect owners and occupiers of fruit farms and gardens. Of these latter questions some persons may think that they are already well understood, unalterable, and fully accepted; but on that we differ in opinion, and we think it will be found that, when the new elective County Councils come into force and get settled down into working order, there will be a very great deal in this respect that will require to be closely looked after. Having pointed out the directions in which the work of a National Fruit Growers' Society lies, the next question is as to management and putting it into working order. The latter part of the question may be answered, first, by saying that we know of no better plan than for the leading market-growers attending the Conferences to join hands and make arrangements to

FIG. 33.—*ARAUJA GRAVEOLENS*: STOVE CLIMBER: FLOWERS WHITE, FRAGRANT.

convene a general meeting, to which all who are interested in the project be invited to attend, with the object of discussing and taking the matter into earnest consideration. As regards management, we are of opinion that this need not be a costly affair—an office and meeting room could easily be rented, but the life and soul of the society, we think, will be found in the services of a thoroughly competent man as paid Secretary. There should be an Honorary President, Vice-Presidents, and a Council or committee of from seven to twelve members, elected by votes of course—one third to retire annually and not to be eligible for re-election under a period of three years; this would insure a constant infusion of new blood, in itself a matter of great importance to a society of this kind. One of the rules of this society should be worded in very precise language regarding the class of men who are to form the committee, and who in our opinion ought to be *bona-fide* market or trade growers only; this will give stability to the society, and gain the confidence of those members who have most benefit to expect from its labours. The committee should hold periodical meetings—say quarterly—to discuss business matters in connection with the society, and points of importance that may be expected to crop up regarding the fruit growing industry, and on which it might be thought the society could take action. Various other matters touching the interests of fruit growers could also be dealt with, but, as they are questions of detail we can hardly refer to them here further than say, they will force themselves to the front in the near future. It seems almost superfluous to add, that with a Minister of Agriculture, the voice of such a society would have great weight on all questions of a public character bearing on the interests of fruit growers."

ARAUJA GRAVEOLENS (fig. 33).—This is a stove climber (native of Brazil) of great beauty, closely allied to the well known *Stephanotis*, and which may be grown in like manner, and used for similar purposes. It is perhaps best known as *Schubertia graveolens*, under which name it was figured as long ago as 1838 in the *Botanical Register*, vol. xxxii., t. 21, and *Botanical Magazine*, t. 3891. Another name for it is *Physianthus graveolens* or *P. auricomus*, while it is very closely allied to the *Schubertia grandiflora* of MARTIUS. In the standard work of BENTHAM and HOOKER, *Genera Plantarum*, ii., 751 (1876), both *Physianthus* and *Schubertia* are included under *Arauja*, on which account we have here adopted the name *Arauja graveolens*. These are points, however, which must be left to the botanists to settle. For gardeners it may suffice to say that it is a very free-flowering stove climber, the stems of which are covered with reddish spreading hairs, the leaves are also softly hairy; the flowers are in umbels, white, waxy, and thick in texture. For the rest, our illustration tells its own tale. We saw the plant lately beautifully in flower in the garden of Mr. BARTHOLOMEW, at Reading, as also in the Water Lily-house at Kew. Our illustration is from a plant grown by Mr. DAVIDSON, of Wernoleu, South Wales.

THE LATE MESSRS. T. JACKSON & SON'S NURSERY.—Full of kindly observations was Mr. GEORGE FIELD MORRIS (PROTHEROE & MORRIS, 67 and 68, Cheapside), when he offered on Thursday, August 30, at The Mart, Tokenhouse Yard, London, the well-known and valuable freehold and leasehold properties, formerly belonging to Messrs. T. JACKSON & SON, both of whom are now dead. Interest was naturally excited among Kingstonians, and Alderman G. C. SHERRARD, J.P., was present as, it was understood, the solicitor representing the family. The auctioneer said the first offer was for the whole of the property in its entirety, but it did not sell. The auctioneer then put up Lot 1, freehold property, known and distinguished as the Kingston Nursery, Kingston, Surrey, most favourably situated in the heart of the town, and possessing a commanding frontage of 588 feet 6 inches to Fife Road, and 107 feet to Clarence Street, or thereabouts, and con-

taining a total area of about 1 a., 2 r., 31 p. The first lot was knocked down to Mr. NATHANIEL SMITH (SMITH BROS., Kingston) for £4000. Lot 2, the freehold family residence known as and being Fife House, Fife Road, Kingston-on-Thames, was withdrawn, the last bid, £1780, not being considered sufficient. Lot 3—the house, shop, and premises, known as No. 13, Thames Street—excited keen competition between Messrs. NUTTALL (ALFRED & WILLIAM) and J. J. HOLLAND, but the latter would not be outdone, and he gave £3900 for the shop and premises. Other lots were unsold. The auctioneer announced that the sale of the greenhouse plants would be proceeded with at once.

GARDENERS' ORPHAN FUND.—We have the pleasure to announce that at the flower show, held at Heckfield Place on August 28, Mr. WILDSMITH, the local secretary for this district, collected the handsome sum of £5 from three boxes.

PRESENTATION OF AN ADDRESS TO PROFESSOR BENTLEY.—The prolonged and valuable services rendered by Professor BENTLEY to the Royal Botanic Society of London have recently been the subject of a well-deserved recognition in the shape of a beautifully illuminated address presented to him on behalf of the Council of that Society. The text of the address was as follows:—

"Royal Botanic Society of London,
"Gardens, Regent's Park.

"To Professor ROBERT BENTLEY.

"Sir,—At a meeting of Council this day, I was requested to convey to you, which I do with sincere pleasure, the cordial thanks of the Council and Fellows of the Royal Botanic Society of London for your able assistance in its objects by the Botanical Lectures you have during the past thirty-five years delivered in the Society's Gardens.

"Permit me at the same time to express our fervent hope that on retiring from your more active labours you may for many years enjoy the prospect of the valuable results of your prolonged and laborious work.

"FRANCIS, Duke of Teck, President."

GARDEN FETE.—The beautiful and historical grounds of Oakley Park, near Scole, Norfolk, were thrown open to the public on the 21st ult., the occasion being a garden party in aid of the Gardeners' Royal Benevolent Institution. The fete on Tuesday was organised by Mr. McMILLAN, the head gardener at Oakley Park, and so perfect were the arrangements that there was but one condition—fine weather—to make the affair successful. Unfortunately this was wanting, rain fell almost incessantly. Soon after mid-day, however, the sky cleared, and as soon as there was a prospect of the afternoon being at all fine, people were to be seen wending their way to the park. Visitors to the fete on Tuesday found many objects of interest in the house and grounds so closely identified with the name of the late owner. The gardens, now in their summer beauty, were a great attraction. The upper terrace commands an extensive view of the park and the river running through it. The kitchen garden covers about two acres, and a tour of inspection solves the problem why vegetables exhibited from this quarter distance all others at local shows. There is a long range of glass, and the houses are filled with fruit. We understand that, in spite of the wretched weather, a profit of £18 was made—a welcome addition to the funds of the Institution. Mr. McMILLAN's success should stimulate others to do likewise.

WIGTOWNSHIRE HORTICULTURAL SOCIETY.—The annual show of this Society was held on August 31, in the Academy, Stranraer, and sustained its reputation as a provincial show. Roses, Dahlias, Carnations, and other cut flowers, were shown in excellent condition, and greenhouse plants were exceptionally fine. Fruit made a large display, Grapes being well bloomed and highly flavoured. The vegetables were likewise good generally. The collections shown for the special prizes offered by

Messrs. Sutton & Sons, Reading, and Messrs. Dicksons & Co., Edinburgh, were of remarkably good quality. The bouquets of cultivated and wild flowers were numerous and meritorious.

BIRMINGHAM GARDENERS' MUTUAL IMPROVEMENT ASSOCIATION.—A notable event in connection with the above Association took place on Monday, August 27, when a party of about seventy members left Birmingham at 5.40 a.m., and arrived at Reading at 8.30 a.m. The party was met at the station by members of the firm of Messrs. SUTTON & SONS, who had provided conveyances to take the whole of the party to the trial grounds of the firm, and to their London Road nursery, and thence to the Lecture Hall, where the firm had provided dinner for the party—Mr. MARTIN JOHN SUTTON presiding, ably supported by Mr. LEONARD SUTTON, Mr. W. WILDSMITH, and Mr. W. B. LATHOM, Chairman of the Gardeners' Association. The journey to Heckfield (9 miles) was made from Reading by road. Here, after a kind reception by Viscount EVERSLEY and his daughter, the party was conducted round the place and shown everything of interest in these extensive and admirably kept gardens. The return journey was made from Reading at 7.30 p.m., Birmingham being safely reached at 10.5 p.m.

POTATO TUBER SPROUTING IN DARKNESS.—A correspondent sends us a fine specimen of an "Imperator" Potato, which had been laid aside in a cupboard, and in due time started into growth, bearing numerous shoots of coral-like appearance, the tips of which are, in many cases, developed into small tubers. All these shoots and tubers had of course developed at the expense of the old tuber, which endeavoured to do above ground what it could have done so much better below. Our correspondent rightly says a similar specimen was sent to Dr. LINDLEY some years ago (it is probably the one figured in his *Elements of Botany*); but to attribute to this distinguished botanist the statement that the "roots of the Potato are underground branches, and the tubers its fruit," is an astounding misrepresentation.

"DAMPING-OFF" OF SEEDLINGS.—The following extract is taken from an important and valuable series of articles from the pen of Professor MARSHALL WARD, now appearing in *Nature*, relating to the diseases of timber:—

"In the seed-beds [Beech is specially alluded to] it is often first noticeable in that patches of seedlings here and there begin to fall over, as if they had been bitten or cut where the young stem and root join at the surface of the ground: on pulling up one of the injured seedlings the 'collar,' or region common to stem and root will be found to be blackened, and either rotten or shrivelled, according to the dampness or dryness of the surface of the soil. Sometimes the whole of the young root will be rotting off before the first true leaves have emerged from between the cotyledons; in other cases the collar only is rotten or shrivelled, and the weight of the parts above ground causes them to fall prostrate on the surface of the soil; in yet others the lower parts of the stem of the older seedling may be blackened, and dark flecks appear on the cotyledons and young leaves, which may also be turning brown and shrivelling up.

"If the weather is moist, e.g., during a rainy May or June, the disease may be observed spreading rapidly from a given centre or centres, in ever-widening circles. It has also been noticed that if a moving body passes across a diseased patch into the neighbouring healthy seedlings, the disease in a few hours is observed spreading in its track. It has also been found that if seeds are again sown in the following season in a seed-bed which had previously contained many of the above diseased seedlings, the new seedlings will inevitably be killed by the 'damping-off.' As we shall see shortly, this is because the resting spores of the fungus re-

main dormant in the soil after the death of the seedlings.

"In other words, the disease is infectious, and spreads centrifugally from one diseased seedling to another, or from one crop to another; if the weather is moist and warm—'muggy,' as it is often termed—such as often occurs in the cloudy days of a wet May or June, the spread of the disease may be so rapid that every plant in the bed is affected in the course of two or three days, and the whole sowing reduced to a putrid mass; in drier seasons and soils the spread of the infection may be slower, and only a patch here and there die off, the diseased shrivelling up rather than rotting."

HORTICULTURAL SHOW AT LOSTOCK, NEAR BOLTON.—The fifteenth annual floral and horticultural show for the districts of Westhoughton and Lostock was held on the 1st inst. at the "Black Horse," in the latter town. The prizes offered were numerous and well assorted, consisting chiefly of domestic articles. The exhibits were acknowledged to be better than the specimens submitted at previous shows. Vegetables brought numerous entries, there being an extraordinary show of Celery, for which forty-seven prizes were offered.

FLEETWOOD FLOWER SHOW.—The first annual show in connection with the Fleetwood Floral and Horticultural Society was held on August 31, in the Queen's Hall. The number of entries for the various classes was 548, and the display was a very creditable one, considering the exceptionally bad season we have had. The gardeners' class for plants in pots produced some fine exhibits, the Pelargoniums, Fuchsias, and Ferns shown being in fine condition, with a profusion of bloom. Mr. F. H. LUCAS was the principal prize-winner in this section, whilst Mr. J. LISTER ran him close. The show was well attended, and the committee have reason to hope for better things next year.

THE BOTANIC GARDENS, TRINIDAD.—When Mr. HART, scarcely more than a year ago, assumed the superintendence of the gardens, he found them in rather a backward and dilapidated condition. An interregnum of twelve months had intervened between his appointment and the retirement of his predecessor, and during that time the gardens had been under the superintendence of a clerk from the island Audit Office. The work was done as well as could have been expected; still many things were out of order, and many improvements had instantly to be made. Mr. HART set vigorously to work, and with the efficient co-operation of his Excellency Sir WILLIAM ROBINSON, K.C.M.G., he has been able to do wonders. We admire his courage and his ability, and we sincerely wish him all success in his important labours.

LILIES AND POPPIES.—Mr. WARE sends us a magnificent combination—a sheaf of *Lilium auratum* and one of Oriental Poppies. Mix the two judiciously, and what vase shall be grandiose enough to contain so stately a group? But it is our business to analyse, and not merely to gaze in admiration. The forms sent are forms of *Lilium auratum* var. *platyphyllum*, which, Mr. WARE tells us, has larger flowers, broader overlapping segments, and larger leaves than in the common type. Among the flowers are some with a pure white unspotted segment, marked by a central band of light gold (var. *virginale*). A spotted form is represented by the var. *macranthum*. In addition, there is a red-banded variety (*rubro vittatum*), in which the band is broader and deeper than in the ordinary red-banded *auratum*. The *platyphyllum* varieties, Mr. WARE tells us, make huge bulbs, and grow in almost any soil, while the original *auratum* fails to grow with Mr. WARE in any position or soil. The Oriental Poppies are flowering a second time. Gorgeous used to be the appropriate word for these, and still is for some; but Mr. WARE has lately brought under notice some forms of a pale rose-lilac colour, so that we have now a range of colour from pale lilac or pink through orange, orange-scarlet,

scarlet, to deepest crimson, the base of the petal in every case marked with a deep black-purple spot.

THE NATIONAL FOOTPATH PRESERVATION SOCIETY is making itself felt throughout the kingdom—rousing people to the great importance of preserving rights of way both on land and water. Many of our readers have heard of the two great successes that the society has lately achieved—one in resisting the Great Western Railway Company preventing the people of a considerable district having access to their market town, Neyland (Pembrokeshire). The other case was a right to walk on the tow path of the Grand Junction Canal Company, which right was proved to have existed for a long period, but had been subsequently stopped by the company. This also was gained. Who can estimate the value of the rights of way in these two cases alone? We cannot find space to recount all the matters now before the Society. It seems almost as if all England was going mad stopping footpaths and cribbing roadside slips of land, but in truth this has been going on for years unchecked until this useful Society was formed four years ago, and the people should strengthen the hands of the Society by becoming members. The minimum subscription is 5s. a year; the London office is 42, Essex Street, Strand; and Mr. ALLNUTT the Secretary.

NATIONAL CHRYSANTHEMUM SOCIETY.—A largely attended meeting of the committee took place at Anderton's Hotel, Fleet Street, E.C., on the 3rd inst., Mr. E. SANDERSON, President, in the chair. The minutes of the last meeting having been read, an interesting letter was read from the Secretary of the Victorian Horticultural Association, Melbourne, and a deputation from that Society had subsequently called upon Mr. W. HOLMES for information as to the working of the Society. The following societies were admitted into affiliation, making forty in all:—The Barnsley, Hampstead, Isle of Sheppey, Stroud (Gloucester), and Truro. Mr. G. T. MILES, Wycombe Abbey, Bucks, was appointed one of the judges of fruit and vegetables at the November show at the Royal Aquarium, in the place of the late Mr. JOHN WOODBRIDGE, and a vote of condolence was ordered to be sent to the family of the latter. The Secretary reported that all the preliminaries of the provincial show at Sheffield had been satisfactorily arranged, and there was every reason to believe it would prove highly successful. Two new Fellows and forty-eight new members were elected. The Secretary, regretting the unavoidable absence of the members of the Catalogue Revision Committee, said the publication of the revised catalogue was in a very forward state, and he hoped copies would be in circulation before the show on September 12. The cost of the new catalogue would be about £30; already eighty copies were ordered, and it was believed that the advertisements in the catalogue would more than cover half the cost of publication. The schedule of prizes for the first provincial show at Sheffield on November 16 was laid upon the table, also that of the Barnsley Chrysanthemum Society. The proceedings closed with a cordial vote of thanks to the Chairman.

BISHOP'S STORTFORD HORTICULTURAL SOCIETY.—The summer exhibition took place as usual in the grounds of The Grange, the residence of T. J. MANN, Esq. The competition is mainly confined to amateurs and cottagers, and a good display resulted, especially in the classes for cut flowers and vegetables. The Hon. Secretary of the National Dahlia Society, Mr. HENRY GLASSCOCK, was to the fore with Dahlias, and, considering the heavy storm which swept over the district on the previous evening, doing a great deal of damage, and flooding many gardens, it is indeed surprising cut flowers were so good. Plants were small, but clean and bright. Fruit was limited in quantity. A good collection, not for competition, came from Mr. E. ATKINS, gr. to the Misses PULTENEY, Stanstead; also an admirable group of plants, arranged with great taste; a group of plants from W. A. BLATH, Esq., Croft

House, Stanstead; a large collection of cut blooms of hardy plants, Dahlias, &c., from Messrs. PAUL & SON, Old Nurseries, Cheshunt; Balsams and Roses, from Messrs. T. RIVERS & SON, nurserymen, Sawbridge-worth; Golden Champion Grapes from The Grange gardens, &c. The cottagers' produce from the allotment gardens was remarkably good throughout.

LARGE DECIDUOUS CYPRESSES.—In the grounds of J. C. RAPHAEL, Esq., Castle Hill, Englefield, are three specimens of *Taxodium distichum*, which may be regarded as remarkable ones in this country. The trees stand by the edge of a deep pool of water, and the ground around, and more especially the very angle of the bank nearest to the water, is covered by woody protuberances which emerge from the roots of these trees, some of which are 2 feet in height. The largest tree measures about 3 feet 6 inches in diameter at breast height, and is about 70 feet in height. The others are somewhat smaller, but still stately trees. The boles of all of them appear of remarkably stout proportions, not spindling much as they ascend, and the branches appear of disproportionately small dimensions. Our old correspondent, Mr. W. SWAN, has charge of the gardens at Castle Hill, but his attention will not be so exclusively given to Orchids, although there exists the nucleus of a choice collection—as in some other gardens of which he has had the charge.

CHRYSANTHEMUM SHOW FIXTURES.—The annual exhibition of the Pembrokeshire Chrysanthemum Society is fixed for November 9 and 10, and that of the Winchester Horticultural Society on November 13 and 14.

THE NEILL PRIZE.—At a meeting of the Royal Caledonian Horticultural Society, held in the Waverley Market Hall, Edinburgh, on Wednesday, September 5, the Council of the Society presented the Neill Prize—amounting this year to £40—to Professor BAYLEY BALFOUR, of Edinburgh, well known for his travel and researches in Socotra, whence he introduced some remarkable plants into our gardens. The late Dr. NEILL left to the Society the sum of £500 for the purpose of the interest being applied in furnishing a medal or other reward every second or third year to any distinguished Scottish botanist or cultivator, to be voted by the Society. The practice has been to allow the interest to accumulate for two or three years, and then vote it as a money prize.

SCOTTISH HORTICULTURAL ASSOCIATION.—The monthly meeting of this Association was held last night at 5, St. Andrew Square, Edinburgh, the President, Mr. ALEXANDER M'KINNON, Scone Palace Gardens, in the chair. There was a large attendance. Seven gentlemen nominated at last meeting, including Professor BAYLEY BALFOUR, were admitted members. Mr. DUNN, Dalkeith, drew attention to the Fruit Conference held last week at Dunkeld, and suggested that steps should be taken towards the formation of a pomological society, or a pomological branch in connection with the Association. All would agree, he thought, that there was great room in Scotland for such an organisation. He hoped something definite would be done before the coming winter set in. Mr. MACKENZIE, Warriston, Mr. GRIEVE, Pilrig, Mr. MILNE (Messrs. JAMES DICKSON & SONS), having spoken in favour of the formation of a pomological branch, the Secretary, Mr. ROBERTSON MUNRO, in seconding the motion, said that while he did not in any way deprecate taking steps on the lines suggested, he did not think their Association should take up the matter exclusively for fruit. The holding of excursions such as that to Dunkeld Gardens, had been referred to, but he thought if these were of benefit to those interested in fruit culture they would be equally interesting to others having a liking for other departments of horticulture. After some further conversation the motion was adopted unanimously. Mr. TODD, 7A, Maitland Street, read a paper by Mr. MATTHEW SMITH, Prestwick, Ayrshire, on the culture of

Gladioli. Some discussion took place on the paper, and at the close it was resolved that the thanks of the Association be communicated to Mr. SMITH. Among the exhibits were twenty-four specimens of a new seedling Carnation, Maggie Laurie, of a pale pink colour, forwarded by Messrs. DICKSONS & Co. A fine collection of blooms of *Gloxinia* was shown by Mr. JOHN CLARK, Links Place, Leith. Mr. FRASER (Messrs. METHVEN & SON) exhibited a cluster of Damson Plums and samples of Hops which he had brought from Kent the other day.

NOVELTIES.

The following new plants are announced for the first time in Mr. W. Bull's Catalogue, where descriptions may be found:—

Aglaonema picta compacta, stove Aroid.—Java.
Alocasia marginata, Brazilian Aroid—stove foliage plant.

A. princeps, Malayan Aroid—stove foliage plant.
Aphelandra amoena, Brazilian Acanthad—stove foliage plant.

Ardisia polycephala, East Indian shrub—leaves red when young; berries black.

Crotons Delight, Junius, Magnificent, Monarch, and Victory.

Cypripedium Saundersianum = *C. caudatum* × *Schlimii*.

Dracena argenteo-striata, South Sea Islands; leaves linear, streaked with creamy-white.

Eomecon chionantha, a Chinese *Papaverad*—half hardy perennial.

Esmeralda bella, Orchidaceæ. See *Gardeners' Chronicle*, February 4, 1888.

Massandra erythrophylla, Congo—stove shrub; bracts scarlet.

Nidularium striatum, Brazilian Bromeliad.—Leaves white, variegated.

Panax crispatum, *lepidum*, *nitidum*, *ornatum*—all Brazilian forms.

Pavetta natalensis; stove shrub.—Natal.

Pinanga lepidota, East Indian Palm.

Rhododendron (greenhouse) *Diana* and *Fair Rosamond*.

Gloxinias Alpha, *Casino*, *Lucrece*, *Sabina*.

Pelargonium (spotted) *Argus*, *Rubis*.

FOREIGN CORRESPONDENCE.

NANCY.

At all times a visit to these gardens is to the horticulturist a source of much and instructive enjoyment, Nancy being the birthplace and home of many of our choicest and best florist flowers, is, as it were, the "Mecca" of gardeners. But at the present epoch of gardening, when various sections of florist flowers have reached a point of perfection which a few years since would have been considered unattainable, a visit is of more than ordinary interest. Not to mention more than hybrid *Gladiolus* and Tuberous *Begonias*, the amateur can imagine what a field of interest lies before him, these alone being sufficient to repay one for a visit to Nancy.

The grower of Tuberous *Begonias* finds at the garden of M. Crousse a superb series of seedling double *Begonias*; the double white and double yellow of various shades are as yet unequalled in any other establishment. The size, perfect form, and habit of many of these magnificent flowers leave nothing further to be desired. Some of the seedlings raised this year are absolutely perfect, and make one long for the day when they will be found in the Catalogue of M. Crousse. At this garden the Ivy-leaved *Pelargoniums* also are very noteworthy. Amongst those to be sent out by-and-by are several of great promise. The *Cannas* raised by M. Crozy, of Lyons, are largely grown in this garden; but in our climate they will be more generally useful for indoor culture, owing to want of continued sunshine and heat to develop them fully. (An instance of this can now be seen by any visitor to the nursery of Messrs. Cannell, at Swanley.)

At the nursery gardens of M. Lemoine the great point of interest is the new race of hybrid *Gladiolus*, a beautiful cross between *Gladiolus Saundersii* superbus and M. Lemoine's hybrids, made known on the exhibition table by Messrs. Veitch. Only one who has seen these exquisite flowers can have an idea of what is in store before very long for growers of hybrid *Gladiolus*. The form, size, and markings, are

quite surprising—and reveal a beauty hitherto unknown amongst *Gladiolus*. It is possible that one or two may appear in the Catalogue for next year, if on lifting them a sufficient quantity to put them into commerce is found to exist.

The herbaceous *Phloxes* contain many seedlings of wonderful size and beauty, many new shades of colour being found amongst them.

The new *Montbretias*, too, contain some seedlings of very much improved form and colour, and as they increase so rapidly one may expect very soon to find them attainable.

Having visited and carefully examined both these gardens last autumn, I was not prepared to find such a number of interesting novelties this year. *John T. Pot. Riverston.*

HOME CORRESPONDENCE

TOMATOS ON SOUTH WALLS.—I have myself observed, and have likewise heard complaints of the Tomato not fruiting well outside this season, but in this garden they have never done so well before. I have forty plants placed against a south wall, which are laden with good-sized fruits, which will, with four or five days' sun, be fit to gather in quantity, and I have, moreover, furnished the family with them for three weeks past. The reason I think is, that the border is narrow, rather steeply sloped, and the wall is high. The plants were raised early and potted on into 7-inch pots before being planted out, being well hardened off previously. The variety is the old Large Red, which I think is still one of the best for growing outdoors. *G. H. Merton.*

THE POTATO CROP IN LINCOLNSHIRE.—During the past week or so I have passed through many hundreds of acres of Potatoes, in fields and allotments in various parts of Lincolnshire, and was surprised to find a diseased patch quite a rarity. No doubt there are places where the disease has made its appearance though all the crops which have come under my notice were particularly free from it. The yield too is, where the earlier sorts are being lifted, very productive, exceeding that of last year greatly. With many growers a pinkish variety named Abundance is an especial favourite, while with others I found Beauty of Hebron placed first on the list. These varieties are grown more frequently in allotments than in fields; in the latter the Magnum Bonum is considered to be unsurpassed, especially in some parts of the Fens, and it is particularly good, both as regards quantity and quality, but in other parts it is comparatively worthless. York Regents and Champions, though these are grown by some, are by no means so popular with the Potato farmers here as they are farther north. Another point I noticed was the uncommonly strict attention that is paid as to the destruction of weeds. With many of the Potato farmers in Lincolnshire it is the rule to cut off the haulm as soon as the tuber is matured, thus allowing the land to dry before the crops are lifted. *C. Collins.*

CENTAUREA AUREA.—The *Gardeners' Chronicle* has always done good service in searching out a lost plant. A fortnight ago I wrote to inquire whether anything is known about *Centaurea aurea* (Aiton), figured and described in *Bot. Mag.*, vol. xii., t. 421. The reply given, signed "D. D.," was to the effect that it is a good species, but that only one dried specimen is known to exist, viz., in the Kew Herbarium, labelled Port Juvenal, and that no habitat or living specimens are known. This week, under "Names of Plants," p. 251, I observe that "R. C. K." is credited with having sent a specimen to be named which is *C. aurea*. It is tantalising not to hear more of it, where it came from, and whether it is a live plant or not. I have tried to hunt out all that is known of *C. aurea*. I find it in Miller's *Dictionary* described as "cultivated by Mr. Miller, in 1758. Calyxes most simply thorned; thorns spreading; lower leaves pinnatifid" (reference to Aiton's *Hort. Kew.*, 3, 265). In De Candolle's *Prodromus*, vol. vi., p. 595. I find this description repeated with a reference to *Bot. Mag.*, 421, and to Sweet's "*Hort. Brit.*, 217: *Crocodylium aureum*." I have not verified the last reference as I have not the book. De Candolle adds: "All plants under this name in gardens were obvious mistakes (*obvia erant falsa*)." I am afraid this last sentence is true still. A few years ago *C. glastifolia* was distributed from a well-known nursery as *C. aurea*, to me amongst others.

The name *C. aurea* is not included in Nyman's *Conspectus of European Species*, and I should be glad to know where "Port Juvenal" is. The most obvious character of *Bot. Mag.*, t. 421, is the long spines projecting outwards from the end of the involucre bracts. Besides the mention of Port Juvenal with the Kew specimen I can only find South Europe given as a habitat in Miller and *Bot. Mag.* De Candolle does not give any habitat. *C. Wolley Dod, Edge Hall.*

DISEASE OF POTATOS AND MANGELS.—The fungus of the Potato disease has lately spread with alarming rapidity, and few Potato patches are now without it: its effect will doubtless be seen on late Potatos. In Glamorganshire, Carmarthenshire, and Cardiganshire, it is working great mischief, and most of the South Wales Potato growers say the crop is "bad," "very bad," or "blasted." Although so much has been written on the subject many growers are still unacquainted with the early state of the disease; as first seen on the leaves; as a rule no precautions seem to be taken to mitigate attacks. Mangels are in many places afflicted with *Peronospora effusa*, a close ally of the Potato fungus, and unless the attack is unusually virulent farmers seem to be paying but little attention to this, one of their most deadly enemies. As Mangels are not earthed-up they are fully exposed to the attacks of the spores of the fungus and the disease will be seen when the crops are lifted. *Peronospora effusa* does not generally grow on Mangels, it prefers Spinach and the wild species of *Chenopodium* and *Polygonum*. For an illustration and description see *Gardeners' Chronicle* for April 3, 1883. The *Peronospora* of Lilies seems to have spread all over the country, and garden and wild Poppies are being mown down in thousands by *Peronospora arborescens*. The wet summer seems to have given renewed vitality to all species of *Peronospora*. *W. G. Smith, Dunstable.*

BOUVARDIA PRESIDENT CLEVELAND.—It rarely occurs that a plant of such sterling merit as the above comes into commerce with so little ceremony as did this beautiful scarlet *Bouvardia*. On first seeing it I was much struck with its beauty, and on comparing it with other varieties my first impressions were fully confirmed. I found, too, that others were not slow to recognise its merits, and it was so much in demand that the saleable stock was soon exhausted. I have no doubt that many are ignorant as to whom belongs the credit of introducing this *Bouvardia*, but I believe it was brought from America by Messrs. Low & Co., and first distributed by them last autumn. It was put before the Floral Committee of the Royal Horticultural Society by Messrs. Veitch & Sons, and obtained a First-class Certificate, and much admiration from all who saw it; and I should say that it is destined to become one of the most popular of this beautiful class of plants. *A.*

PEACH ALEXANDER.—With reference to a paragraph in your last issue, headed "Alexander Peach," I have to say that it is earlier than Early Louise or Beatrice, as grown in pots in the same house here. It is quite distinct from Hale's Early, being a clingstone. *Will Taylor, Hampton.*

EXHIBITING VEGETABLES.—*Habitais* of our horticultural gatherings have doubtless noted the increased attention that has been paid of late years to the staging of the products of the kitchen garden. Whereas formerly it was rare to find taste in arrangement displayed, it is now a pleasure to look upon the exhibits. And in this new departure exhibitors are but studying their best interests, for taste in arrangement combined with quality in the exhibits, will always score a point with the judges. My attention was drawn to this matter by observing Mr. Lambert's collection of vegetables at the recent show at Shrewsbury. This collection, which secured the medal of the Society, was arranged on a stand 4 feet wide and 7 feet long, with a joint running lengthways to admit of the back and narrowest division being tilted up to suit the different vegetables staged. The tray was then filled with soil and planted all over with *Selaginella*. Eight places were left for eight dishes to fit into (the back four vegetables not in dishes). These eight dishes were shaped to suit the different vegetables, and planted with *Selaginella*, so that when the dishes were fitted into the tray it formed one mass of moss, exactly the shape wished for, to put the different vegetables on. All round the outside, and hanging down, was *Panicum*, giving the exhibit quite a graceful appearance—blocks of wood cut wedge-shape and pushed

under from the back, raising the two divisions of the tray to the exhibitor's taste. It was an arrangement that caused Mr. Lambert a lot of trouble, but, as he somewhat significantly remarked to the writer, "I want to get the Veitch Memorial Medal!" and he succeeded. Fine in quality, as were his different dishes, his tasteful arrangement was of no little assistance when the crucial moment for judging arrives. *B.*

GENTIANA ASCLEPIADEA.—In your issue for August 26, "C. E. F." enquires respecting the propagation of the above. To the first question of your correspondent, viz., Can this plant be propagated from cuttings, and if so, what is the proper time for striking? I reply, Yes, it may be propagated from cuttings, taken off in early spring when the fresh growths are pushing forth, and about three or four inches long, detaching them with a heel from the old stool. But while this may be done with success, it is only to be recommended in cases where large plants exist, for I would have your correspondent bear in mind that for every cutting thus taken, a flower-stem and flowers are sacrificed. The cuttings may be inserted in sandy soil, and covered by a bell-glass or handlight, keeping them well shaded. The best way of raising a stock of this and most *Gentians* is by seeds, and though extremely slow to vegetate in the majority of cases, the patient waiting is now and again fully rewarded with a good batch. In sowing seed two things are essential—these are, never to allow the seeds to become dry by exposure previous to sowing, and always to keep them moist after being sown. *E. Jenkins.*

EUCHARIS AMAZONICA.—We hear much of the mite, and other signs of failing health of this plant in many gardens, and at the same time of many nostrums to cure these ills, that it was quite a treat to see a perfectly healthy lot (a houseful) of *Eucharis* at Luton Hoo Gardens. Before the arrival of Mr. W. M. Baillie at Luton Hoo the *Eucharis* had got into bad health, but under his direction the plants soon began to mend. His method is simplicity itself. The plants are kept steadily at a temperature of 75°, and are always growing—no resting period—and they flower three or four times yearly, producing both large flowers and foliage. The plants, which are in large pots of various sizes, are watered once a week regularly, and syringed twice daily in summer-time. *M. W.*

HEAVY RAINFALL IN THE LAST WEEK OF AUGUST.—The rainfall at Llandilo, in Carmarthenshire, from Wednesday, August 22, at 6 a.m., to Thursday, August 30, at 6 a.m., amounted to 3.37 inches, viz.:—August 23rd (Thursday), .30; 24th (Friday), .29; 25th (Saturday), .11; 26th (Sunday), .7; 27th (Monday), .37; 28th (Tuesday), 1.75 (rained in torrents for the twenty-four hours); 29th (Wednesday), .36; 30th (Thursday), .12; total, 3.37 inches. *T. Cowburn, Dynevor Castle Gardens.*

SOCIETIES.

HARPENDEN HORTICULTURAL.

The show of this Society was held on Wednesday week (August 29) under most inauspicious circumstances.

Plants.—Two collections only were staged, both excellent, the 1st prize going to J. B. Maple, Esq., M.P. (gr., Mr. T. Nutting), Childwickbury, St. Albans, for *Erica coccinea*, *Clerodendron Balfourianum*, *Vinca oculata*, *Cassia corymbosa*, *Impatiens Hawkeri*, and *Allamanda grandiflora*. The 2nd was shown by P. Bosanquet, Esq. (gr., Mr. J. Turk), Pondfield, Little Berkhamsted, comprising *Plumbago capensis*, *Begonia fuchsoides*, *Habrothamnus elegans*, a fine specimen; *Stephanotis floribunda*, *Vinca oculata*, and *Lapageria rosea*.

For six foliage plants, distinct, three capital lots competed, premier honours being gained by J. B. Maple, Esq., M.P. (gr., Mr. T. Nutting), Childwickbury, who exhibited *Croton aneitamensis*, *Areca lutescens*, *Pandanus Veitchii*, *Croton Queen Victoria*, and *Areca* species. Two noble Palms, adding greatly to the effect of the central staging, were also shown by this exhibitor, not for competition. The 2nd prize was awarded to P. Bosanquet, Esq. (gr.,

Mr. J. Turk), for *Croton majesticus*, *Phoenix farinifera*, *Dracena metallica*, *Latania borbonica*, *Croton Youngii*, and *Cordylina australis*. An extra prize was given to a very worthy exhibit shown by J. S. Hill, Esq., J.P. (gr. Mr. W. F. Emptage), *Hawswick*, St. Albans, for *Anthurium crystallinum*, a magnificent plant; *Croton Queen Victoria*, C. anietemensis, *Phoenix reclinata*, *Asparagus tenuissimus*, and *Seaforthia elegans*.

Groups of Plants.—Facing the visitor on entering the principal tent was a meritorious group of plants, entered as an honorary exhibit from Sir J. B. Lawes, Bart., the President of the Society (gr., Mr. W. Olver).

Ferns.—Three sections were staged of almost equal merit, it being a most difficult matter to decide to which premier honours should be awarded. Eventually, Mr. W. F. Emptage was placed 1st, and Mr. T. Nutting, gr. to J. B. Maple, Esq., M.P., Childwickbury, 2nd. The 1st lot comprised *Microlepia hirta cristata*, *Gymnogramma chrysophylla*, *Adiantum Williamsii*, a beautiful specimen; *A. Farleyense*, *Nephrolepis exaltata*, and *Platynerium alcinense*.

Begonias.—For special prize offered by Messrs. J. Laing & Sons, of Forest Hill, for three named tuberous Begonias, Mr. C. Sibley came 1st with some finely-flowered plants.

Table Plants.—This class, for twelve table plants in 6-inch pots, was well filled, the 1st prize being gained by Mr. T. Nutting, of Childwickbury.

Cut Flowers: Roses.—In the class for forty-eight cut Roses, single trusses, of distinct varieties, Messrs. G. Paul & Sons, the Old Nurseries, Cheshunt, contributed a magnificent display of their choicest blooms, which would have maintained their ground in a much more extended competition, but owing to the preceding foul weather only two out of four competitors who entered in this class came forward.

Roses, not for competition, were contributed by Messrs. Cutbush, of Barnet, and contained some excellent varieties.

Dahlias.—Owing to the inclement weather the Dahlia classes did not fill satisfactorily; Messrs. G. Paul & Sons, Cheshunt, however, were conspicuous with twenty-four well-made blooms, which secured 1st prize. A very noticeable box of twelve varieties were shown by Mr. G. Arnold, of Leighton Buzzard.

Stove, Greenhouse, and Herbaceous.—In the class for twelve bunches stove and greenhouse cut flowers, distinct, Mr. S. Brown, gr. to Newin E. B. Cox, Esq., J.P., Moat Mount, Mill Hill, had little difficulty in carrying off 1st prize with a choice lot of *Stephanotis floribunda*, *Lapageria alba*, *Ixora Williamsii*, *Rose Niphetos*, *Cattleya Leopoldi*, *Lilium auratum*, *Allamanda*, *Pancratium fragrans*, *Agapanthus*, and *Eucharis amazonica*.

For twelve bunches hardy herbaceous cut flowers, distinct, there were seven entries, Mr. J. Henshaw, of Rothamsted Cottage, Harpenden, taking 1st, with magnificently grown and effectively staged examples of *Chrysanthemum latifolia*, *Gentium coccineum plenum*, *Anemone japonica* var. *flore albo*, *Tropæolum speciosum*, *Lathyrus latifolius* var. *alba*, *Rudbeckia speciosa*, syn. *R. Neumannii*, *Gypsophila paniculata*, and *Phlox decussata* var. *coccinea*. Dr. McLean, of Harpenden Hall, secured 2nd, with an admirable lot.

Non-competing Exhibits.—Messrs. W. Paul & Son, Waltham Cross, contributed a most interesting collection of cut flowers, of hardy herbaceous plants, Dahlias, and baskets of Roses, of every imaginable hue, the whole extending for some 25 to 30 feet along the side staging, an artistically arranged basket of *Lapageria rosea* and *L. alba* being especially.

Fruit.—The collections of fruit and individual dishes of the different sorts, were neither so plentifully shown nor so good in character as we have noticed on former occasions.

Mr. S. Brown, Moat Mount, Mill Hill, was 1st in the collection of eight dishes, and 1st in two bunches of black Grapes. Mr. T. Nutting, Childwickbury, secured 2nd in the collection of fruit, and 1st in two bunches of white Grapes and in a dish of six Peaches, this exhibitor taking Messrs. Wood's Silver Medal for the most meritorious exhibit in the fruit classes, grown by the aid of their Le Fruiter.

Vegetables.—The number of entries for the vegetable classes were the largest ever received by this Society. All were of capital quality, and those contributed by the cottagers, many of which came from the Rothamsted allotment gardens, the produce being such as would not disgrace any gentleman's garden. *Correspondent.*

ROYAL CALEDONIAN HORTICULTURAL.

THIS Society held its autumn show in the Waverley Market, Edinburgh, on the 5th and 6th inst. The show, as compared with the average, may be described as a thin one, there being a falling off in the fruit entries, and in the furnishing exhibits which contribute so much to the attractiveness of these great shows. The entries were about 1400, being 400 under last year which was in excess of the average.

In fruit, Grapes were, as usual, a leading feature, the Lambton, Newbattle, and Melville Castle exhibits being grand examples. Pine-apples were more numerous, and of finer quality than usual. Other indoor fruits were of average quality, though lacking in quantity in some important sorts. Hardy fruit was scarce and poor. This was most noticeable in the case of Peaches, Nectarines, and Apricots. Plums were better in quality, yet inferior to the usual standard shown at these shows. Strawberries were good but scarce. Gooseberries were fairly good.

Plants.—About the usual number and quality of stove and greenhouse plants, and Ferns, and table plants were tabled. Of hardy plants there were few exhibited, the most noticeable being the collection put up at the west end of the Market Hall by Messrs. Ireland & Thomson, a most attractive group, comprising the finer types of Conifers and other ornamental evergreens—*Clematis*, *Roses*, *Hydrangea paniculata grandiflora*, which were were interspersed with fine greenhouse *Rhododendrons* and *Clethra arborea* in flower.

Messrs. Dicksons & Co. had a fine table of miscellaneous greenhouse and stove plants, along with exhibits of cut flowers of French Marigolds and border Carnations, and Roses and Pansies. Among the Carnations was a stand of blooms of their new self, "Maggie Laurie" a delicate rose coloured variety of large size and fine substance, which was awarded a First-class Certificate. Messrs. Methven & Sons had a very fine table of plants of miscellaneous characters, chiefly stove and greenhouse, tastefully set up.

Mr. John Downie, Princes Street, exhibited a table 30 feet by 6 feet entirely filled with tuberous Begonias of very superior quality, which formed quite a feature of the show.

Messrs. Munro & Ferguson, St. Andrew Square, exhibited a numerous collection of cut hardy flowers both annual and perennial, among which were notable *Arnebia echioides* and other rare things among hardy perennials, and their new form of *Matricaria inodora pleno* named "Snowflake," which was awarded a First-class Certificate. The blooms are larger and purer in colour than those of the older form, and the plant is dwarfier, more compact in habit and equally floriferous with the latter sort.

Messrs. Laing & Mather, Kelso, exhibited cut blooms of Carnations and Picotees, among which was a stand of their new Carnation, R. H. Elliott, yellow ground streaked with crimson, a beautiful sort: awarded a First-class Certificate.

Mr. John Forbes, Buccleuch Nurseries, Hawick, had a very meritorious exhibit of Pentstemons, Antirrhinums Phloxes and Pansies, and the latter especially showing some very fine and distinct varieties.

Mr. Campbell, High Blantyre, tabled a splendid collection of choice Carnations and Picotees, Dahlias, and Hollyhocks, which were much admired.

Mr. Laing, gr., Salisbury Green, exhibited a fine plant of *Renanthera Lowii*, with spike of bloom composed of thirty blooms.

Messrs. Dicksons (Limited), Chester, had an interesting exhibit of hardy perennial cut flowers, among which was a new and beautiful border Carnation named Mrs. Reynolds Hole.

Messrs. Kerr & Son, Kalemouth, Roxburgh, exhibited some fine cut Hollyhocks; Messrs. Croll, Dundee, and Smith & Son, Stranraer, excellent Roses.

Turning to the competition lots, and taking Fruit first, the collection of twelve dishes, consisting of three dishes of Grapes, two of Peaches, and one each of any other sort except Pines and Bananas, brought only one lot, which was from Mr. Hunter, Lambton Castle. The Grapes were very fine, and there were some splendid samples of Marie Louise d'Uccle Pears and Worcester Pearmain Apples.

Eight dishes fruit, including Grapes, black and white, and any other description of fruit, brought a pretty numerous competition. Mr. Hunter was here again 1st, with splendid Grapes, Pears, Nectarines,

Pine, and Brockworth Pear as conspicuous features in the collection; Mr. McKelvie, Broxmouth, was a worthy 2nd.

In twelve dishes of hardy fruit, Mr. Fairgrieve had an easy 1st, with Hale's Early and Louise Peaches, Kirk's Plum, Orange Apricot, Pine-apple Nectarine, Jargonelle Pear, and Peasgood's Nonsuch Apple as the principal varieties in his collection; Mr. Law, Viewforth, Stirling, was 2nd.

Twelve dishes of orchard-house fruit brought Mr. Hunter again to the front. His collection contained some extraordinary samples of Pitmaston Duchess and Beurré Diel Pears, said to weigh each from 32 to 35 oz. He tabled also some excellent Queen Apple, Pine-apple Nectarine, and Coe's Golden Drop Plum.

A special prize, offered by Messrs. Thomson & Sons, Clovenfords, for eight bunches of Grapes, was taken by Mr. McHattie, of Newbattle Abbey, with a very superb lot, among which were some remarkable Duke of Buccleuch, Madresfield Court, Black Hamburg, and Muscat of Alexandria. Mr. Mackinnon, Melville Castle, stood a very good 2nd, with Gros Maroc, Black Alicante, Muscat of Alexandria, and superb Golden Hamburg.

In the bunch of four bunches of Grapes, distinct, Mr. McHattie again took the 1st place with splendid Gros Colmar, Madresfield Court, Muscat of Alexandria, and Black Hamburg; Mr. Mackinnon coming well up with beautifully finished stuff; and Mr. Boyd, Callendar House, Falkirk, was a close 3rd.

Class 7—two bunches of Muscat of Alexandria—was a prize presented to the Society by Convenor White, and was easily taken by Mr. McHattie, with splendid stuff; Mr. McKelvie was 2nd.

The next class, two bunches Black Hamburg, was again led by Mr. McHattie, with splendid samples, with Mr. Mackinnon a good 2nd. Competition was here keen, but all comers were distanced by the two leaders.

For one bunch of Muscat of Alexandria there were three entries; Mr. J. Green, Yester, took 1st prize easily; Mr. Caldwell, Ashley Bank, Langholm, being 2nd.

Class 12—one bunch Alnwick Seedling—placed Mr. Boyd 1st, with a splendid sample; Mr. Murray, Park Hall, being a fair 2nd.

Pines were fully above average as to quality and about the usual quantity. Mr. McIndoe, Hutton Hall, Guisborough, staged the finest Queen; Mr. McIntyre, The Glen, Peebles, the best Smooth Cayenne, and the best pair of Pines.

Melons were a tolerable show, but nothing special in quality was exhibited. The prize-takers, Mr. A. Young, with Best of All, green-fleshed, and Mr. Wm. Laing, Wellfield, Fife, in the red-fleshed section, with an unnamed fruit.

Some excellent Peaches were shown, the best coming from Mr. McLeod, Brentham Park, Stirling.

A bunch of Gros Maroc exhibited by Mr. McKenzie, Erisker Ledaig, was a special object of interest on account of the monstrous size of the berries. They were more like medium-sized purple Plums than Grapes.

Plants.—Tables arranged for effect, 20 feet by 5 feet, in the gardener's classes, brought two competitors—Mr. Grossart, Oswald Road, and Mr. Donaldson, Ormalie, Murrayfield. The former took 1st prize with a very tastefully got-up collection of fine well-grown plants. First honours in six stove and greenhouse plants were carried off by Mr. John Paterson, Millbank, with his usual fine stuff, among which *Erica obtata* and *E. Marnockiana* were conspicuous. In Orchids Mr. Curro, Eskbank, and Mr. Grossart, shared honours in their order; the former having a fine *Cattleya Dowiana* and *C. Gaskelliana*, well flowered, in his lot of four. Space will not admit of following the schedule in detail, and we must turn to the nurserymen's classes.

Messrs. Laird & Sons had a grand table of choice foliage and flowering stove and greenhouse plants, with which they took 1st prize. Crotons and Dracenas, beautifully coloured Orchids, among which were some fine *Cattleya Gaskelliana*, *Bouvardias*, &c., indicate the character of the materials, and they were arranged in the best taste. Messrs. Ireland & Thomson stood 2nd with a well arranged table of fine stuff.

Table plants were a considerable feature of the show, Messrs. Laird & Sons taking 1st honours, and Messrs. Ireland & Thomson 2nd—among nurserymen; while Mr. Grossart was 1st in the gardeners' class.

Some splendid Roses were tabled by Messrs. Cocker & Sons, Aberdeen, who took 1st prizes in the principal classes, and Mr. Hugh Dickson,

Belmont, Belfast, played a worthy 2nd to them with beautiful flowers.

Vegetables were a capital show, samples being both numerous and superior in quality. The collections, which were very fine, were keenly contested, but Mr. Low, of Stirling, was placed 1st with a very fine lot. Potatoes were numerous exhibited, and notwithstanding the rumours of disease were perfectly clean and beautiful samples. The show on the first day was numerously attended, the weather being very favourable.

The dinner took place in the Waterloo Hotel in the afternoon, under the presidency of Bailie Macdonald. The toast of the Society was proposed by Councillor Colston, and replied to by Mr. Thomson, Clovenfords, who touched on the general question of fruit culture.

BATH FLORAL FETE.

Of the four shows now held annually under the auspices of the Floral Fête Committee perhaps the autumn show is the most popular, and this year it must be regarded as of additional interest, owing to the city being honoured with the visit of the British Association. In connection with this latter event, there were a number of special classes for subjects mostly of botanical interest, and towards which the local committee voted a sum of £50. British Association Certificates of Merit have also been awarded to exhibits in these and other classes where these were considered specially meritorious. As in previous years, the show was held in Sydney Gardens, and was well attended. No fewer than eight tents were filled with exhibits; whilst most of the vegetable classes were, owing to want of space, placed outside.

Fuchsias.—These were a speciality of the show, and in few other districts do we meet with such huge specimens as we do here. For nine varieties, the plants in this class, as in some of the other classes, were 10 feet high, and full of bloom. The 1st prize was awarded to Mr. Tucker, gr. to Major Clarke; the varieties shown were Bountiful, Harriet Lye, Hon. Mrs. Hay, Doel's Favourite, Miss Lucy Finnis, Thomas King, Charming, and a rather promising seedling. Mr. Lye, gr. to Hon. Mrs. Hay, was 2nd.

For six varieties, Mr. J. Kiddeck, gr. to Mrs. Rinder, Bath, was 1st; Mr. Hawkins, gr. to Thos. Jolly, Esq., 2nd.

Three other classes of plants, one for four and two for single specimens, were also keenly contested.

Plants.—Some very good representative collections of these were to be met with, and in the class for twelve stove or greenhouse plants in bloom, Mr. J. Cypher, Cheltenham, was justly awarded 1st, with a clean and well flowered collection, consisting of *Bougainvillea glabra*, *Erica obbata purpurea*, *E. Thompsoni*, *E. Eweriana*, *E. ampullacea*, *E. Barnesi*, *E. Irbiana*, *Phenocoma prolifera* *Barnesi*, *Allamanda nobilis*, *A. Hendersoni*, *Statice profusa*, *Clerodendron Balfourianum*, and *Ixora Fraseri*. 2d, Mr. Tucker, gr. to Major Clarke, Trowbridge. In the class for six ditto, Mr. Mould, gr. to E. E. Bryant, Esq., was placed 1st, with a clean fresh lot of medium sized plants; 2nd going to Mr. Wills, gr. to Mrs. Pearce, of Southampton.

In the class for twelve ornamental foliage plants, Mr. Cypher was again to the fore, his plants being *Kentia Belmoreana*, *K. Fosteriana*, *K. australis*, *K. canterburyana*, *Cycas revoluta*, *C. undulata*, *Latania borbonica*, *Dasyllirion acrotrichum*, *Crotons*, several species—the whole of which were fine specimens, and the *Crotons* remarkable for high colour. The 2nd prize was awarded to E. E. Bryant, Esq., whose best plants were *Encyphalartos horridus* *Bryantianus*, *Acalypha mosaica*, *Croton elegans*, and *Latania borbonica*. In the class for eight ditto, Mr. Wills and Mr. Curry, gr. to Colonel Pepper, Salisbury, were 1st and 2nd respectively.

Orchids were not well represented. In the class for six specimens, Mr. Cypher was 1st, with *Oncidium incurvum*, *Cattleya guttata*, *C. Gaskelliana* var. *delicata*, *Odontoglossum grande*, *Mormodes luxatum* *eburneum*, and *Epidendrum prismatocarpum*; the 2nd going to Mr. Wills, of Southampton. Other classes for Heaths and single specimen flowering and foliage plants were in most instances well contested.

Ferns.—We regret that space precludes our giving anything like a detailed report of many exhibits that might be considered worthy of special notice suffice it to say that such high authorities as Colonel Jones, of Clifton, E. J. Lowe, Esq., of Chepstow, and J. M. Barne, Esq., of Clifton, were among the exhibitors of hardy Ferns, and that the trade was re-

presented by Messrs. Birkenhead, of Sale, Manchester, who had a collection similar to the fine one shown in London recently. Some of the most noteworthy plants in this collection were *Gymnogramma schizophylla* var. *gloriosa*, *Notholaena Muelleri* (a very attractive and singular-looking species), *N. sinuata*, *Adiantum Fergusoni*, *A. palmatum*, and some other 300 species and varieties in about 600 plants. We must also note a large collection exhibited by the British Zoological Society not for competition, and chiefly with an educational object in view, which we do not doubt amply fulfilled its purpose. This collection, which was under the care of Mr. Harris, and were mostly collected and raised from seed originally by Colonel Jones, contained from 2000 to 3000 plants, and were arranged in the form of a long irregular border, faced with rockwork and boulders of stone, placed in the borders at intervals, and was greatly admired.

In the class for twelve Exotic Ferns Mr. Tucker was 1st, and Thomas Carr, Esq., of Tiverton, 2nd.

Miscellaneous Groups of plants and cut flowers were exhibited by Messrs. R. Veitch & Son, of Exeter; R. Smith & Co., of Worcester; Sutton & Sons, of Reading; each and all of whom exhibited many novelties, and which were much admired.

Cut Flowers were fully represented by numerous well-known exhibitors.

For thirty-six Roses Dr. Budd, of Bath, was placed 1st, his best blooms being *Mad. Lambard*, *Marie Van Houtte*, *Star of Waltham*, *Horace Vernet*, *Mdme. Charles Wood*, and *Fisher Holmes*; 2nd, Messrs. Perkins, of Coventry.

In the class for twenty-four blooms Messrs. Cooling & Sons were placed 1st, with good blooms of *Duc de Rohan*, *Grace Darling*, *Captain Chritty*, *La France* and others; 2nd, Dr. Budd.

Dahlias, twenty-four dissimilar.—Messrs. Keynes, Williams & Co., of Salisbury, 1st, with large, clean, well developed blooms, in so far as these are obtainable this unpropitious season; 2nd, Messrs. Heath & Son, of Cheltenham.

For twelve varieties Mr. Hobbs, of Bristol, took 1st; and for nine fancy ditto Messrs. Keynes, Williams & Co. occupied a similar position.

Gladioli, thirty-six spikes.—Messrs. Kelway & Son were placed 1st for a very meritorious collection; 2nd, Samuel Dobree, Esq., of Wellington.

Table Ornament.—Mr. Cypher, 1st; Mr. Jones, 2nd. Messrs. Cooling exhibited some excellent Tea Roses, not for competition.

Fruit.—This was a great point of attraction to the majority of visitors, and was remarkable for the quality and quantity.

Collections of eight dishes had an imposing appearance, as may well be imagined, when it is stated that dishes of Peaches, Nectarines, Pears, and Figs, contained nine fruits in each. The 1st prize was gained by Mr. Pratt, gr. to the Marquis of Bath, Longleat, who had Black Alicante and Muscat of Alexandria Grapes, Barrington Peaches, Hero of Lockinge Melon, Moor Park Apricot, Morello Cherries, Elruge Nectarines, and Washington Plums; 2nd and 3rd were taking respectively by Mr. Nash, of Badminton, and Mr. Miller, of Rood Ashton.

Peaches, single dish.—1st, Mr. G. H. Richards, Somerset, Ringwood; W. Butter, Esq., 2nd.

Nectarines.—1st, Mr. Pym, 2nd, Mr. J. Curtis. Single dishes of Cherries, Plums, Figs, were equally well contested as the foregoing.

For three dishes of dessert Apples, Mr. Hall and Mr. W. Smith, of Bath, were awarded 1st and 2nd respectively; for culinary ditto, Mr. Miller and Mr. Hall occupied similar positions.

Grapes.—The class for twelve bunches in six varieties was one of the most important in the whole show, and although there were only two exhibitors the exhibits were characterised by very great merit. 1st, Mr. Taylor, gr. to J. Chaffin, Esq., of Bath, with Black Alicante, Alnwick Seedling, Muscat of Alexandria, Gros Maroc, Madresfield Court, and Black Hamburgh; 2nd, Mr. Pratt, his best bunches being Black Alicante, Muscat of Alexandria, and Foster's Seedling.

Six bunches in three varieties.—Mr. Taylor was again placed 1st, Mr. Pratt 2nd, and Mr. Gibson, gr. to Early Cowly, was 3rd.

Black Hamburghs, three bunches.—Mr. J. Chalk, gr. to G. Read, Esq., was placed 1st, the 2nd and 3rd going to A. Coles, Esq., and Mr. Gibson.

Muscat of Alexandria, two bunches.—Mr. Coates, Mr. Pratt, and Mr. Taylor, took the prizes in the order named.

Any other White.—1st, A. Cole, Esq., 2nd, Mr. Pratt. Any other Black.—1st, Mr. T. Jones, with Alicante; 2nd, Mr. Pratt, with Alnwick Seedling.

Vegetables.—For collection of twelve varieties Mr. Pragnell, gr. to J. D. Wingfield Digby, Esq., was 1st; his best exhibits were Autumn Giant Cauliflowers, Hackwood Park Tomatoes, Veitch's Matchless Carrots, Rousham Park Onions, Tender and True Cucumber, Parsnips, Artichokes and Snowball Turnips; 2nd, Mr. Copp; 3rd, Mr. Wilkins. Collection of six varieties, for prize offered by Messrs. Sutton & Sons: 1st, Mr. Pragnell; 2nd, Mr. Wilkins. For a similar collection, Messrs. Webb offered prizes in this instance, the awards going to Mr. Pragnell and Mr. Miller in the order named. Collections of Potatoes and single dishes of various other vegetables were shown in large numbers, and in some instances the competition was keen.

BASINGSTOKE HORTICULTURAL.

THURSDAY, AUGUST 23.—The exhibition of this horticultural Society was held as usual in the "Goldings." The numerous plants, cut flowers, fruit, &c., made a most satisfactory exhibition, and the competition in most of the classes was severe, while the quality of much of what was shown was quite up to the average. The arrangements made by Mr. Weeks, the able Secretary of the Society, afforded much satisfaction to all concerned.

Plants.—The leading class was for twelve specimens, and these might be flowering or foliage, four growers competing. Mr. Bowerman, gr. to C. Hoare, Esq., Hackwood Park, Basingstoke, was 1st, his plants being healthy and well grown: *Cycas revoluta* and *Allamanda Hendersoni* were the finest. 2nd, Mr. F. Mould, Pewsey, Wilts, with smaller specimens, including nicely-flowered Heaths.

For six stove and greenhouse plants in flower, Mr. Mould was 1st.

Foliage plants were shown well by Mr. Bowerman, who was an easy 1st. Mr. T. Weaver, gr. to W. B. Beach, Esq., Oakley Hall, Basingstoke, staged in the single specimen class a very fine example of *Eucharis amazonica* with more than fifty spikes of bloom; and Mr. T. Russell was 2nd, with a well-grown specimen *Fuchsia*. Mr. Beaver gained 1st prize for exotic Ferns, his plants being large and well done. Hardy Ferns were best staged by Mr. Kneller, gr. to W. S. Portal, Esq., Malshanger Park, Basingstoke. Mr. Russell had the best *Fuchsia*, which was neatly trained and freely flowered. Table plants made a satisfactory feature, the best coming from Mr. T. Best, gr. to C. W. Chute, Esq.; Mr. Kneller following very closely. For a semicircular group not exceeding a 16 feet chord, Mr. Weaver won easily the 1st prize. The plants were of a varied character, and consisted of flowering and foliage plants put lightly together.

Fruit.—Mr. Best put up the only collection shown, which was one of six dishes, Pines being excluded. The Black Hamburgh Grapes, Peaches, and Nectarines were about his best fruit. In the class for Black Hamburgh Grapes there were six competitors, and Mr. T. Osman, gr. to L. J. Baker, Esq., Otter-shaw Park, Chertsey, was easily 1st with large, heavily shouldered bunches having large, well coloured berries; Mr. Kneller, in the any other black Grape class was awarded 1st prize, with two bunches of Gros Maroc, the bunches being of medium size with fine berries; Mr. Osman with Alicante taking the 2nd. The best Muscats of Alexandria were shown by Mr. Osman; and he also was 2nd for two bunches of any other white Grape—Mr. Kneller, with fairly good Buck and Sweetwater, being 1st.

Melons were not a conspicuous feature in the show; Longleat Perfection, from Mr. Kneller, being the best green-flesh variety, while Mr. Bowman's Blenheim Orange was considered the best scarlet flesh. This competitor also was 1st for a dish of Nectarines, finely coloured Elruge; handsome Noblesse Peaches, secured the 1st prize for Mr. Russell.

Vegetables.—These were shown in large quantities, of good quality, and the competition was keen. For twelve kinds, with not more than two varieties of Potatoes included, five competed. 1st, Mr. R. Lye, gr. to W. H. Kingsmill, Esq., Rousham Park Onion, Snowball Turnip, Ne Plus Ultra Runner Bean, and Autumn Giant Cauliflower being his best dishes.

For six varieties, prizes given by Messrs. Webb & Sons.—1st, Mr. Kneller, with capital produce; as he likewise was for Messrs. Sutton & Sons' special prizes for six varieties.

For a collection of nine varieties of Potatoes, nine tubers of each.—1st, Mr. F. W. Seers, gr. to Captain Oldfield, his tubers being large, clean, and symmetrical, and comprised some of the leading varieties.

Messrs. Sutton & Sons' showed plants of their new netted strain of Gloxinias, and to whom a Certificate of Merit was awarded. The same firm exhibited a very fine collection of cut flowers of hardy perennials and annuals.

SCOTLAND.

DUNKELD FRUIT CONFERENCE.

THE invitation of Mr. Fairgrieve, announced in your issue of August 25, to leading gardeners and others interested in fruit culture to meet at Dunkeld Gardens for the purpose of inspecting the hardy fruit grown there, and conferring together on the subject, was numerously responded to on Friday, the 31st ult. Seventy-five gardeners, amateurs, and nurserymen from various parts of the country, met about 10 A.M. that morning under exceptionally fine weather, each obviously intent on making the most of the opportunity provided him to increase his knowledge of the subject that had brought them together. Among the company were Mr. Dunn, of Palace Gardens, Dalkeith, who was chairman of the Conference; Messrs. James Alexander and W. Welsh, of Messrs. Dicksons & Co., Edinburgh; D. P. Laird, of Messrs. Laird & Sons, Edinburgh; A. Milne, of Jas. Dickson & Sons, Edinburgh; R. B. Laird, of Messrs. Laird & Sinclair, Dundee; D. Croll, Dundee; Gossipp, Inverness; McKenzie, Warriston Nursery, Edinburgh; Davidson, Pilrig Nursery, Edinburgh; R. Lindsay, Royal Botanic Garden, Edinburgh; W. E. Dixon, Edinburgh; W. Straton, Broughty Ferry; D. P. Scott, Monifeth; McKelvie, Broxmouth; Boyd, Callendar House; McHattie, Newbattle Abbey; Murray, Culzean; McKinnon, Scone Palace; Henderson, Balbirnie; Temple, Carrow House, &c.

The beautiful natural features of this splendid Highland residence the visitors could only glance at and admire, and considerations of space, as well as the special object of the Conference, forbid dwelling on such points as were noted in the memory in the brief tour we made of the grounds after our inspection of the fruit was concluded. The general character of the place is most picturesque, highly deserving of more than passing notice, and at some future time I may be permitted to return to the subject more fully.

The *Glasshouses*, which lie on the way to the fruit and vegetable garden to the right from the entrance gate, consist of six vineries, several Melon, Cucumber, Fig and Peach-houses, and others devoted to stove and greenhouse plants and Orchids. The Vines are in fine health. The earlier crops were cut, but in the late houses Black Alicante, Lady Downe's, Muscat of Alexandria, &c., were a splendid crop and finishing well, but are considered by Mr. Fairgrieve to be later than usual, owing to the backward summer. Fine crops of Melons, Peaches, Nectarines and Figs were found in other houses, and Tomatos and Cucumbers were striking in their excellence and abundance. Passing on,

The *Fruit and Vegetable Garden* lies immediately beyond the houses, in a north-westerly direction, and the visitors were struck with their admirable situation. The garden is from 6 to 7 acres in extent, situate on the lower slope of the south side of the lofty Pine-clad hill of Craigeibarns, which is one of several similar hills that surround the beautiful grounds of Dunkeld on all sides. The surface angle is rather steep, rendering the working of the soil and other operations somewhat heavy. The soil is deep loam of medium texture, resting on sandstone, and the drainage is perfect. The walls are built in a semicircular or crescent form, extending from east to west, and the borders parallel to them are all unusually steep, owing to the necessity for depressing their outer edges to meet the level of the walks, which lie much below the level of the base of the walls. The variety of aspect, owing to the curvature of the walls, is considerable; but by far the larger portion is south and south by west, there being less of an easterly aspect than in most gardens in which the walls are built in the ordinary rectan-

gular form. The walls were inspected under the guidance of Mr. Fairgrieve, who commented on the merits of each sort of fruit tree from the point of view of its adaptability to the climate and other conditions of Dunkeld. As Peaches, Apricots, Plums, &c., were somewhat intermixed on the walls, it will be more convenient to describe them in generic order than as they turned up in their sequence on the route, and I will begin with—

Peaches and Nectarines, as they were perhaps the greatest surprise to the visitors. Not many districts in Scotland can boast a climate in which Peach and Nectarine trees may in ordinary seasons be depended upon to produce good crops of fruit in the open air. Dunkeld is one of the few districts that may claim such a favourable climate in so adverse a summer as we have experienced this year. The crops this season are not so uniformly good as they usually are, owing to the intense frost experienced in March, when many of the trees were in bloom. On the 17th of that month the thermometer descended to 4° above zero, consequently, the crops are generally less abundant than usual, and some trees were completely denuded of their flowers by the killing temperature of that date; yet there is a fair sprinkling of fine fruit on most of the Peaches and Nectarines. Royal George Peach is one of the best varieties for the locality, and one of it was the finest tree in the garden. This tree measured about 30 feet on a wall about 11 feet high, was in perfect health, and bore 170 fruit, of good size and splendid colour. Early Alfred Mr. Fairgrieve considers one of the hardiest and freest-bearing Peaches for the open air. The quality and size are not quite up to the highest standard, yet he considered it an indispensable sort to those in unfavourable districts, and being one of the earliest it augments the season of supply. Early York has similar qualities to recommend it, being early, prolific, and rarely missing crop. Hale's Early is an especial favourite with Mr. Fairgrieve. On a young tree of moderate size sixty very fine fruit showed themselves, taking on a remarkably fine colour. Rivers' Early York was bearing some fine fruit, but Mr. Fairgrieve finds it liable to the serious objection of cracking in the open air. Early Albert was considered an excellent sort, and a free bearer. Early Silver was bearing a light crop, and is a good sort in good seasons, much admired for the peculiar silvery colour of its flesh and fine quality, and for being among the earliest.

Of Nectarines, the best were Lord Napier and Pine-apple; a fine young tree of the latter had eighty fine fruit upon it. The former, although it bears freely, is generally too late to finish well in the district.

Apricots.—Of these, Large Early and Hemskirk were found best adapted to the district. The 1st named is undoubtedly the best, being always to be relied upon, and of fine quality and good size. One fruit, pulled at random from a tree bearing a heavy crop, was weighed on the ground and turned the scale at 3½ oz. Breda, though small, is accounted a reliable sort for the district.

Plums.—Crops of these were abundant. On the walls were splendid trees of Pond's Seedling, Kirk's Prince of Wales, Cox's Golden Drop, Jefferson, Green Gage, Cox's Emperor, Lawson's Golden Gage, Ickworth Imperatrice, Goliath, Victoria, Rivers' Early Prolific and St. Catherine; and these varieties are most relied upon in the district. Cox's Emperor and Cox's Golden Drop are found by Mr. Fairgrieve invaluable late sorts, being the latest to ripen, and keeping three weeks good without loss of flavour after they are ripe. Kirk's was considered by Mr. Fairgrieve the very best Plum in the list, taking quality and crop combined into account. Jefferson's he regarded as the best light-coloured sort, everything considered, for his district. Green Gages were fine quality and fair crops even this adverse season, but left nothing to be desired in good seasons. Transparent Gage, on the other hand, was valueless, and was to be done away with. The Imperial Gage bore the same character, and would share the same fate. As standard trees, Victoria and Caledonian Plums

were unsurpassably valuable, being sure and prolific bearers, and good in their way.

Cherries.—Of these there were excellent crops on trees of late kinds. Late Duke was superb, alike in crop and quality. Morellos were very abundant, Belle Agathe, valuable chiefly as being one of the latest sorts, hanging till the end of September, was represented by young trees seemingly about three years planted, but had their flowers destroyed in spring. As early and second early sorts, May Duke, Frogmore, Black Eagle, Bigarreau Napoleon, and Bowyer's Early Heart, were found admirable sorts for the district.

Pears.—Of these few are grown, and only one variety—Jargonelle—showing crop worthy of the term either in respect of quantity or quality. It was excellent in every respect.

Apples were more plentiful but not anything approaching the bulk of an ordinary crop on even such varieties as were fruiting at all. These were chiefly Lord Suffield and Keswick Codlin, which were bearing half crops or less, while Hawthornden, Irish Peach, Cellini, and others showed only a fruit here and there, and those by no means healthy and promising.

This brought the inspection of the hardy fruit to a close, and in so far as the Peaches, Nectarines, Apricots, and Plums, were concerned, the visitors may be said to have been most agreeably impressed with the success of Mr. Fairgrieve in cultivating so successfully these choicer fruits, in such an unlikely district as this Highland glen—which, however, appears to be a veritable Paradise. The party then rapidly visited the famous Larches, the earliest planted in Scotland (planted 1738); the fine old Abbey which stands near the mansion, and a well filled conservatory attached to the latter, and then adjourned to the Public Hall, Dunkeld, to lunch.

The Conference.—After luncheon, over which Mr. Dunn presided, with Messrs. Lindsay and McKelvie as croupiers, the company spent some two and a half hours' in conference. The Chairman, in a brief opening address, alluded to the growing importance of hardy fruit culture in this country. He believed it likely that farmers and others would in future give more attention to the subject than they had in the past, and while they might not all make fortunes in fruit culture, he was of opinion that it would be generally advantageous. It was important to confer with each other on the varieties of hardy fruit best adapted to different districts. They had seen to-day what could be done in the district they were now in—"a favoured but by no means rarely favoured spot." Accuracy in nomenclature was obviously an important point to study, and while the best methods of culture of the several kinds of hardy fruits ought to engage the attention of every one interested in the subject, the proper gathering, assorting, packing, unpacking, and even the proper way of eating the fruit should receive more attention. The Chairman then read some interesting details of the thermometrical experiences at Dunkeld of the recent spring and summer. March showed a variation of from 1° to 28° of frost; April gave twelve nights of frost varying from 3° to 14°. From May 1 to 5 the thermometer was slightly under freezing-point; during May, June, July, and August only two or three nights did the minimum rise to 45°; on May 11 and 12 it descended to 24° and 26° respectively. It reached 50° only in July, on the 11th, but again on the 31st of that month it descended to 29°. That morning (August 31) the thermometer indicated 32°, and the two previous mornings 33° and 38° respectively. These temperatures were not favourable to fruit growing, yet they had seen that, with good treatment and young healthy trees, fair crops of excellent fruit could be produced.

The Chairman then invited a discussion on the culture of the Apricot, Peach, Plum, and Cherry, which was entered into by Messrs. McHattie, Temple, McKelvie, Murray, Boyd, Milne, and Bisset, the result of which was to draw some general remarks from Mr. Fairgrieve respecting certain points of his practice. In regard to pruning he said he

favoured keeping the branches thin. By that means the wood became better ripened, and the trees were maintained in good health. He regularly protected his trees—Apricots, Peaches, Plums, &c.—at night, when in bloom and during the day also if an east wind blew. He never put a Peach, or any other tree, when planting it, in soil which had been occupied by the roots of the same kind before, and he used every means in his power to keep the roots near the surface, and was in favour of mulching.

Mr. McKenzie, referring to the advantages that accrued from such conferences, expressed the hope that the results of their meeting that day would not be evanescent. Hardy fruit culture had not made the progress during the past fifty years that certain other departments of horticulture had made, and he suggested that an association should be formed for the purpose of accelerating the progress and disseminating a sound knowledge of the art they had met to confer upon. He thought the matter might well be taken up by some central existing society.

Mr. R. B. Laird cordially approved of the suggestion made by Mr. McKenzie, and promised to do everything in his power to aid in its realisation.

A vote of thanks to Mr. Fairgrieve for his kindness and courtesy was proposed by Mr. Milne, and heartily accorded by the meeting, and a similar courtesy to the Chairman brought the meeting to a close.

Obituary

MR. CHARLES MARKHAM, whose death, after a long illness, announced in the *Times* of September 1, was the Managing Director of the Staveley Company, which has very extensive coal and iron works near Chesterfield in Derbyshire. He was in early life Locomotive Superintendent of the Midland Railway, and took an active and prominent part in its development and administration. His strong good sense and energy of character enabled him through life to exercise great influence over the mining population. He occupied a prominent place among the younger men who took up the work of railway extension and development at the point at which it was left by the father of the system, George Stephenson, and he died at Tapton House, near Chesterfield, which was also Stephenson's last residence. Mr. Markham married Rosa, third daughter of Sir Joseph Paxton, and has left behind him a family of two sons and two daughters.

THE WEATHER.

THE PAST WEEK.

The following summary record of the weather for the week ending Sept. 3, is furnished from the Meteorological Office:—

The *weather* has been cloudy, unsettled, and changeable in all parts of the kingdom, and with a good deal of rain and some thunder and lightning.

The *temperature* has been below the mean in all districts, the deficit ranging from 1° or 2° in Scotland to 4° in the east and south-west of England, and 5° in the "Midland Counties." The highest of the maxima, which were recorded on rather irregular dates, varied from 63° in 'England, N.W.' and 65° in 'Ireland, N.' to 70 in 'England, E.' and 71° in the 'Midland Counties.' The absolute minima, which were registered in most places either on Aug. 31 or Sept. 1, were as low as 36° in the east of Scotland, over eastern, central, and south-west England, and between 38° and 41° in most other districts. In 'England, N.E.' however, the lowest reading was 44°, and in the 'Channel Islands' 50°. Frost was experienced on the grass over the inland parts of England during the early morning of the 1st, when the exposed thermometer fell to 31° in London and to 28° at Hillington.

The *rainfall* has been a little less than the mean in 'Scotland, E.,' 'Scotland, W.,' and 'Ireland, S.' but more in all other districts, the excess over England being considerable.

Bright sunshine does not differ materially from that recorded last week, except in Ireland, where it

has been less prevalent. The percentage of the possible amount of duration varied from 19 in 'Scotland, N.' and 21 in 'Ireland, N.' to 36 in 'England, S.,' 38 in 'England, S.W.,' and 46 in the 'Channel Island.'"

MEAN TEMPERATURE OBSERVED AT OHISWICK DURING THE WEEK ENDING SEPT. 15. (AVERAGE OF FORTY-FOUR YEARS.)

Sept. 9	58°.9	Sept. 13	58° 1
" 10	58° 7	" 14	58° 0
" 11	58° 5	" 15	57° 8
" 12	58° 3	Mean for the week	58° 3

[Accumulated temperature indicates the combined amount and duration of the excess or defect of temperature above or below 32° F. for the period named, and is expressed in Day-degrees—A "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.				
	Above or below the Mean for the week ending Sept. 3.	ACCUMULATED.			
		Above 42° for the Week.	Below 42° for the Week.	Above 42° difference from Mean since Jan. 3, 1888.	Below 42° difference from Mean since Jan. 3, 1888.
Principal Wheat-producing Districts.		Day-deg.	Day-deg.	Day-deg.	Day-deg.
0. SCOTLAND, N. ...	1 below	71	0	- 214	+ 201
1. SCOTLAND, E. ...	1 below	81	0	- 388	+ 157
2. ENGLAND, N.E. ...	2 below	90	0	- 416	+ 73
3. ENGLAND, E. ...	4 below	95	0	- 340	+ 154
4. MIDLAND COS. ...	5 below	86	0	- 402	+ 150
5. ENGLAND, S. ...	3 below	104	0	- 439	+ 204
Principal Grazing, &c., Districts.					
6. SCOTLAND, W. ...	2 below	82	0	- 288	+ 107
7. ENGLAND, N.W. ...	3 below	89	0	- 323	+ 117
8. ENGLAND, S.W. ...	4 below	91	0	- 415	+ 254
9. IRELAND, N. ...	3 below	85	0	- 258	+ 67
10. IRELAND, S. ...	2 below	96	0	- 236	+ 113
— CHANNEL ISLANDS	2 below	118	0	- 316	+ 154

DISTRICTS.	RAINFALL.			BRIGHT SUNSHINE.	
	More or less than the Mean for the Week.	No. of Rainy Days since Jan. 5, 1888.	Total Fall since Jan. 3, 1888.	Percentage of possible Duration for the Week.	Percentage of possible Duration since Jan. 3, 1888.
Principal Wheat-producing Districts.	Tenths of Inch.		Ins.		
0. SCOTLAND, N. ...	6 more	160	26.0	19	29
1. SCOTLAND, E. ...	2 less	142	20.4	30	30
2. ENGLAND, N.E. ...	3 more	131	18.9	26	26
3. ENGLAND, E. ...	7 more	34	18.1	35	28
4. MIDLAND COS. ...	6 more	122	17.8	33	27
5. ENGLAND, S. ...	4 more	123	18.7	36	28
Principal Grazing, &c., Districts.					
6. SCOTLAND, W. ...	4 less	134	28.8	30	1
7. ENGLAND, N.W. ...	6 more	134	20.3	26	28
8. ENGLAND, S.W. ...	8 more	139	23.9	38	34
9. IRELAND, N. ...	1 more	141	25.4	21	28
10. IRELAND, S. ...	3 less	128	25.5	27	33
— CHANNEL ISLANDS	1 more	151	20.5	46	39

PUBLICATIONS RECEIVED.—*The Trees of Commerce.* By W. Stevenson. (London: W. Rider & Son, 14, Bartholomew Close, E.C.)—*Walks in the Ardennes.* By Percy Lindley. (London: 125, Fleet Street, E.C.)—*A Popular Summary of the Law relating to Local Government.* By G. F. Chambers, F.R.A.S. (London: Stevens & Sons, 119, Chancery Lane.)

NOTICES TO CORRESPONDENTS.

INTELLIGENT READERS, do PLEASE NOTE that letters relating to ADVERTISEMENTS, or to the supply of the Paper, should be addressed to the PUBLISHER, and that all communications intended for publication, as well as specimens and plants for naming, should be addressed to the EDITOR. Such communications should be written on one side only of the paper, and sent as early in the week as possible. Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

CORRECTION.—In the report of the Sevenoaks show, in our issue for September 1, the *Dipladenia amabilis*, shown by Mr. Gibson, gr., Halstead Place, possessed 147 blooms, not forty-seven, as there stated.

DRYING FLOWERS, &c., FOR THE HERBARIUM: *Several Correspondents.* See *Gardeners' Chronicle* for January 21 last, p. 82.

DOUBLE WHITE LAPAGERIA: *J. C.* Many thanks; a more double flower was noticed last week.

EUCARIS BULES: *K. & B.* We failed to find any trace of the bulb-mite.

FOUR-LEAVED CLOVER: *C. G.* This is of common occurrence in rich land. As to the saying, of good luck attending the finder, we suppose it is on a par with a great deal of folklore on similar subjects.

GRAPES IN BAD CONDITION: *J. C.* If "J. C.," who wrote to us about his Grapes recently, will send his address to J. Burt, 166, Boundary Road, Walthamstow, he may hear from him something which may prove of service in Vine growing.

INSECTS: *W. W.* It is difficult, without more precise information, to decide on the cause of the injuries to the different kinds of leaves and shoots sent. We, however, found several young mealybugs (*Coccus adonidum*) amongst them, and also a young apterous Psocus. The plants did not appear to have been well cared for from the specimens sent. *I. O. W.*

LILIU AURATUM: *A. F. L.* Both red and golden banded flowers are common, and the trade sometimes sell them under distinctive names.

NAMES OF PLANTS: *E. C. C. D.* *Calamintha clinopodium*, common on limestone soils.—*T. J., Walton.* Next week.—*G. C.* *Lilium pomponium* probably.—*B. A. 1.* *Stanhopea Wardiana aurea*; 2, *S. Devonensis*.—*J. Cameron.* *Hyoscyamus niger*.—*R. L.* *Clethra alnifolia*.—*R. N. 1.* *Polygonum Sieboldi*; 2, *Bocconia cordata*; 3, insufficient: possibly a *Rudbeckia*; 4, *Aconitum napellus*.—*C. M. O.* *Orlaya grandiflora*; *Inula britannica* var.; the *Cheiranthus* we cannot name. Where is it from?—*A Correspondent.* 1, *Sisyrinchium anceps*; 2, *Achillea Clavennæ*.

ROSEMARY AND TROPÆOLUM SPECIOSUM: *J. P.* The former may be grown from seeds sown on a warm border in April or May, or from cuttings (slips) about 6 inches long put in now in sandy soil under a handglass. To obtain strong plants, without much delay layering is to be recommended. It should be done at once, and the rooted part, with its ball of earth and roots, removed early next autumn. The latter is increased by seeds, and by the division of its underground rhizomes.

SEEDLING CARNATION: *H. T.* The flower sent is darker than the common Clove Carnation, but it has the same grateful perfume, and the flowers, being only of half the size of that variety, it is better suited for some kinds of florist's work.

SOME HARDY PERENNIALS FLOWERING IN AUGUST AND SEPTEMBER: *W. R.* *Tritoma uvaria*, *T. glaucescens*, *T. gramineus*, *Phlox decussata* in great variety, *Gaillardia*, early flowering *Chrysanthemums*, *Aster amellus*, *A. Bessarabicus*, and others; *Eryngium album*, *Monarda didyma*, purple and scarlet vars.; *Ceanothus pumila*, *C. Youngi*, *C. Fraseri*, *Stenactis speciosa*, *Solidago arguta*, *S. nemoralis*, *Pentstemon gentianoides*, in great variety; *Campanula persicifolia*, *Rudbeckia hirta*, *R. fulgida*, *Helianthus album plenum*, *H. grandiflorum plenum*, *Lathyrus latifolius*, in variety; *Achillea ptarmica alba flore-pleno*, *Spiræa palmata*, *Bocconia cordata*, *Chelone barbata*, *Anemone japonica*, *A. j. Honorine Jobert*, *Violas*, *Tropæolum polyphyllum*, *T. speciosum*, *Gladiolus*

gandavensis, G. hybridus Lemoinei, Lilium auratum, L. lancifolium, L. l. punctatum, L. l. rubrum, and Agapanthus umbellatus.

TOMATO ROT: A. S. Yes, they are affected by a fungus identical with, or very nearly allied to, the Potato-fungus. We fear you can do nothing in the way of cure, but you can prevent its spreading by destroying all affected plants.

CATALOGUES RECEIVED.

B. GILBERT, Dyke, Bourne, Lincs.—Bulbs and Anemones.
V. DÖPFLE, Erfurt—Dutch Bulbs, Flower Roots, and Seeds.
THYNE & PATON, 18 and 20, Union Street, Dundee—Dutch Bulbs, Lilies, and Spring Flowering Roots.
W. FELL & Co., Hexham—Dutch Bulbs, Narcissus, Herbaceous and Alpine Plants.
OAKENHEAD & Co., 86, Patrick Street, Cork—Dutch and Cape Bulbs, Plants and Seeds.
T. IMRIE & SONS, 187, High Street, Ayr—Dutch Flower Roots.
W. SMITH & SON, 18, Market Street, Aberdeen, N.B.—Dutch Flower Roots.
THE LIVERPOOL HORTICULTURAL COMPANY (J. COWAN), Limited, Garston—Dutch Bulbs, Narcissus, Gladiolus, and Miscellaneous Bulbs.
MESSRS. HARRISON & SONS, Market Place, Leicester—Flowering Bulbs and Roots.
SOCIÉTÉ ANONYME L'HORTICULTURE INTERNATIONALE (J. LINDEN), 79, Rue Wiertz, Parc Leopold, Brussels—Orchids and New Plants.
BARR & SON, 12 and 13, King Street, Covent Garden—Cultivated Bulbs of all Kinds.
TATE & Co., 119 and 120, Capel Street, Dublin—Dutch Bulbs, &c.
J. CARTER & Co., 237 and 238, High Holborn, London—Dutch and other Bulbs.
J. LAING & SONS, Forest Hill, London, S.E.—Bulbs, Fruit Trees, Shrubs, Begonias, and Seeds.
T. DAVIS & Co., Wavertree, Liverpool—Dutch Bulbs, &c.
J. VERTAEVE, Ledebourg lez Gand—Azalea indica.
MESSRS. CLARK, BROTHERS & Co., 65, Scotch Street, Carlisle—Spring Flower Roots.
JOHN WATERER & SONS, Bagshot, Surrey—American Plants, Conifers, &c.

COMMUNICATIONS RECEIVED.—Thos. Imrie & Co.—W. Bennett—J. J. W. T.—E. A. Bourne—G. R. K.—F. M. R. A. R.—J. C. W.—G. W. S.—Carnation, shortly.—G. Vallance, (par. not in time for insertion).—E. B.—H. W. Ward.—Messrs. Hender & Sons.—G. W.—S. Rawson.—J. C.—H. E.—T. Honeychurch.—T. H. P.—J. Ward.—J. W.—J. Hughes.—J. B.—J. R.—A. D.—J. S.

Correspondents sending plants or fruits to be named, or asking questions demanding time and research for their solution, must not expect to obtain an answer to their enquiries in the current week.

DIED, on Saturday, September 1, at Gunnersbury Park Gardens, Acton, the wife of Mr. JOHN ROBERTS, after a long illness.

MARKETS.

COVENT GARDEN, September 6.

BUSINESS very dull, with short supplies of sieve fruit. Channel Islands produce in heavy supply. Best Peaches in demand. James Webber, Wholesale Apple Market.

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Apples, half-sieve	2 0-4 6	Peaches, dozen	2 0-10 0
Elberts, 100 lb.	80 0-...	Pine-apples, Eng., lb.	2 0-3 0
Grapes, per lb.	0 6-2 0	Plums, half-sieve	2 6-1 6
Lemons, per case	12 0-21 0	—St. Michael, each	2 0-5 0
Melons, each	1 0-3 0		

VEGETABLES.—AVERAGE RETAIL PRICES.

	s. d. s. d.		s. d. s. d.
Artichokes, p. doz.	4 0-...	Mustard and Cress, punnet	0 4-...
Beans, Kidney, lb.	0 4-...	Onions, per bunch	0 5-...
Beet, red, per dozen	1 0-2 0	Parsley, per bunch	0 4-...
Carrots, per bunch	0 6-...	Potatoes, per cwt.	4 0-5 0
Cauliflowers, each	0 4-...	.. kidney, per cwt.	4 0-5 0
Celery, per bundle	1 8-2 6	Shallots, per lb.	0 6-...
Cucumbers, each	0 6-0 9	Spinach, per bushel	3 0-...
Endive, per dozen	3 0-...	Tomatoes, per lb.	0 9-1 0
Green Mint, bunch	0 4-...	Turnips, per bunch, new	0 5-...
Herbs, per bunch	0 4-...	Vegt. Marrows, each	0 2-...
Leeks, per bunch	0 6-...		
Lettuce, per dozen	1 6-...		
Mushrooms, punnet	1 0-2 0		

POTATOES.—Jersey trade finished; English—Myatt's, 2s.; Beauty of Hebron, 2s. to 2s. 6d.; and Regents, 2s. per bushel.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Aralia Sieboldi, doz.	6 0-18 0	Foliage plants, vari-	2 0-10 0
Asters, per dozen	3 0-6 0	ous, each	1 6-7 0
Balsams, per doz.	2 0-1 0	Ficus elastica, each	3 0-6 0
Bouvardias, per dozen	9 0-12 0	Fuchsias, doz.	3 0-6 0
Calceolarias, dozen	3 0-6 0	Heliotropes, dozen	3 0-6 0
Carnations, per doz.	6 0-18 0	Hydrangeas, dozen	9 0-18 0
Chrysanthemums, doz.	4 0-9 0	Liliums, var., doz.	18 0-30 0
Cockscombs, per doz.	2 6-4 0	Marguerites, doz.	6 0-12 0
Coleus, dozen	2 0-4 0	Mignonette, 12 pots	3 0-6 0
Crassula, per doz.	9 0-12 0	Myrtles, per dozen	6 0-12 0
Cyperus, per dozen	4 0-12 0	Palms in var., each	2 6-21 0
Dracena terminalis, per dozen	30 0-60 0	Pelargoniums, doz.	6 0-12 0
—viridis, per doz.	12 0-24 0	—scarlet, dozen	3 0-6 0
Euonymus, in var., per dozen	6 0-18 0	Rhodanthus, per doz.	4 0-6 0
Evergreen, in var., per dozen	6 0-24 0	Scented Geranium, per dozen	3 0-6 0
Ferns, in var., doz.	4 0-18 0	Solanums, dozen	9 0-15 0
		Verbenas, per doz.	4 0-6 0

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Asters, 12 bunches	2 0-6 0	Mignonette, 12 bun.	1 0-3 0
—French, per bun.	1 0-1 6	Pansies, 12 bun.	1 0-2 0
Bouvardias, per bun.	0 6-1 0	Pelargoniums, 12 spr.	0 6-1 0
Carnations, 12 blms.	1 0-2 0	—scarlet, 12 spr.	0 2-0 4
—dozen bunches	4 0-6 0	Pinks, 12 bun.	3 0-6 0
Chrysanthemums, 12 blooms	0 6-3 0	Poppies, 12 bun.	4 0-6 0
—dozen bunches	2 0-6 0	Primulas, double, 12	0 9-1 0
Corallflower, 12 bun.	1 6-3 0	sprays	0 9-1 0
Eucharis, per dozen	3 0-6 0	Pyrethrum, 12 bun.	2 0-4 0
Forget-me-nots, 12 bunches	2 0-4 0	Rhodanthus, 12 bun.	4 0-6 0
Gardenias, 12 blooms	1 6-4 0	Roses, Tea, per doz.	0 6-1 6
Gladiolus, doz. sprays	0 6-1 6	—coloured, dozen	2 0-4 0
Heliotropes, 12 spr.	0 6-1 0	—red, per dozen	0 6-1 0
Lavender, 12 bun.	3 0-4 6	—12 bunches	2 0-6 0
Lilium longiflorum, 12 blooms	3 0-5 0	—Safrano, dozen	0 6-9 0
—lancifolium, 12 bl.	1 0-3 0	Stephanotis, 12 spr.	2 0-4 0
Marguerites, 12 bun.	3 0-6 0	Sweet Peas, 12 bun.	2 0-4 0
		Sweet Sultan, 12 bun.	2 0-4 0
		Tuberose, 12 blms.	0 4-0 9

SEEDS.

LONDON: Sept. 5.—Messrs. John Shaw & Sons, seed merchants, of 37, Mark Lane, E.C., write that a fair business has lately been doing in Clover and other seeds, with a strong upward tendency in values. On account of the continued unfavourable weather the prospects for the new crops are extremely bad, and in consequence all descriptions are held for higher prices. This applies especially to red, white, and Alsike Clover seed, and particularly to Trefoil. Winter Tares are advancing. There is no change in seed Rye. Trifolium keeps steady. New blue Peas are now appearing. Feeding Linseed is firm.

CORN.

Averages.—Official statement showing the average price of British corn, imperial measure, in the week ended September 1:—Wheat, 36s. 4d.; Barley, 26s. 10d.; Oats, 19s. 9d. For the corresponding week in 1887:—Wheat, 29s. 11d.; Barley, 27s. 5d.; Oats, 15s. 6d.

FRUIT AND VEGETABLES.

SPITALFIELDS: September 5.—Good supplies of all kinds of fruits, fresh vegetables, Potatoes, &c.; demand slow, at prices as follows:—Fruit: Damsons, 3s. to 3s. 6d. per half sieve; Plums, English, 3s. to 3s. 6d. do.; foreign do., 2s. to 2s. 6d. per basket; English Green Gages, 6s. 6d. to 7s. per bushel; foreign do., 2s. 9d. to 3s. 6d. per half-flat; Pears, 4s. to 5s. per bushel; Apples, 3s. 6d. to 5s. do.; do., 2s. to 3s. per half-bushel; English Tomatoes, 5s. 6d. to 6s. 6d. per peck; foreign do., 1s. 9d. to 2s. 3d. per box of about 18 lb. Vegetables: Cabbages, 1s. 6d. to 2s. 6d. per tally; Vegetable Marrows, 1s. 6d. to 3s. do.; Cauliflowers, 2s. 6d. to 6s. do.; Peas, 1s. 6d. to 1s. 9d. per bushel; do., 2s. to 2s. 3d. per sack; Broad Beans, 1s. to 1s. 3d. per bushel; do., 2s. to 2s. 3d. per sack; Scarlet Runners, 1s. to 1s. 6d. per sieve; do., 2s. to 3s. per sack; French Beans, 1s. 9d. to 2s. per sieve; Onions, 1s. 9d. to 2s. 3d. per dozen bunches; Turnips, 1s. 6d. to 2s. do.; Carrots, 1s. 6d. to 2s. do.; Beetroots, 2s. 6d. to 3s. do.; Mint, 1s. 6d. to 2s. do.; Parsley, 1s. to 1s. 6d. do.; foreign Onions, 2s. 3d. to 2s. 6d. per bag of about 110 lb.; frame Cucumbers, 1s. 1d. to 3s. per dozen; common do., 9d. to 1s. do.; Endive, 1s. 6d. do.; Cos Lettuce, 6d. to 8d. per score.

POTATOS.

BOROUGH AND SPITALFIELDS: Sept. 4.—The market is fully supplied, assortment variable, demand slow, and prices irregular:—Regents, 55s. to 80s.; Shaws, 50s. to 70s.; Hebrons, 60s. to 85s.; kidney, 60s. to 85s.; Early Roses, 40s. to 60s. per ton.

SPITALFIELDS: Sept. 5.—Quotations:—Magnums, 50s. to 60s.; Imperators, 55s. to 60s.; Early Rose, 50s. to 55s.; Englishkidneys, 60s. to 65s.; do. Regents, 60s. to 70s.; and Beauty of Hebron, 50s. to 60s. per ton.

THE GARDENERS' ORPHAN FUND.

DONATIONS and SUBSCRIPTIONS

WILL BE THANKFULLY RECEIVED BY

A. F. BARRON, Hon. Sec.,

Royal Horticultural Society's Gardens, Chiswick, London, W.

PEACH TREES for SALE.—Extra size, ranging from 5 to 10 feet high, and as much through. The best sorts represented; 1000 feet of south walling being engaged for their growth. For particulars, apply to R. GILBERT, High Park Gardens, Stamford.

Hooper's
The Catalogue free to buyers
Excellent Seeds and Bulbs at low prices
Covent Garden Seed Warehouse

STRAWBERRIES A SPECIALTY
 SELECT LIST FREE
 SAMPLE OF PLANTS 3d.
W. LOVEL & SON, DRIFFIELD.

CUTBUSH'S MILL-TRACT MUSHROOM SPAWN.
 —Too well known to require description. Price, 6s. per bushel (1s. extra per bushel for package), or 6d. per cake; free by parcel post, 1s.
 None genuine unless in sealed packages and printed cultural directions enclosed, with our signature attached.
WM. CUTBUSH AND SON (Limited), Nurserymen and Seed Merchants, Highgate Nurseries, N.

COCOA-NUT FIBRE REFUSE, newly made. Truck-load, (2 tons) 20s.; in bags—20, 14s.; 40, 25s. Free on to Rail. Cash with order.
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SULPHIDE of POTASSIUM (Harris).—A certain cure for Mildew on Plants, Red Spider, Aphid, &c. Enough to make 32 gallons of solution, free for 1s. 3d. The only kind to use is "Harris's specially prepared Sulphide of Potassium." Sole Manufacturers:—**PHILIP HARRIS AND CO. (Limited),** 9, Bull Ring, Birmingham.

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 TWO PRIZE MEDALS.
Quality, THE BEST in the Market. (All sacks included.)
 PEAT, best brown fibrous ... 5s. per sack, 5 sacks for 22s. 6d.
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 PEAT, extra selected Orchid ... 7s. 6d. ... 5 sacks for 35s.
 LOAM, PREPARED COMPOST ... 1s. per bush, 3s. per sack
 LEAF, or PEAT MOULD ... (sacks included).
 SILVER SAND, coarse, 1s. 6d. per bush, 14s. half-ton, 24s. ton.
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 TOBACCO CLOTH, or PAPER ... 1s. lb.; 28 lb., 27s.
 SPHAGNUM MOSS, all selected, 3s. per bush, 8s. per sack.
 CHUBB'S "PERFECT" FERTILIZER (the Best Food for all kinds of Plants, Flowers, Fruits, Vegetables, &c.) ... Tins, 7lb. 14lb. 28lb. 56lb. 1 cwt.
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 RUSSIAN MATS, BAMBOO CANES, PERUVIAN GUANO, NITRATE of SODA, HORTICULTURAL CHARCOAL, &c.
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COCOA-NUT FIBRE REFUSE (by Chubb's special process), sacks, 1s. 3d. each; 10 sacks, 11s.; 15 sacks, 15s.; 20 sacks, 18s.; 30 sacks, 25s.; 40 sacks, 30s.; Truck-load, loose, free on rail, 28s. Limited quantities of G., special quality granulated, in sacks only, 2s. each. Terms, strictly Cash with order.
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 RACKLERS WALK, DUBLIN. — (Discount for Cash.)

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4d. per bushel; 100 for 25s.; truck (loose, about 2 tons), 40s.; 4-bushel bags, 4d. each.

LIGHT BROWN FIBROUS PEAT, 5s. 6d. per sack; 5 sacks, 25s.; sacks, 4d. each.

BLACK FIBROUS PEAT, 5s. per sack, 5 sacks, 22s.; sacks, 4d. each.

COARSE SILVER SAND, 1s. 9d. per bushel; 15s. per half ton; 26s. per ton, in 2-bushel bags, 4d. each.

YELLOW FIBROUS LOAM, PEAT-MOULD, and LEAF-MOULD, 1s. per bushel.

SPHAGNUM MOSS, 8s. 6d. per sack.

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7 lb. 14 lb. 28 lb. 56 lb. 1 cwt.

2/6 4/6 7/6 12/6 20/-
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C. & L. also supply Crushed Bones, Bone Dust, Peruvian Guano, Sulphate of Ammonia, and Nitrate of Soda, in best qualities only.

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MOST SUPERIOR. 5/- PER BUS.

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Protect your Fruit by using

MADDOCK'S KILL-WASP.

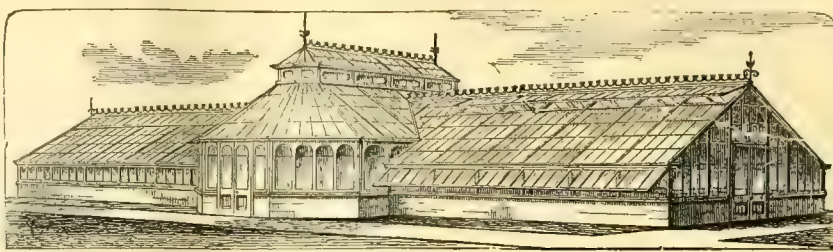
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Hemstitched:— Per doz.
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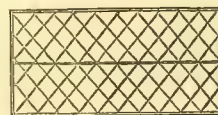
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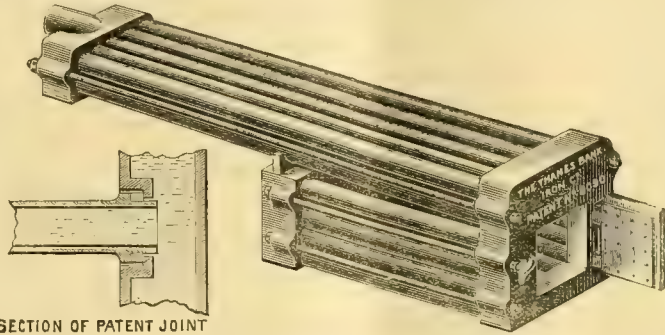
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It can be erected in a few hours, and may be relied upon as a thoroughly sound and good Hot-water Generator. It has been carefully tested in every possible way, more especially with regard to power and durability, and the result has been highly satisfactory.

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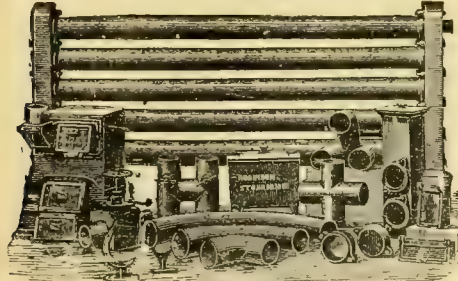
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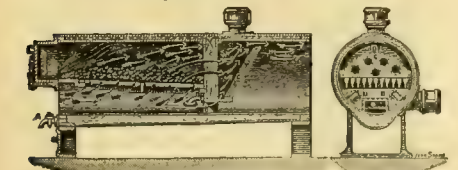
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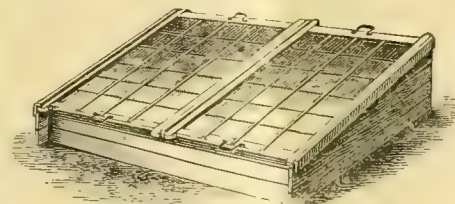
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Varnish, from 5s. 6d. per gal.—Full Price List on application
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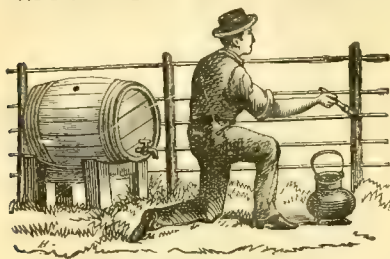
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PATENT TUBULAR FLOWER STANDS
for Artistic Grouping of Cut Flowers. Have attracted much attention at recent Horticultural Exhibitions.
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GARDEN REQUISITES.—Sticks, Labels, Virgin Cork, Raffia, Mats, Bamboo Canes, Rustic Work, Manures, &c. Cheapest Prices of
WATSON AND SCULL, 90, Lower Thames Street, London, E.C.

HILL & SMITH'S BLACK VARNISH

for Preserving Ironwork, Wood, or Stone.



(Registered Trade Mark.)

An excellent substitute for oil paint, at one-third the cost. Used in all London Parks, at Windsor, and Kew Gardens, and on every important estate in the Kingdom. Has stood the test of forty years' trial. Requires no mixing; can be applied cold by any ordinary labourer.

Price 1s. 6d. per gallon at the manufactory, or carriage-paid to any railway station, 1s. 8d. per gallon in casks of 36, 20, or 10 gallons.

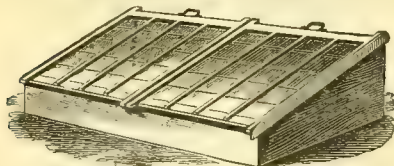
Every Cask bears the above Registered Trade Mark. Beware of cheap imitations.

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HILL & SMITH,
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BOULTON & PAUL HORTICULTURAL BUILDERS.

Our 8 by 6 feet
2-LIGHT MELON AND CUCUMBER FRAMES



are £3 each, carriage paid.

Made of the best red deal, English 21-oz. glass, painted 3 coats best colour.

3-LIGHTS, 12 by 6 feet, £4 5s.

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THE BEST REMEDY FOR INDIGESTION.



CAMOMILE PILLS.

Are confidently recommended as a simple but certain remedy for

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"Having been a sufferer from Indigestion for many years, I am happy to say that I have at last not only been relieved but perfectly cured by using Norton's Pills, and confidently recommend them to all suffering from the same."
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Annual Income, £248,000.
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This being a critical time in the growth of Chrysanthemums, Cultivators should study

MOLYNEUX'S BOOK on Growing this Plant, which contains the necessary information by which success can be achieved.

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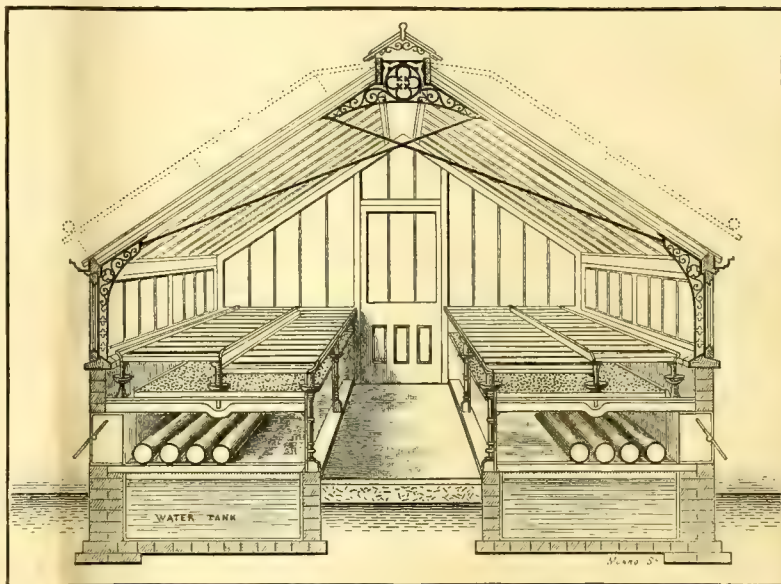
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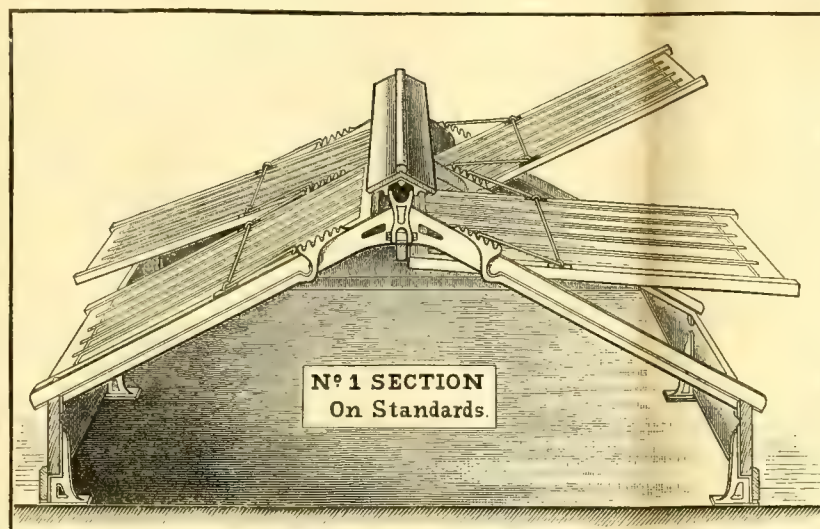
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Vol. III., Third Series, JAN. to JUNE, 1888.
W. RICHARDS, 41, Wellington Street, Strand, W.C.

READING CHRYSANTHEMUM SOCIETY.
THE ANNUAL EXHIBITION OF FLOWERS AND FRUIT
will be held on NOVEMBER 15. Schedules of

97, London Street, Reading. Mr. WM. SMITH, Sec.

NATIONAL PROVINCIAL CHRYSANTHEMUM SHOW, Sheffield, NOVEMBER 16 and 17.
The Show of the Season. Over TWO HUNDRED POUNDS
in PRIZES. Schedules on application to

W. K. WOODCOCK, Hon. Sec.,
The Gardens, Oakbrook, Sheffield.

MR. DODWELL'S GRAND CARNATIONS.
—The finest grown. 5000 Unbloomed Seedlings,
warranted of the highest parentage; unrivalled whether for
bedding or forcing for spring flowering. 3s. 6d. per doz.; 21s.
per 100. Special terms for quantities. Particulars on applica-
tion. The Cottage, Stanley Road, Oxford.

NEW ZEALAND COCKSFOOT
(DACTYLIS GLOMERATA).
HORNE, SON, and BRYANT, 59, Mark Lane, London, E.C.,
are First-hand Sellers of the New Crop, 14 to 18 lb. per Bushel.
Samples and Quotations on application.

DICKSON'S IMPROVED MUSHROOM
SPAWN, most superior, now reduced to 5s. per bushel
of 14 cakes. Circular with Cultural Notes and List of Testi-
monials post-free on application.
DICKSONS (Limited), The Royal Seed Warehouse, CHESTER.

Kent — The Garden of England.
STRAWBERRIES true to Name.
GEO. BUNYARD and CO.'S New LIST,
embracing, Noble, Waterloo, &c., and the 30 best kinds,
may now be had on application. Splendid Plants in little pots,
and Runners. The Old Nurseries, Maidstone.

Azaleas, Camellias, Orchids, Palms, &c.

AUG. VAN GEERT, Continental Nurseries,
Ghent, Belgium. Special LIST now ready, and will be
sent post-free on application to
WILLIAM DENMAN, 7, Catherine Street, Covent Garden, W.C.
See large Advertisement on page 289.

BOX'S JUBILEE BEGONIAS.—Thousands
of outdoor Begonias now in full flower at Tooting
Park Nursery (close to Balham Station). The best display in
the Trade, and cheapest rates.
JOHN R. BOX (for ten years J. Laing's sole partner),
Tooting, Balham, and Croydon.

BOUVARDIAS.—Special Offer.—Best Market
sorts, very strong, in 60 pots, 20s. and 15s. per 100.
ADIANTUM CUNEATUM, strong, in 60 pots, 12s. per 100.
PRIMULA, Double White, 25s. per 100.
ROBERTS BROS., East Grinstead.

Bulbs of Finest Quality only.

BARR'S BULB CATALOGUE for 1888,
Now Ready. Sent free on application.
Contains full Descriptive List of the best Hyacinths, Tulips,
and other Dutch Bulbs in cultivation, also an interesting de-
scriptive List of Cape and Californian Bulbs and Tubers, in-
cluding many beautiful rarities.
BARR and SON, 12 and 13, King Street, Covent Garden, W.C.

Camellias, Azaleas, Rhododendrons, Palms, Orchids,
&c. Plants grown specially for English use.

C. VUYLSTEKE, NURSERYMAN,
Lochristy, Ghent, Belgium.
Wholesale CATALOGUE now ready, and may be had
free on application to

Messrs. R. SILBERRAD and SON, 25, Savage Gardens,
Crutched Friars, London, E.C.

Dutch Bulbs Direct from the Growers.

ANT. ROOZEN and SON'S CATALOGUE
for 1888, containing details of their immense Collections
of New, Rare, and fine Bulbs and Plants (86 pages in English)
is now ready, and will, as usual, be sent post-free, on applica-
tion to themselves or their Agents,
Messrs. MERTENS and CO., 3, Cross Lane, St. Mary-at-Hill,
London, E.C., from whom also can be obtained.
ANT. ROOZEN and SON'S New Work, "Notes on the
Cultivation of Dutch and Cape Bulbs." Price 1s., Post-free.

ORCHIDS.—Amateurs having Large Speci-
mens to DISPOSE OF in EXCHANGE, are requested
to state value expected and sorts desired, to
W. H. (who has a large stock to select from), *Gardeners'*
Chronicle Office, 41, Wellington Street, Strand, W.C.

WANTED, 100 HUMEA ELEGANS, in
small pots, or strong Seedlings, unpotted.
CHAS. KERSHAW, Slend Syke Nurseries, Brighouse.

WANTED, OFFERS OF VANDA LOWII,
with size and price, for Cash.
Address, B. T., *Gardeners' Chronicle* Office, 41, Wellington
Street, Strand, W.C.

MESSRS. GREGORY and EVANS,
NURSERYMEN, Sidcup, and 285, 286, 287, 288, Flower
Market, Covent Garden, W.C., are open to RECEIVE
CONSIGNMENTS of Choice CUT FLOWERS in any quantity
for their Commission Department. Boxes and Labels supplied.
Telegraph Address—"COMMISSION, SIDCUP."

SQUELCH and BARNHAM,
North Row, Covent Garden, W.C., are OPEN TO DIS-
POSE OF any quantity of MUSCATS and BLACK GRAPES,
TOMATOES, CUCUMBERS, FRENCH BEANS, STRAW-
BERRIES, CHOICE FLOWERS, &c. Highest Market Prices
obtained. Account Sales daily; Cheques weekly or as preferred
by Sender. Baskets and Labels supplied. References given.

Floral and Fruit Commission Agency.

W. CALE is open to RECEIVE CON-
SIGNMENTS of choice FLOWERS and FRUIT.
Empties supplied.—10, Burleigh Street, Strand; and Flower
Market, Covent Garden, W.C.

PEACHES, PEACHES, MELONS, &c.—
Highest Market Prices guaranteed for really good and
well-packed fruit of the above.—HENRY RIDES (late Wise &
Ridgely), Fruit and Flower Garden, Covent Garden, W.C.

SUTTON'S BEDDING HYACINTHS,
in distinct shades of colour, and to flower simultaneously.
Perfectly distinct, and unequalled by any other Bedding
Hyacinths: vide Testimonials.—For full particulars see

SUTTON'S BULB CATALOGUE:
beautifully illustrated with numerous Engravings and
a handsome Coloured Plate, representing the leading Bulbous
Flowers, and containing accurate descriptions of the choicest
Narcissus, together with particulars of the best varieties of
Hyacinths, Tulips, &c., for bedding. Now Ready: Post-free
to intending Customers.
SUTTON and SONS, The Queen's Seedsmen, READING.

CREEPERS FOR WALLS.—By planting
what is suitable, an ugly object may easily be made
beautiful. Most being in pots, can be sent and put out at any
time. Descriptive LIST and advice Free.—RICHARD SMITH
and CO., Nurserymen and Seed Merchants, Worcester.

BOUVARDIA, PRESIDENT CLEVELAND,
supercedes all other scarlet varieties. Strong plants in
48s., or smaller plants for Parcel Post. Price on application.
H. B. MAY, Dyson's Lane Nursery, Upper Edmonton.

The best Season to Plant

EDELWEISS is during September and
October.

In consequence of having made favourable purchases,
I am able to supply strong plants at
22 per 1000, and 5s. per 100.
OTTO WAGNER, Döbeln, Germany.

PEACH TREES for SALE.—Extra size, rang-
ing from 5 to 10 feet high, and as much through. The
best sorts represented; 1000 feet of south walling being en-
gaged for their growth. For particulars, apply to
R. GILBERT, High Park Gardens, Stamford.

The Early Planting of Daffodils.

HARTLAND of Cork is famous for "well
matured," early flowering, well ripened Bulbs. Detailed
and Descriptive LIST Post-free forwarded to any address,
in conjunction with his General Bulb CATALOGUE.
WM. BAYLOR HARTLAND, Old Established General Seed
Warehouse, 24, Patrick Street, Cork. His original "LITTLE
BOOK OF DAFFODILS," illustrated by Gertrude Hartland,
Post-free for 18 stamps. This is the most complete work of
the sort yet published. The drawings are superb.

Palms, Foliage Plants, Heaths, &c.

FRANCIS R. RINGHORN will be pleased to
forward LIST of above with low prices. Leading
decorative PALMS in all sizes, great quantities, and in finest
health.
Richmond, Surrey; and 191 and 192, Flower Market, Covent
Garden, W.C.

STRAWBERRY PLANTS, in small pots.
Splendid stuff of all best kinds, and true to name. Price
List on application.
FRANCIS R. RINGHORN, Nurseryman, Richmond, Surrey.

GEORGE LEE has some good strong Plants
of LAXTON'S "KING OF THE EARLIES" STRAW-
BERRY, 5s. per 100; good plants, 3s. 6d. per 100. Also
"COMTE DE BRAZZA" VIOLET, fine for pit or frame work,
15s. and 20s. per 100.—Clevedon, Aug. 25.

LAXTON'S NEW STRAWBERRIES.—
Four First-Class Certificates from the Royal Horticul-
tural Society.

The earliest, largest, finest, and latest high-quality sorts,
and the most profitable for Market or Private Growers, as
they make the highest prices in Covent Garden. Send for
Descriptive Priced LISTS, with Press and other Testimo-
nials, to T. LAXTON, Bedford.

SULPHIDE of POTASSIUM (Harris).—A
certain cure for Mildew on Plants, Red Spider, Aphid,
&c. Enough to make 33 gallons of solution, free for 1s. 3d.
The only kind to use is "Harris's specially prepared Sulphide
of Potassium." Sole Manufacturers:—
PHILIP HARRIS and CO. (Limited), 9, Bull Ring, Birmingham.

W. H. LASCELLES and CO.,
HORTICULTURAL BUILDERS,
121, BUNHILL ROW, LONDON, E.C.
Plans and Estimates Free.
See large Advertisement, September 1, page 233.

SALES BY AUCTION.

Great Horticultural Sale Week.
IMPORTANT TO THE TRADE.

MESSRS. PROTHEROE AND MORRIS respectfully call attention to their great ANNUAL TRADE SALES OF GREENHOUSE PLANTS, &c., which will take place next week as follows:—

MONDAY, Sept. 17.—At the DYSON'S LANE, NURSERY, UPPER EDMONTON, by order of Mr. H. B. May.

„ „ **DUTCH BULBS**, at Protheroe & Morris' Rooms.

TUESDAY, Sept. 18.—At the BURNT ASH LANE NURSERIES, LEE, S.E., by order of Messrs. B. Maller & Sons.

WEDNESDAY, Sept. 19.—At the LEA BRIDGE NURSERIES, LEYTON, E., by order of Mr. John Fraser.

THURSDAY, Sept. 20.—At the BRIMSDOWN NURSERY, ENFIELD HIGHWAY, by order of Mr. John Maller.

„ „ **DUTCH BULBS**, at Protheroe Morris' Rooms.

FRIDAY, Sept. 21.—At the LONGLANDS NURSERY, SIDCUP, by order of Messrs. Gregory & Evans.

„ „ **TRADE SALE OF ORCHIDS**, at Protheroe & Morris' Rooms.

SATURDAY, Sept. 22.—**DUTCH BULBS**, at Protheroe & Morris' Rooms.

Catalogues forwarded free by post on application to the Auctioneers, 67, and 68, Cheapside, London, E.C.

Dutch Bulbs.

Every MONDAY, THURSDAY, and SATURDAY.
Great Unreserved Sales.

MESSRS. PROTHEROE AND MORRIS will **SELL BY AUCTION**, at the Central Sale Rooms, 67 and 68, Cheapside, London, E.C., every MONDAY, THURSDAY, and SATURDAY, at half-past 11 o'clock precisely, extensive consignments of first-class **HYACINTHS, TULIPS, GROCUS, NARCISSUS**, and other **BULBS**, from Holland, lotted to suit the Trade and Private Buyers.

On view morning of Sale, and Catalogues had.

Upper Edmonton.

About 3 minutes' walk from Angel Road, and 8 minutes' walk from Silver Street Stations, G.E.R.
THIRD ANNUAL SALE.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. H. B. May to **SELL BY AUCTION**, on the Premises, the Dyson's Lane Nurseries, Upper Edmonton, on MONDAY, September 17, at 12 o'clock precisely, in consequence of the large number of lots, about 40,000 **STOVE and GREENHOUSE PLANTS**, remarkably well grown and in the best possible condition, comprising—

20,000 **FEENS**, including *Adiantum cuneatum*, *Lomaria gibba*, the most useful sorts of *Pteris*, *Adiantum elegans* (a useful variety for cutting), and many rare and choice sorts.
10,000 **TREE CARNATIONS**, including *Mdlle. Carlé*, *A. Alegatierre*, *Dr. Raymond*, *Andalusia*, *Fride of Penshurst*, *Luifer*, and all the best sorts.
CRIMSON CLOVES, *CARNATION Mrs. REYNOLDS HOLE*, &c.

TEA ROSES—extra strong *Maréchal Niel* and *Gloire de Dijon*, with growths from 15 to 18 feet long; *The Bride* (new white), and other good sorts.

A splendid lot of **AMPELOPSIS, CLEMATIS, IVIES**, &c.
AZALEAS, white, large plants for cutting from; English-grown **CAMELLIAS**, full of bloom-buds; **BOUVARDIAS**, including the new beautiful scarlet *President Cleveland*; **Double White PRIMULAS**, **CYCLAMEN**, **EUPHARIS AMAZONICA**, &c.

CROTONS, a splendid lot of beautifully coloured sorts; **FICUS ELASTICA**, **ARALIA SIEBOLDII**, &c.

Many thousands of small **HEATHS, GENISTAS**, &c.
May be viewed. Catalogues had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, E.C.; and Leytonstone, E.

Lee, Kent, S.E.

GREAT ANNUAL TRADE SALE, to commence punctually at 11 o'clock, in consequence of the large number of lots.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. B. Maller & Son, to **SELL BY AUCTION**, on the Premises, The Burnt Ash Lane Nurseries, Lee, S.E., adjoining the Railway Station, on TUESDAY, September 18, at 11 o'clock punctually, without reserve, 25,000 **Winter-blooming HEATHS**, beautifully grown, and remarkably well set with bloom buds, including:—

15,000 <i>Erica hyemalis</i>	Alsophilla australis, in 24 and 18-pots
5,000 „ <i>gracilis</i>	500 <i>Epacris</i> , well grown.
Large quantities of <i>Melanthera</i> , <i>ventricosa</i> , <i>perispica</i> , <i>erecta</i> , <i>Cavendishii</i> , <i>Caffra</i> , and other kinds	<i>Boronia megastigma</i>
15,000 Small <i>E. hyemalis</i> and 5,000 Small <i>E. gracilis</i> , for growing on	Quantity of extra strong <i>Maréchal Niel</i> and other <i>Tea Roses</i>
8,000 <i>Solanum capsicastrum</i> , in berry	4,000 <i>Grevillea robusta</i>
6,000 <i>Bouvardias</i> , single and double	<i>Ficus elastica</i>
2,000 <i>Genistas</i> , very fine	<i>Greenhouse Passion-flowers</i>
<i>Cyclamen persicum</i>	<i>Poinsettias</i>
2,000 <i>Adiantum cuneatum</i>	<i>Ampelopsis Veitchii</i>
3,000 <i>Lomaria gibba</i> , true, compact variety, and other Ferns	<i>Stephanotis</i>
	<i>Plumbago capensis flore alba</i>
	500 <i>Clematis Jackmanni</i>
	Beautifully Coloured <i>Crotons</i> , &c.

May be viewed. Catalogues may be had on the Premises, or of the Auctioneers and Valuers, 67 and 68, Cheapside, E.C., and Leytonstone, E.

N.B.—Messrs. P. & M. desire to call the attention of intending purchasers to the Stock to be offered as above. The Plants are remarkably well grown, fit for immediate sale, and the whole will be found in an equally good condition as former years.

Lea Bridge Road, E.

ANNUAL UNRESERVED SALE of fine Winter-flowering HEATHS, &c.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. John Fraser to **SELL BY AUCTION**, on the Premises, the Lea Bridge Nurseries, Lea Bridge Road, Leyton, E. (close to the Hoe Street Station, Great Eastern Railway) on WEDNESDAY, September 19, at 11 o'clock precisely, in consequence of the large number of lots, a large quantity of **WINTER FLOWERING and OTHER PLANTS**, including—

12,000 <i>Erica hyemalis</i>	2,000 <i>Maréchal Niel</i> and other <i>Roses</i>
3,000 <i>Tree Carnations</i>	6,000 <i>Clematis Jackmanni</i> and other best named sorts
4,000 <i>Erica gracilis</i>	5,000 <i>Bouvardias</i> , including a lot of "President Cleveland"
2,000 <i>Ampelopsis Veitchii</i>	5,000 <i>Solanums</i>
4,000 fine named <i>Hollyhocks</i> from seed	1,000 <i>Clematis indivisa lobata</i>
1,000 <i>Lagerflora rosea superba</i>	
6,000 <i>Cyclamen persicum</i> (Fraser's superb strain)	

and a great number of *Araucaria excelsa*, *Epacris*, *Passion-flowers*, *Jasmines*, *Honeysuckles*, variegated *Ivies*, *Lagerflora alba* from seed, and other plants.

The whole of the Stock is in the best condition, and ready for immediate Sale.

May be viewed. Catalogues had on the Premises; and of the Auctioneers, 67 and 68, Cheapside, London, E.C., and Leytonstone, E.

Enfield Highway, N.

The Brimsdown Nursery, adjoining Brimsdown Station, Great Eastern Railway.

TWENTIETH ANNUAL TRADE SALE.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. John Maller to **SELL BY AUCTION**, on the Premises, The Brimsdown Nursery, Enfield Highway, N., on THURSDAY, September 20, at 11 o'clock precisely, in consequence of the unusually large number of lots, without Reserve, upwards of 120,000 of remarkably well-grown **STOVE and GREENHOUSE PLANTS**, mostly in 48-pots, and fit for immediate Sale, consisting of:—

15,000 winter-blooming <i>Heaths</i> , including <i>hyemalis</i> , <i>gracilis</i> , <i>Caffra</i> , <i>Wimborne</i> , &c., and extra large <i>E. Cavendishii</i>	1,000 double white <i>Primulas</i>
5,000 <i>Solanums</i> , exceptionally well grown	1,000 <i>Stove and Greenhouse Climbers</i>
5,000 Ferns, <i>Adiantums</i> , <i>Pteris</i> , &c.	<i>Dipladenias</i> , of sorts
3,000 <i>Tree Carnations</i> , leading varieties	<i>Allamandas</i>
500 <i>Epacris</i> , sorts	<i>Bougainvilleas</i>
5,000 <i>Bouvardias</i>	<i>Stephanotis</i>
3,000 <i>Genistas</i>	<i>Tacsonias</i>
1,000 <i>Geraniums</i> , Improved <i>Queen of Whites</i> , &c.	1,000 <i>Passifloras</i> and <i>Ampelopsis Veitchii</i>
	<i>Crotons</i> and <i>Dracenas</i> , beautifully coloured
	1,000 <i>Palms</i> , <i>Ficus</i> , <i>Grevilleas</i> , &c.
	Large <i>Azaleas</i> for cutting

Many thousands of small *Ericas*, *Genistas*, *Ferns*, &c.; large quantities of *Acacias*, *Gardenias*, *Euphorbia jacquindora*, *Chrysanthemums*, *Poinsettias*, *Euonymus ovatus aureus*, in stores, &c., suitable for the Trade, and other extensive buyers.

May be seen any day prior to the Sale. Catalogues may be had on the Premises, or at the Brunswick Nursery, Tottenham; and of the Auctioneers, 67 and 68, Cheapside, London, E.C., and Leytonstone, E.

N.B.—The Auctioneers desire to call the attention of intending purchasers to this **GREAT ANNUAL TRADE SALE**, which has hitherto taken place at the Brunswick Nursery, Tottenham; but, in consequence of the Lease of that Nursery having nearly expired, the Sale this year, and in future, will take place as above, adjoining the Brimsdown Station, G.E.R. The whole of the Stock is in first-rate condition, the *Ericas* being especially well set for flower, and the *Solanums* unusually well berried. There will also be this season a Sale at **THE BRUNSWICK NURSERY**, Tottenham, on THURSDAY, September 27, of which a separate Advertisement will appear.

Sidcup, Kent, S.E.

About ten minutes' walk from New Eltham Station, S.E.R.
GREAT ANNUAL TRADE SALE OF WINTER-BLOOMING HEATHS, &c.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. Gregory & Evans to **SELL BY AUCTION**, on the Premises, The Longlands Nursery, Sidcup, S.E., on FRIDAY, September 21, at 11 o'clock precisely, in consequence of the large number of lots, without reserve, an enormous quantity of unusually well-grown **WINTER-BLOOMING HEATHS and other PLANTS**, consisting of:—

30,000 <i>Erica hyemalis</i>	5,000 <i>Erica gracilis</i>
1,000 „ <i>Caffra</i>	1,000 mixed varieties of <i>Ericas</i>
3,000 „ <i>Cavendishii</i>	3,000 <i>Erica magnifica</i>
3,000 „ <i>coccinea minor</i>	5,000 <i>Genistas</i>
All in 48 and 48-pots.	10,000 <i>Bouvardias</i> of sorts
10,000 <i>Solanum</i> , well berried	6,000 <i>Cyclamen</i> , best market strain
1,000 <i>Double Primulas</i>	5,000 <i>Adiantum cuneatum</i>
1,000 <i>Poinsettias</i>	1,000 <i>Ivies</i> of sorts
12,000 <i>Roses</i> , grown especially for the Sale, including some of the best leading sorts for pot culture	10,000 small Ferns for growing on

The whole stock will be found up to the quality of previous years.

May be viewed. Catalogues had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, London, E.C., and Leytonstone, E.

Friday Next.

ESTABLISHED, SEMI-ESTABLISHED and IMPORTED ORCHIDS.

Unreserved SALE, in lots to suit the Trade and large and small buyers.

MESSRS. PROTHEROE AND MORRIS will **SELL BY AUCTION**, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY NEXT, September 21, at half-past 12 o'clock precisely, an unusually fine lot of **Established, Semi-established, and Imported ORCHIDS**, in lots to suit the Trade and large and small buyers. The Sale will comprise the following:—

ANGRECEM SESQUIPEDALE, 100 splendid plants; and 50 specimen *GEOMATOPHYLLUM ELLISII*.
50 Plants of *CATTLEYA BOWRINGIANA*, fine plants, each with two or three flower-spikes.

Continued on next column.

Continued from previous column.

ODONTOGLOSSUM ALEXANDRE of the best type, and O. GRANDE, about 150 lots, from Messrs. Shuttleworth, Carder & Co. LILLIA GOULDIANA, 5 cases of this very fine new LILLIA, just received direct from Mr. Rechacek.

Also a large assortment of various Established ORCHIDS. The whole for Sale without reserve. ORCHID BASKETS, &c. On view morning of Sale, and Catalogues had.

Tuesday, September 25.

ORCHIDS IN FLOWER.

MESSRS. PROTHEROE AND MORRIS desire to announce that their NEXT SPECIAL SALE of ORCHIDS IN FLOWER will take place as above, for which they will be glad to RECEIVE NOTICE OF ENTRIES AS EARLY AS POSSIBLE.

Brunswick Nursery, Tottenham.

IMPORTANT UNRESERVED TRADE SALE OF WINTER FLOWERING HEATHS and GREENHOUSE PLANTS.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. John Maller, to **SELL BY AUCTION**, on the Premises, the Brunswick Nursery, Tottenham (close to White Hart Lane Station, Great Eastern Railway), on THURSDAY, September 27, at 12 o'clock punctually, without reserve, the following remarkably well grown **STOVE and GREENHOUSE PLANTS**, including—

5,000 <i>Heaths</i> , including <i>hyemalis</i> , <i>gracilis</i> , <i>Wimborne</i> , &c.	tum, <i>Lomaria gibba</i> , <i>Pteris argyrea</i> , <i>cretica</i> , <i>tremula</i> , and others
1,000 <i>Genista fragrans</i>	200 <i>Ficus elastica</i> in 48 and 32-pots
1,000 <i>Chrysanthemums</i> in pots, choice varieties	<i>Solanum capsicastrum</i> , well berried
1,000 <i>Bouvardias</i> of sorts	Small <i>Heaths</i> and <i>Genistas</i>
3,000 Ferns, <i>Adiantum cuneatum</i>	Large <i>CAMELLIAS</i> and <i>AZALEAS</i> for cutting; <i>GERANIUM</i> , Improved <i>Queen of Whites</i> , in flower; <i>NEW LANTANAS</i> , <i>COLEUS</i> , &c.

May be viewed any day prior to the Sale. Catalogues may be had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

N.B.—The whole of the Stock is in first-rate condition, the *ERICAS* being especially well set for flower, and an inspection is respectfully invited. The Nurseries are close to the White Hart Lane Station, Great Eastern Railway. Trains from Liverpool Street every half hour.

Kingston-on-Thames.

By order of the Executors of the late Mr. Thomas Jackson, CLEARANCE SALE of the whole of the GREENHOUSE, STOVE, and other PLANTS, a choice COLLECTION of ESTABLISHED ORCHIDS, large *CAMELLIAS*, *UTENSILS-IN-TRADE*, &c., without reserve.

SALE, OCTOBER 1, and two following days, instead of September 25 and 26, as previously advertised.

MESSRS. PROTHEROE AND MORRIS (having sold the Freehold Estate), are instructed to **SELL BY AUCTION**, on the Premises, the Kingston Nursery, Kingston-on-Thames, close to the Kingston Railway Station, on MONDAY, October 1, and two following days, without reserve, at 12 o'clock precisely each day, the whole of the well-grown GREENHOUSE and STOVE PLANTS, including some thousands of Ferns, *Geraniums*, *Fuchsias*, 1,000 *Pot Roses*, 200 large *Double White* and other *Camellias*, from 2 to 12 feet, particularly worthy the notice of the Trade; *Azalea indica*, a large and choice assortment of ESTABLISHED ORCHIDS, comprising *Cattleyas*, *Vandas*, *Saccolabiums*, *Aerides*, and *Odonoglossums*, principally O. *Alexandre*, also the LIVE and DEAD STOCK consisting of 4 Horses, 5 Cows, 2 Exhibition Plant Vans, *Utensils-in-Trade*, and numerous other effects.

May be viewed three days prior to the Sale. Catalogues may be had on the Premises; at the various Branch Nurseries, Norbiton and Long Ditton; of G. C. SHERRARD, Esq., Solicitor, 26, Lincoln's Inn Fields, W.C.; and Kingston; and of the Auctioneers, 67 and 68, Cheapside, London, E.C., and Leytonstone, E.

N.B.—The whole of the Valuable Nursery Stock now growing on the Branch Nurseries, will be lotted to suit Large and Small Purchasers, and Sold without reserve, on the respective Premises, OCTOBER 15 and following days, in the meantime anyone desirous of having either of the productive Nurseries transferred may arrange to do so with the Auctioneers, which would afford them the opportunity of purchasing only what Stock they require at unreserved Auction Prices.

Birmingham.

VERTEGANS' NURSERIES.

IMPORTANT SALE of one of the most valuable NURSERY, SEED, and FLOWERS' BUSINESSES in the Provinces. Established upwards of Thirty years.

MESSRS. PROTHEROE AND MORRIS, of London, in conjunction with Mr. W. C. B. CAVE, of Birmingham, are favoured with instructions from the sole proprietor, Mr. E. H. Vertegans (who is retiring from the business), to **SELL BY PUBLIC AUCTION**, at the Royal Nurseries, Harborne Road, Edgbaston, on TUESDAY, the 9th day of October next, at 2 o'clock punctually, the various NURSERIES, DWELLINGS, &c., in lots, as under, and including the Leases, Stock, Goodwill, and Possession, as going concerns:—

Lot 1.—THE ROYAL NURSERIES, RESIDENCE, and COTTAGE (Hans Niemand & Co.), Harborne Road, Edgbaston.

Lot 2.—THE METCHELEY PARK NURSERY and COTTAGE, Edgbaston.

Lot 3.—THE SHELLEY NURSERIES and TWO COTTAGES, Great Malvern.

Lot 4.—THE RICHMOND HILL NURSERY, Edgbaston.

Lot 5.—THE CHAD VALLEY NURSERIES and RESIDENCE, Edgbaston, and the BIRMINGHAM MARKET HALL BUSINESS.

Plans and particulars may be had at the several Nurseries; also from Messrs. PROTHEROE and MORRIS, Auctioneers, 67 and 68, Cheapside, London, E.C.; and from Mr. W. C. B. CAVE, of Birmingham.

The Nurseries, Milford, Surrey.

PRELIMINARY NOTICE OF FOUR DAYS' SALE.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. Maurice Young to **SELL BY AUCTION**, on the Premises as above, on OCTOBER 10, and three following days, first-class NURSERY STOCK, comprising Evergreens in variety, Conifers, Standard Flowering Trees, Flowering Shrubs, large deciduous Ornamental Trees, transplanted Forest Trees, Thorns or Quicks for hedges, choice named *Rhododendrons*, *Rhododendron ponticum*, *Roses*, &c.

Further particulars in future Advertisements.

Sales by Sample. IMPORTANT TO THE TRADE.

MESSRS. PROTHEROE AND MORRIS desire to announce that their SALES by SAMPLE of NURSERY STOCK and GREENHOUSE PLANTS will commence on **TUESDAY, October 9**, and be continued every alternate Tuesday.

Central Auction Rooms, 67 and 68, Cheapside, E.C.

Sunbury, Middlesex. Preliminary Notice. VALUABLE LEASEHOLD NURSERY.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions from the owner to **SELL** by AUCTION, on the Premises, on **MONDAY, October 29**, the **VALUABLE FREEHOLD NURSERY**, known as Osborn's Nursery, Sunbury, comprising 17 Acres of very productive Land, Brick-built Residence, 21 Greenhouses, 2 miles of Hot-water Piping, numerous Pits, Stabling, and other Trade Buildings. The Estate possesses extensive frontages to the public roads, and these frontages could be utilised for building purposes, without interfering in any way with the carrying on of the present Nursery and Florist's Business.

Particulars and Plans can be had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, E.C.
N.B.—The Extensive STOCK of STOVE and GREENHOUSE PLANTS and OUTDOOR NURSERY STOCK will be **SOLD** by AUCTION, on the Premises, on Monday and Tuesday, October 29 and 30.

Preliminary Notice.

The COLLECTION of ESTABLISHED ORCHIDS formed by A. S. Hughes, Esq., late of Lee.

MESSRS. PROTHEROE AND MORRIS are instructed to **SELL** the above **EARLY** in **OCTOBER**, at their Central Sale Rooms, 67 and 68, Cheapside, E.C.

The Studley House Collection of Orchids. SELECTED DUPLICATE PLANTS.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions from F. G. Tautz, Esq., of Studley House, Shepherd's Bush, in consequence of the houses being so crowded, to **SELL** by AUCTION, at their Central Auction Rooms, 67 and 68, Cheapside, London, E.C., on **FRIDAY, October 19**, **SELECTED DUPLICATE PLANTS** from their well-known collection of established Orchids.

Further particulars will appear in future advertisements.

Forthcoming Sales of Nursery Stock.

MESSRS. PROTHEROE AND MORRIS desire to call attention to the following SALES, which have already been fixed:—

OCT. 9.—At the **EASTGATE NURSERIES, PETERBOROUGH.**
OCT. 10.—At the **MANOR LANE NURSERIES, LEE**, by order of Mrs. North.

OCT. 10 to 13.—At the **MILFORD NURSERIES, SURREY**, by order of Mr. Maurice Young.

OCT. 12.—At the **NURSERIES, DORKING**, by order of Messrs. J. Ivory & Son.

OCT. 15 to 20.—Six days' Sale at the various NURSERIES at **NORBITON and LONG DITTON**, by order of the Executors of the late Mr. Thomas Jackson.

OCT. 22 to 27.—At the NURSERIES, **SUNNINGDALE**, by order of Mr. Charles Noble, six days' Sale.

OCT. 29 and 30.—At **OSBORN'S NURSERY, SUNBURY**, by order of Mr. John Turtle.

OCT. 31 and NOV. 1.—At the **ABBEY WOOD NURSERIES, KENT**, by order of the Executrix of Mr. G. Havelock, deceased.

NOV. 1 and 2.—At the **AMERICAN NURSERIES, LEYTONSTONE.**

NOV. 6.—At the **HALE FARM NURSERIES, TOTTENHAM**, by order of Mr. T. S. Ware.

NOV. 6 and 7.—At the **GOLDSMITH'S PARK NURSERIES, GROOMBRIDGE**, near Tunbridge Wells, by order of Mr. E. Hollamby.

NOV. 13 to 15.—At the **HORSELL NURSERIES, WOKING**, by order of Messrs. H. & C. Cobbett.

Other Sales are in course of being arranged, and the dates will be duly announced.
The Auctioneers desire to call the attention of Noblemen, Nurserymen, and others to these Auctions, and will be pleased to enter names on their permanent Lists for a supply of Catalogues.

Central Auction Rooms and Estate Offices, 67 and 68, Cheapside, London, E.C.

Bulbs from Holland.

Sales every **MONDAY, WEDNESDAY**, and **SATURDAY**, in Large and Small Lots, to suit all Buyers.

MR. J. C. STEVENS will **SELL** by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., every **MONDAY, WEDNESDAY**, and **SATURDAY**, at half-past 12 o'clock precisely each day, first class consignments of **HYACINTHS, TULIPS, CROCUSES**, and other **BULBS**, arriving daily from well-known Farms in Holland.

On view morning of Sale, and Catalogues had.

Wednesday Next.—(Sale No. 1745.)

400 fine named **AZALEA INDICA**, well set with bud, direct from Ghent.

MR. J. C. STEVENS will include the above in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on **WEDNESDAY** NEXT, September 19.

On view morning of Sale, and Catalogues had.

Thursday Next.—(Sale No. 1745.)

DUTCH BULBS.—SPECIAL TRADE SALE.

MR. J. C. STEVENS will **SELL** by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on **THURSDAY** NEXT, September 20, at half-past 12 o'clock precisely, extensive consignments of first-class **HYACINTHS, TULIPS, CROCUSES, NARCISSUS, SCILLAS, SNOWDROPS**, and other **DUTCH BULBS**, specially lotted to suit the Trade and other Large Buyers.

On view morning of Sale, and Catalogues had.

Lilium nepalense.

MR. J. C. STEVENS will **SELL** by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on **THURSDAY, September 27**, by order of Messrs. Hugh Low & Co., growing plants of **LILIUM NEPALENSE**. This grand species, to which a First-class Certificate was awarded by the Floral Committee of the Royal Horticultural Society on September 11, is now in flower in the Clapton Nursery, and it may be considered one of the very finest and most distinct new plant of recent introduction. Upwards of a dozen flowers were counted on old stem in native habitat, where temperature falls many degrees below freezing-point.

On view morning of Sale, and Catalogues had.

Valuable Established Orchids.

MR. J. C. STEVENS begs to announce that he has received instructions from Robt. Warner, Esq., of Chelmsford, to offer for SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on **THURSDAY, October 11**, at half-past 12 o'clock precisely, a portion of his well-known COLLECTION of ORCHIDS, comprising many fine specimens of *Vandas*, *Cypripediums*, *Laelias*, *Cattleyas*, *Odontoglossums*, *Masdevallias*, &c.

Further particulars in future Advertisements.

Important Unreserved Sale of Stove and Greenhouse PLANTS, GREENHOUSES, GARDEN TOOLS, &c. on **THURSDAY and FRIDAY, September 20 and 21**, at Cross-street House, Paisley, commencing each day at 12 o'clock noon. Highly important and extensive Sale of STOVE and GREENHOUSE PLANTS, GREENHOUSES, FORCING-FRAMES, VASES, GARDEN SEATS, LAWN MOWERS, GARDEN TOOLS, &c. (that belonged to the late Alex. Fullerton, Esq., Engineer, and sold, owing to the ground having been leased for building purposes).

MESSRS. HUTCHISON AND DIXON have been favoured with instructions to **SELL** as above, commencing each day at 12 o'clock noon, comprising:—*Chrysanthemums*, *Primulas*, *Cinerarias*, *Ericas*, *Epacris*, *Azaleas*, *Hybrid and Tea Roses*, *Amaryllis*, *Dracenas*, *Agaves*, *Pandanus Veitchii*, *Crotons*, *Ixoras*, *Chorozemas*, *Acalypha marginata*, *Habrothamum*, *Rondeletia speciosa*, *Valotta purpurea*, *Lapageria rosea*, *Ananassa sativa variegata*, *Hedychium coronarium*, *Cyanophyllum magnificum*, *Alocasia metallica*, *Gymnostachya Verschaffeltii*, *Pellionia Daveauiana*, *Begonia*, *Euphorbias*, *Poinsettias*, *Gloxinias*, *Epiphyllums*, *Caladiums*, *Hoya carnea* and *Paxtonii*, *Ficus elastica*, *Hydrangeas*, *Franciscas laurifolia*, *Clerodendron Balfourianum*, and *fatiax*, *Eucharis amazonica*, *Panacratium speciosum*, *Anthurium Scherzerianum*, *Gardenias*, *Heliotropes*, *Cycas revoluta*, *Dendrobium*, *Tabernaemontana grandiflora*, *Phoriums*, *Laelia anceps*, *Brassia*, *Lycaste Harrisonii* and *Skinneri*, *Oncidiums*, *Zygopetalum Mackayi*, *Cattleyas*, *Phaius grandiflora*, *Odontoglossums*, *Cypripediums*, *Cocos*, *Coccyne cristata*, *Calanthe vestata*, *Peristeria elata*, *Chamaecyparidaceae*, *Geonoma gracilis*, *Adiantums*, *Pteris serrulata*, *Davallias*, *Miltonia spectabilis*, *Marantas*, *Grevillea robusta*, *Hardenbergias*, *Phyllanthus nivosus*, *Fittonias*, *Acacias*, *Abutilons*, *Deutzia gracilis*, *Bouvardias*, *Lilium giganteum*, *Cyrtomium falcatum*, *Selaginellas*, *Cytisus*, *Prunus sinensis*, *Carnations*, *Geraniums*, and a large variety of other Plants, Lawn Mowers, Garden Roller, Barrows, Garden Tools, Garden Seats, Ladders, Steps, Wire Flower Stands, Flower Vases, Flower Pots, Hose Piping, Wire Netting, Pea Trainers, Heating Stoves, Archangel Mats, Tealwood Plant Tubs, Thermometers. Also the **WHOLE GREENHOUSES, FORCING FRAMES, &c.**

On view day prior and morning of Sale.

N.B.—The Plants are all in a fine healthy state, and are well worth the attention of intending Purchasers. The Greenhouses were erected by the celebrated horticultural builder, Boyd, of Paisley, and are in first-class condition. Full particulars in Catalogues, now ready, to be had free upon application to the Auctioneers, "The Mart," 7, West Nile Street, Glasgow.

Cheap Bulb Sales.

MESSRS. SMAIL AND CO. will **SELL** by AUCTION, at 123, Fenchurch Street, City, E.C., on **MONDAY, WEDNESDAY, and FRIDAY** NEXT, September 17, 19, and 21, at 12 o'clock each day, large Consignments of First-class **HYACINTHS, TULIPS, CROCUS**, and other **DUTCH BULBS**, specially lotted to suit all Buyers.

Addresses of intending Purchasers Booked for Catalogues of these Weekly Sales.

Linslade, Leighton Buzzard.

Within five minutes' walk of the Station.

MESSRS. STAFFORD AND ROGERS will **SELL** by AUCTION, on **THURSDAY, September 20, 1888**, at 3 o'clock precisely, by direction of the Executors of the late Mr. Whichello, the **PRODUCE OF THE VINEY**, comprising about 400 large bunches of Black Hamburgh Grapes, some ready for table, and the remainder for successive cuttings. Also the whole of the **FRUIT and GARDEN PRODUCE**, including a large quantity of the best sorts of Pears, Apples, and Plums, Greenhouse and other Plants, &c., subject to conditions to be read at the time of Sale.

Catalogues to be obtained of Messrs. STAFFORD AND ROGERS, Bedford.

Messrs. W. Maule & Sons' Nurseries, Stoke Gifford near Bristol, 1 mile from Felton and Patchway Stations, Great Western Railway.

CLEARANCE SALE.

MR. EDWARD T. PARKER has received instructions to **SELL** by AUCTION, as above, on **TUESDAY, WEDNESDAY, THURSDAY, and FRIDAY**, September 25, 26, 27, and 28, 1888, each day at 12 o'clock precisely, the remaining portion of the healthy and superior NURSERY STOCK, collection of choice STOVE and GREENHOUSE PLANTS, a few rare ORCHIDS, FRAMES, LIGHTS, Hay WAGGONS, CARTS, and interesting effects, the whole of which will be Sold without the slightest reserve.

Catalogues, post-free, of the Auctioneer, 39, Broad Street, Bristol.

To Florists, Nurserymen, and Others.

TO BE SOLD, by Tender, the **LEASE** and **BUSINESS** of a **FLORIST and SEEDSMAN**, for some years past carried on by Mr. J. C. Hawke, at **Newington** next **Sittingbourne**. The Premises include a 6-roomed Dwelling-house, 7 capital Greenhouses, about 50 by 11 feet; and a 2-stall Stable. Held under Lease, of which 17 years is unexpired, at the nominal rental of £18 per annum.

Sealed Tenders to be delivered at Mr. HEWETT, Newington, Kent; or to Mr. F. CLEAVER, 48, West Street, Sittingbourne, not later than Tuesday, October 2, and of whom full particulars may be obtained.

FOR SALE, FREEHOLD BUILDING

LAND, suitable for Fruit Growing and Garden Purposes, adjoining station at Ashford, Middlesex, near Richmond and Twickenham. 20 ft. frontage, 120 ft. deep; £20 a plot, or 6s. per month. Water, gas, roads made—free conveyance—plans.

Mr. FIELD, 3, Bucklersbury, E.C.

To Grape, Fruit, Tomato Growers, Market GARDENERS, &c.

TO BE DISPOSED OF, an Old-established **BUSINESS** in the Channel Islands, in full work.

Apply, in the first instance, by letter, addressed to A. R. C. H., Bedford Villa, Teddington, S.W. Principals only treated with.

Horticulturist's and Market Gardener's Business.

TO BE SOLD (the owner retiring from business after 15 years), within 10 Miles of the London Markets. Forty Acres of LAND, with large HOUSE, &c., held at the low rent of £130 per annum. Price £600, including three large Vineries with Crop of Grapes worth about £100, 140 feet run of Plant or Tomato Houses, a large quantity of Frames and Lights, Waggon, Vans, and Cart, 3 young Horses, Agricultural Implements, and all Crops and Dressings on land, which is in a high state of cultivation. For cards to view

Apply to Mr. ASHMOLE, Surveyor, Ilford, Essex.

Somersetshire.—In good Market Town.

OLD-ESTABLISHED, GENUINE SEED, NURSERY, FLORIST, and FRUIT BUSINESS, now doing a turnover of about £1500 per annum. Satisfactory proofs for disposal. Capital required, about £300.

Full particulars of EDWARD T. PARKER, Trade Valuer, 39, Broad Street, Bristol.

TO LET, VINERY and GLASSHOUSE

about 100 yards long, 8 yards wide, 14 feet wide. 150 Vines.—Address, Cliffe Cottage, Idle, near Bradford.

PROTHEROE AND MORRIS, HORTICULTURAL MARKET GARDEN and ESTATE AUCTIONEERS and VALUERS, 67 and 68, Cheapside, London, E.C., and at Leytonstone, E.

Monthly Horticultural Register had on application.

ORCHIDS.

THE LIVERPOOL HORTICULTURAL CO.

(JOHN COWAN), Limited,

Wish to call the attention of all lovers of

ORCHIDS

to their New Illustrated and Descriptive

CATALOGUE,

which will be sent Post-free on application.

THE VINEYARD AND NURSERIES, GARSTON, near LIVERPOOL.

LILIUM NEPALENSE.

MR. J. C. STEVENS will **SELL** by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on **THURSDAY** September 27, by order of Messrs. Hugh Low & Co., growing plants of **LILIUM NEPALENSE**. This grand species, to which a First-class Certificate was awarded by the Floral Committee of the Royal Horticultural Society, on September 11, is now in flower in Clapton Nursery, and it may be considered one of the very finest and most distinct New Plants of recent introduction.

Upwards of a dozen flowers were counted on an old stem in its native habitat, where the temperature falls many degrees below freezing point.

On view morning of Sale, and Catalogues had.

CARTERS' EARLY BULBS,

To produce beautiful White and Coloured Flowers for Christmas and Easter Decoration.

	PRICE
	Per 100 (p. doz. s. d. s. d.)
White Roman Hyacinths ..	17 6 2 6
The Largest Bulbs of the Year	
Double Roman Narcissus ..	10 6 1 6
Paper White Narcissus ..	10 6 1 6
Van Thol Tulips, red and yellow	5 6 0 10
Freesia refracta alba ..	12 6 2 0
Crocus, large white, yellow, and purple	2 6 0 6
The Easter Lily	Each
The White Easter Lily. We hold the entire stock of the largest cultivator of this lovely Lily.	1 0 10 6 & 2 0 21 0

Detailed CATALOGUE Gratis and Post-free.
All Parcels Carriage Free.

Royal Seedsmen by Sealed Warrants,

237 & 238, HIGH HOLBORN, LONDON.

SPECIAL.

HUGH LOW & CO.

Specially call the attention of their friends to the very varied and enormous Stock of both Indoor and Outdoor Plants and Trees growing in their Nurseries at Clapton and Bush Hill Park, earnestly inviting inspection of the same. When time is limited three and a half hours will suffice for a flying visit to both Nurseries, by taking the trains (very frequent) from Liverpool Street Station of Great Eastern Railway to Bush Hill Park Station, returning on same line to Stoke Newington Station, which is ten minutes' walk from Clapton Nursery.

CLAPTON NURSERY, LONDON, E.

TEA ROSES } A grand stock, in 5-in. pots, 12s. & 18s. doz.
A grand stock, in 7-in. pots, 24s. & 30s. doz.

GRAPE VINES } Black Hamburgh and other varieties.
Suitable for fruiting in pots, 10s. 6d. each
Suitable for planting vineries, 5s. and 7s. 6d. each.

FERNS } A fine stock, in 5-inch pots, 12s. per dozen.
A fine stock, in small pots, 4s. per dozen.
Catalogues on application.

THE LIVERPOOL HORTICULTURAL COMPANY (JOHN COWAN), LIMITED,
THE VINEYARD AND NURSERIES, GARSTON, NEAR LIVERPOOL.

ALL IN POTS

For Immediate Planting.

Clematis, in variety	Pyracantha
Ivies, do.	Garrya elliptica
Honeysuckles, do.	Pyrus japonica
Wistarias	" " nivalis
Brambles, pink and white bark	Virginian Creeper
Hops	" " Veitchii
Spanish Gorse	Lonicera flexuosa

CHARLES NOBLE, Bagshot.

DUTCH BULBS CHEAP!

FRENCH BULBS CHEAP!

ENGLISH BULBS CHEAP!

SEE OUR Special Wholesale Catalogue of Bulbs, Containing LIST of all the best varieties of HYACINTHS, TULIPS, CROCUS, LILiums, DAFFODILS, SNOWDROPS, IRIS, &c., free on application.

Please compare our Prices before sending your Orders abroad.

WATKINS & SIMPSON,
SEED AND BULB MERCHANTS,
EXETER STREET, STRAND, LONDON, W.C.

A NEW, BEAUTIFUL VIRGINIAN CREEPER.

AMPELOPSIS "DAWN OF DAY."

This is a Seedling from the old Virginian Creeper (Ampelopsis hederacea), and is certainly by far the most striking and beautiful of the Ampelopsis family.

Description fails to give an adequate idea of the telling loveliness of this grand creeper. Imagine an Ampelopsis with magnificent mottled foliage—charming in tints with the season, like a fairy transformation scene—until, adorned in its autumn garb, it farther enhances its beauty by the addition of beautiful berries—comprising in their different degrees of ripeness, most delicate and enchanting shades, varying from verdant green to rich deep purple.

A plant of this once seen will never be forgotten.

PRICE:—

2s. 6d., 3s. 6d. & 5s. 6d. each; 24s., 36s. & 48s. per doz.
N.B.—Three or more at rate per dozen.

A CLIMBING HYDRANGEA.

HYDRANGEA SCANDENS.

Thus described by the Amer can introducer:—

"This beautiful climbing plant is destined to take a front rank in popular favour. It is perfectly hardy and grows rapidly when well established. It so ceeds best if planted at the base of a large tree, up which it climbs, clinging to the bark like English Ivy. The engraving was taken from a specimen in the grounds of L. H. Meyers, Esq.

"The plant in question was a gorgeous sight, and attracted widespread interest and admiration when in full bloom.

"The flowers are pure white."

A tree that has this lovely pure white climber entwined in its branches presents the appearance of so many beautiful white stars shining through the foliage. And the flowers being so very beautiful and pure white renders it a most valuable acquisition to our hardy white flowering plants.

Market Gardeners, Bouquet Makers, &c., will find the blooms of this plant give to cut flowers a chaste, uncommon, elegant appearance, much lacking in our present strictly hardy, pure white flowers.

PRICE:—

2s. 6d., 3s. 6d. & 5s. 6d. each; 24s., 36s. & 48s. per doz.
N.B.—Three or more at rate per dozen.

These two Grand Specialties to be obtained only from

CREWS, COX & Co.
THE NURSERIES,
GLOUCESTER.

Dutch Bulbs.
GLADIOLUS BRENCHELYENSIS and other sorts. Can be had at moderate prices. Time now for Booking Orders. Also strong Clumps of LILY OF THE VALLEY and SPIRÆAS.
Apply to P. VAN TIL, Jz., Bulb Grower, Hillegom, near Haarlem, Holland.

RHODODENDRONS.

All the leading hardy kinds; also our sweet-scented and other greenhouse varieties. Nearly all with flower buds.

AZALEAS.

AZALEA MOLLIS and other choice varieties, well-budded plants.

Also GENERAL NURSERY STOCK, in the finest possible condition, and prices very moderate.

CATALOGUES free on application.

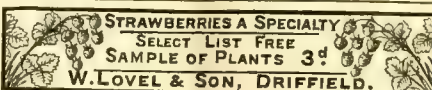
ISAAC DAVIES & SON, Nurserymen, Ormskirk.

PALMS, FERNS.

K. DROST begs to offer to the Trade a very extensive and unusually well-grown stock of Palms for Decorating purposes, for Table Plants (nicely shaped), and for growing on, consisting of KENTIAS, COCOS, LATANIAS, ARECAS, CORYPHAS, PHENIX EUTERPE, &c.; and further, a large quantity of extra good PTERIS TREMULA and DORYOPTERIS PALMATA in 48-pots, ADIANTUM VICTORIAL, in 60-pots, and thousands of SMALL FERNS of the best Market varieties.

AN INSPECTION INVITED.

KEW NURSERY, RICHMOND, S.W.



BULBS FOR EARLY FORCING

Carriage Free.
HYACINTHS, Early White Roman, extra fine bulbs, per 100, 15s.; per dozen, 2s.
" Early White Roman, ordinary size bulbs, per 100, 12s.; per dozen, 1s. 9d.
NARCISSUS, Paper-White, fine bulbs, per 100, 10s. 6d.; per dozen, 1s. 6d.
" Paper-White, new, large flowered, per 100, 15s.; per dozen, 2s. 6d.
" Double Roman, very fine, p. 100, 10s. 6d.; p. doz., 1s. 6d.
CHOICE STRAWBERRY PLANTS.—A splendid assortment of prepared Runners, including all the newest and choicest sorts in cultivation. Carriage free. LAXTON'S NOBLE, splendid early, per doz., 6s.; per 100, 40s. KING of the EARLIES, very early, per doz., 1s.; per 100, 7s. 6d. THE CAPTAIN, very fine, per dozen, 1s.; per 100, 7s. 6d. WATERLOO, splendid dark crimson, per doz., 1s. 6d.; per 100, 10s. PRESIDENT, 5s. per 100; BRITISH QUEEN, 3s. 6d. per 100; FROGMORE LATE PINE, 5s. per 100; KEEN'S SEEDLING, 3s. 6d. p. 100; AUGUST NIEAISE, 3s. 6d. per 100; JAMES VEITCH, 3s. 6d. per 100; DR. HOGG, 5s. p. 100; ALPHA, 5s. p. 100. And many others. 1000 in 10 choice varieties, our selection, 35s. 100 " 10 " " 5s. 6d.

DANIELS' BROS.,
TOWN CLOSE NURSERIES, NORWICH.

FOR ORCHIDS

AND

ORCHID GROWERS,

APPLY TO

F. SANDER & CO.,
ST. ALBANS.

JERSEY FRUIT TREES AND ROSES.

Carriage Paid. Strong healthy trees, the finest that money can buy. Roses wonderfully cheap. Cordons a speciality. Before ordering be sure to write for our Illustrated CATALOGUES. JOSHUA LE CORNU AND SON, High View Nurseries.

ROSES IN POTS;

all the best New and Old English and Foreign sorts, from 18s. to 36s. per dozen.

Descriptive List free on application.

RICHARD SMITH & CO.,
Nurserymen and Seed Merchants,
WORCESTER.

FERNS A SPECIALTY.

The largest, most complete, and profusely ILLUSTRATED CATALOGUE OF FERNS ever published, containing over 120 Illustrations, and much valuable practical information on the cultivation of Ferns, &c. 1s. 6d. post-free. Smaller Catalogue of over 1300 species and varieties free on application.

W. & J. BIRKENHEAD,
FERN NURSERY, SALE, MANCHESTER.

STRAWBERRIES.

Strong Roots, 4s. per 100. Plants in small pots, 16s. per 100; ditto in large pots, 25s. per 100. Descriptive LIST free.

RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

"ONLY THE BEST."

CHEAP BULBS FOR FORCING, &c.

Per 100.—s. d.
ROMAN HYACINTHS 15 0
DOUBLE ROMAN NARCISSUS 8 0
PAPER WHITE NARCISSUS 7 0
VAN THOL TULIPS 4 6
SECOND-SIZE NAMED HYACINTHS for forcing, our own selection, assorted colours 21 0
UNNAMED HYACINTHS for bedding 14 6
15 per cent. discount, cash with order. Carriage paid.
NAMED HYACINTHS, best quality, equally cheap.

GARAWAY CO.,
DURDHAM DOWN, CLIFTON,
BRISTOL.

WEBB'S

EARLY FORCING FLOWER ROOTS.

ROMAN HYACINTHS.

EARLY WHITE, Selected Roots ... 2s. per doz.
Ditto ... 15s. per 100.
FINEST NAMED HYACINTHS ... 6s. to 12s. per doz.

POLYANTHUS NARCISSUS.

DOUBLE ROMAN ... 3d. each, 1s. 6d. per doz.
PAPER WHITE ... 3d. each, 1s. 6d. per doz.

EARLY TULIPS.

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As a Supplement
TO THE
GARDENERS' CHRONICLE
FOR
Next Week, September 22,
WILL BE
Published an Ink Photograph
OF
VIEWS in SHRUBLAND PARK,
IPSWICH.



THE

Gardeners' Chronicle.

SATURDAY, SEPTEMBER 15, 1888.

CONFERENCE OF FRUIT GROWERS.

A COMMITTEE, consisting of about sixty of the principal fruit growers in the United Kingdom, having made arrangements for a Conference on Fruit Growing, a large and representative meeting was held on Friday the 7th inst. in the saloon at the Crystal Palace, Sydenham, and was followed by a second Conference on Saturday. On each day there was a crowded attendance, and the papers read evoked a highly interesting discussion on matters cognate to fruit cultivation. Friday's Conference began at 3 o'clock, under the presidency of Mr. T. Francis Rivers, Chairman of the Executive Committee, the Chairman inaugurating the business of the meeting by reading the following address:—

FRUIT CULTURE FOR PROFIT.

By T. FRANCIS RIVERS, Esq., SAWBRIDWORTH.

OUR meeting to-day is, I hope, the first of a series of meetings on the very important subject of fruit culture in England for profit. Within the last few years a very great advance has been made in this direction by the force of circumstances, and not by the speeches of any one man, however eminent. When Wheat was worth from 40s. to 60s. per quarter there was no need to apply the resources of the land to any other purpose, as the price of Wheat governed the price of produce, and was amply sufficient to support the different interests depending on the land. We have now, however, to face an altered condition of affairs. The land is with us, and is as productive as ever, but the consumer no longer pays the price required by the English producer; and although it is absurd to suppose that corn is not still the ruling crop, yet all cultivators are forced by circumstances to consider whether they cannot be assisted by other crops. One of these helps or aids is undoubtedly the cultivation of fruit, which is of daily consumption, and is, or ought to be, on the table of every individual in the United Kingdom. We have, therefore, to deal with a very large subject—nothing less than a national industry, and an increasing one, the development of which enters into conflict with no British interest, treads on no man's toes, is strictly non-political, will suffer no decay but improve as the years roll on, and in which succeeding generations are quite as much interested as we are, and is a pursuit from first to last

which never wearies. A man between seventy and eighty can make the superintendence of orchards both his pleasure and employment.

We have not, I think, in England held enough meetings of this kind; they are frequent enough in the United States, where fruit is an important factor in national life, and takes rank with the most advanced agriculture. In Belgium, a country which profits largely from the exportation of fruit, pomological congresses are constantly held. I have attended several, my first introduction to Belgian pomologists being at Namur in 1862, when the hospitality of the town was profuse and splendid. There can be little doubt that these meetings are of great public utility, and now that we are entering the lists and preparing to meet an enormous and increasing domestic want, it does not become a great and wealthy country like England to be anywhere but first in the race. Our climate is good, our soil so varied that we can find land for all ordinary crops. Although we are subject to cold and late springs, yet we do not suffer from the extremes of heat and cold to which great continents are subject, storms which destroy the fruit, and cold which will destroy the trees. Neither is it so equable that fruit trees are exhausted by continual bearing—a condition under which eight to ten years would be the term of the natural life of the tree—conditions which would, no doubt, be satisfactory to the fruit tree grower, but with the inevitable result of the supply overtaking the demand, and of the usual disastrous consequence. Of this, however, we need have no fear. We must, in order to secure early profits from a garden orchard such as I propose, plant on a different principle to that of our forefathers, who have bequeathed the hoary and lichen-covered trees dear to the artist and fruit-loving boys and girls. These picturesque old trees are as much things of the past as our wooden three-deckers, and instead of the acre of grassland with the customary 108 trees often broken down by stock, and producing more wood than fruit, the modern fruit orchard must be condensed into a compact compass, give more fruit in 1 rood of land than in 2 or 3 acres of the old-fashioned style.

Soil.—The most important part of the preparation of an orchard is, of course, the quality of the soil, and the intending planter should not hesitate to spend a few shillings in obtaining an analysis. I attribute a great part of my success in fruit growing to the nature and qualities of the soil. An analysis made by Dr. Voelcker for Mr. Prout, of Sawbridge-worth, gives the following constituents of the land on his farm, mine being the same formation, and closely identical. The quantities are contained in a depth of 6 inches per acre:—

Phosphoric acid ...	2½ tons	Sulphuric acid ...	2½ tons
Potash ...	5½ "	Nitric acid ...	22 lb.
Lime ...	37 "	Nitrogen ...	1 ton
Magnesia ...	4½ "		

I shall show presently by an analysis of fruit that the inherent qualities of this soil are vastly favourable for certain classes of fruits, and if the depth instead of 6 inches is extended to 20 inches, to which the roots of fruit trees will reach in searching for food, the aliment afforded is of inexhaustible amount. With our present knowledge of artificial manures all deficiencies in other soils may, however, be easily supplied; but I hope that you will agree with me that an analysis of the soil is indispensable, and that it is necessary not to judge only by appearance, but to gain an intimate knowledge of the soil constituents. A deep rich loam is sometimes misleading, and trees, though apparently vigorous at first, being deprived of their requisite food will become cankered and stag-headed. The cultivator must make it his business to cure this defect, which an elementary knowledge of chemistry and of the application of chemical manures will enable him to do. The position of the orchard is another important point. It is, I think, well known that frosts are more severe in low-lying lands near rivers, and fruit trees should consequently be planted above the line indicated by the rising mists.

The preparation of the soil is the next point, and I will assume that a man with 100 acres of land can afford to devote 1 rood for the cultivation of an orchard; this must be fenced with wire netting high enough to keep out hares and rabbits during snow, as one night's visitation of these animals would suffice to destroy the growth of years and to ruin the plantation. In my own case I have sunk a barbed wire to prevent burrowing. Wire netting is so cheap that this expense is not great, and with proper care it will last for years. At all events, it must be incurred, for although rabbits may be utterly destroyed, hares will travel for miles in search of food. In Belgium, in the fruit-growing districts, they are altogether absent, but it is not likely that this will ever be the case in England. The land, if at all infested with Twitch, should have a summer's fallow to eradicate the pest, as it cannot be easily destroyed when the trees are planted. It will grow amongst the roots, and is then most difficult to deal with. As early in September or October as practicable the rood of land, having been previously dressed with some 12 or 15 tons of good farmyard manure, should be trenched to the depth of 24 inches, the top soil being kept at the top, and the bottom broken up and turned over. I am convinced that this costs about 1s. 6d., per square rood, or £3 for the rood, according to the tenacity of the soil, and is absolutely necessary, as I have found from experience that my plantations made in a soil which has been frequently trenched bear more abundantly, and give finer fruit, and are more healthy than those which I have planted in holes only without moving the surrounding soil. The rood of land trenched and fenced will be ready for the reception of the trees in November, the soil being pulverised and settled. Considerable expense having been incurred, I propose to show that the planter will be able to recoup himself by the number of trees he can plant and the consequent produce. The rood of land will accommodate about 400 trees—that is, 200 trees planted 9 feet apart row from row and 6 feet apart in the rows of Plums, Apples, and Pears, and 200 bushes of Currants and Gooseberries between at 6 feet apart in the rows. The rood, therefore, will contain as many Apples and Plums as 2 acres of the ordinary farm orchard, and enough bush fruits to pay all rent and expenses, and will be protected from all injury from stock and game, and without such protection it is useless to plant.

Plums.—In my own district the Plum is the most valuable fruit I have, and it is not difficult to explain the reason of this superiority. The Plum, according to an analysis drawn out by Mr. Edmund Tonks, of Birmingham, contains:—

59·21 potash	15·10 phosphorus
10·00 lime	3·83 sulphur
5·48 magnesia	2·36 silicon
3·30 iron	

All of which constituents are largely present in my soil. It is one of the most valuable fruits of our domestic economy, it makes a delicious and nutritious preserve, and during the months of July, August, September, October, and even in November, it may be present daily on the dinner table either cooked or uncooked, and I believe that certain classes of the Germans almost exist on the fruit, such are its nourishing qualities. The sort which I plant the most extensively is the Early Rivers or Early Prolific; this was raised by my father some fifty years since, and in the most disastrous seasons I have never known it completely fail. I believe this immunity to be owing to the fact that from its precocity (as I have known the whole crop gathered by the 5th August) the tree has time to recover its strength in the period of nearly eight months which elapses between the gathering and the next season's blooming. The density of the fruit is very great, as it weighs 70 lbs. to the bushel. This is against the producer, and it ought to be sold by weight. I believe that as a dried fruit it will fully equal the dried French Plums. Close to the gathering of the Early Prolific I have the *Czar*, a large purple blue Plum of abundant fertility; then the *Sultan*, and at the end of September *Prince Engel-*

bert and *Pond's Seedling*; and beginning of October the *Monarch*, *Archduke*, and *Grand Duke*. I have discarded the *Diamond*, *Reine Claude de Bayay*, *Reine Claude d'Oullins*, *Belgian Purple*, as too uncertain for market Plums. For the farm orchard the interval between the *Sultan* and *Pond's Seedling* should be filled up by the *Victoria*, *Green Gage*, *Gisborne's*, and the *Pershore*, all of which are well-known market Plums, and are equally suitable for cooking, preserving, and drying, and I hope one day to see the grocers' shops continually supplied with these Plums of British manufacture. The *Cluster Damson*, well known for its enormous fertility; the *Prune* and *Shropshire Damsons* are also very important fruits which should find a place. The sort of tree to be planted should be what are usually called two or three years unpruned standards, the younger the better, as the transplanting causes little injury to young trees. I may here mention that the *Early Rivers* does not prosper in my soil when grafted on the *Mussel stock*. The future health of a plantation depends very much on the stocks used, and it is therefore necessary to be particular on this head.

Apples.—The fruit which stands most in national importance is of course the Apple, and it seems strange that we should allow foreign nations to usurp our position in the supply of this very necessary want. In the 200 trees required for the rood I should apportion 100 Apple trees, and for a continual supply of culinary fruit *Keswick Codlin*, *Duchess of Oldenburg*, *Lord Suffield*, *Stirling Castle*, *Worcester Pearmain*, *Manks Codlin*, *Ecklinville Seedling*, *Lord Grosvenor*, *Warner's King*, *Blenheim Orange*, *Baxter's Pearmain*, *Lady Henniker*, *Tower of Glamis*, *Betty Geeson*, *Dumelow's Seedling*, will last from August to the end of April; of dessert Apples, *Red Juneating*, *Irish Peach*, *Summer Golden Pippin*, *Devonshire Quarrenden*, *Williams' Favourite*, *Ribston Pippin*, *Cox's Orange Pippin*, *King of the Pippins*, *Blenheim Orange*, *Mannington's Pearmain*, *Lord Burghley*, *Sturmer Pippin*, *Allen's Everlasting*, will give a supply from June to May. On the *Paradise stock* all these Apples will form fruitful and profitable bushes and are all marketable Apples, and in my opinion are very much better than any *Baldwins* or *Newtown Pippins*. Some of these kinds, such as the *Manx Codlin* and *Stirling Castle*, can be planted 6 feet apart. Worked on the *Crab stock*, they are so fertile that they are soon dwarfed by the production of fruit. As with Plums, I should recommend trees two or three years old being planted. Of Apples of recent introduction I have not found Mr. Gladstone so good as it was represented. It is not earlier than the *Juneating*, is very unequal in size, and has the unpleasant habit of being in a constant perspiration. *Lady Henniker* is a large and fine Apple. *Pease-good's Nonsuch* is very handsome and large, but does not bear so freely in my soil as the Apples I have named. The stock English Apple, the *Blenheim Pippin*, is a long time coming into bearing, but when fruitful always commands a high price; this and the *Dumelow's Seedling* would, no doubt, be valuable for cutting into chips and rings.

The analysis of the Apple differs from the Plum. There are present:—

Potash ...	35·63	Iron ...	1·40
Soda ...	26·09	Phosphorus ...	13·59
Lime ...	4·08	Sulphur ...	6·09
Magnesia ...	8·75	Silica ...	4·32

Pears.—The Pear is the next in rank as an industrial fruit, but it by no means equals the Apple or the Plum in importance; indeed, during a great part of the year it is seen only on the tables of the wealthy. I have, however, had a considerable experience of Pears as standard trees. Within my recollection I have seen planted and destroyed the following sorts:—*Summer Bergamot*, *Lammas*, *Passans du Portugal*, *Windsor*, *Williams' Bon Chrétien*, *Dunmore*, *B. d'Amanlis*, *Marie Louise*, *Louise Bonne* of Jersey, *Winter Crassanne*, *Beurré de Capiaumont*, *Beurré Bosc*, *Comte de Lamy*, *Hessle*, and *Spring Beurré*, none of which ever paid the rent of the ground they occupied. I have, however, raised three sorts of Pears which will reverse this position. These are the *Beacon*, *ripen-*

ing the end of August and beginning of September, which is so fertile that grafted on the Pear stock it may be planted at the same distance as the Plum and the Apple; the Fertility, which is equally fertile either on the Pear or Quince; and the Conference, which is not yet introduced to the public. The two former are already well known. Of recent foreign Pears which are hardy, Madame Treyve, Souvenir du Congrès, Marie Louise d'Uccle, and Emile d'Heyst are marketable sorts; of baking Pears the Catillac is probably the best. The Pear differs in analysis from the Plum and Apple. It contains:—

Potash	...	54.69	Iron	...	1.04
Soda	...	8.52	Phosphorus	...	15.20
Lime	...	7.98	Sulphur	...	5.69
Magnesia	...	5.22	Silicon	...	1.49

The best class of tree for planting is the two and three years old on the Quince stock, excepting the Souvenir du Congrès and the Beacon, which should either be double grafted or on the Pear stock.

The Morello Cherry on the Mahaleb stock makes a very prolific bush. Grown in this way or trained to iron wires it may be easily protected with netting. Between the rows of pyramid or half-standard trees Currants and Gooseberries can be planted without in any degree injuring their produce, care being taken to return to the soil by chemical manure the constituents of which it is deprived by the growth and fruitfulness of the trees. By attention and occasional analysis there will be no more difficulty in doing this than in providing for the ordinary farm crops.

Pruning.—In a farm orchard it is not necessary to prune trees severely. Pears and Apples in unfruitful seasons should have the shoots stopped in June, and should be occasionally examined and the inner growth lightened to let in the sun and air. About the end of September the shoot made after the first pruning should be shortened to four or five buds. As soon as the trees are fruitful very little pruning is required. Plum trees require as little pruning as possible, but all gross shoots should be removed when observed. The sorts of Plums I have named fruit so early that they do not grow into very large trees. In these garden orchards it is not well to allow the trees to grow to more than 10 to 12 feet. Avoid the use of long ladders as much as possible, and the consequent expense and delay in picking, which ought to be done by women and boys.

Drying.—It is lamentable to hear of the shameful waste undergone when we have what is called a glut of fruit, and we shall hear no doubt in another paper of the proper means to be taken to prevent this loss. I have heard of tons of Plums in Worcestershire rotting because of the excess. There is no doubt that all this material could be saved and turned into food. The Persian shepherd goes out to his work provided with a bag of dried Peaches, which are so hard that he chastises his dogs with them. The dried Misch Apricot is a staple caravan food, made into cakes and carried in a small compass. We pay a large sum to the French for dried Plums, and the ladies in Portuguese convents are properly employed in preserving the delicious Guimaraens Plums. The absence of sun is no excuse for our being so backward in these matters. We can and do ripen Grapes as well as the hot sun of Spain, and artificial help will serve us as well for drying fruit as for ripening Grapes.

The disastrous malady termed canker may be much alleviated by attention to the soil constituents, and in a paper read at Birmingham Mr. Tonks stated that he had removed the disease by the application of chemical manures, potash being the principal ingredient.

The trees in my soil are almost entirely free from the disease, and this immunity is probably owing to the abundance of potash, which should be returned to the soil at every opportunity. The dressing applied by Mr. Tonks consists of nearly equal quantities of superphosphate of lime, nitrate of potash, nitrate of soda, sulphate of lime. Although pruning may be carried to excess it must not be neglected, as it is desirable to grow fruit and not wood. It can be seen by measurement that much

room is wasted by profitless and barren shoots. With judicious pruning this need not occur.

The Royal Agricultural Society has, for the first time, offered prizes for preparations of fruit next year. It has been a long time recognising the fact that land produces other necessities than corn and cattle. We fruit growers have done very well without this recognition, which has come a little late in the day. It is, however, a step in the right direction. The advance of pomology during the last thirty years has been quite as rapid as the advance of agriculture, and we may be certain that there is no finality. Fruit-growing, I beg leave to state, is not the handmaid, but the helpmeet of agriculture, and I believe the best interests of the land would be served if landlords and tenants would meet to discuss the conditions under which they can advance the cultivation of fruit to their mutual advantage, and if these meetings were made public every village in England would be benefited; in time competent advisers would be provided, and as the interests are national, it is hoped that means would be found of advancing money at a low rate of interest. There can, I think, be no fear of the supply overtaking the demand, and it is certain that foreign competition would not prevail against home-grown fruit if produced in sufficient quantity and of good quality.

The production of fruit under glass requires capital and skill, and although not national is, and will become, an industry of great importance. Nearly forty years since my father proved that the cultivation of Peaches and Nectarines could be carried on in unheated glass houses with a certainty of success unknown to wall culture. The orchard house has now become an established fact. For some time before this system had been in full work the only early Peaches—that is, those ripening in July—were the Early Nutmeg, the Early Ann, the Double de Troyes, all of them almost worthless except for precocity; now, however, we have ripening the 1st July, the Alexander, an American Peach, closely followed by the Early Beatrice, Early Louise, Hales' Early, Rivers' Early York, ripening during a month in which thirty years ago there was not a Peach worth having. During the months of August, September, and part of October there can be grown a continuous series of Peaches. The advance in Nectarines is equally conspicuous, the Lord Napier beginning a supply of Nectarines of high quality in August, which other sorts continue until the end of September, and ceasing with the Victoria. With these varieties, which were certainly not available thirty years since, an orchard house will give a continuous supply of Peaches and Nectarines for four months; a house 100 by 24 feet properly managed will produce over 3000 fruits of high quality. Such a house was built in 1855 at a cost of £147, and has produced for the last twenty-five years between 3000 and 4000 fruits annually. The cultivation of Grapes is advancing in our own islands with extraordinary rapidity, and although we hear complaints of the lowness of price, we do not hear that building Grape houses is declining; a good proof that no fear is entertained of the future prospects of Grape-growing.

Cold Storage.—The principle of cold storage is likely to be of very great importance in the future, and experiments are now being made with regard to the preservation of fruit under the influence of cold. Now I am convinced that if a low temperature cannot be usefully applied to keeping fruit, it may be made very useful for the storage of trees, particularly of Pear trees on the Quince stock. What I have to suggest is that Pear trees on the Quince stock may be placed in pots in a cold storage in a temperature not lower than 36° Fahr., and retarded until the middle of April. By this means the blooming season may be kept back until all danger from spring frosts is past. The fibrous roots of the Quince and the slow growth of the Pear render this class of fruit tree particularly suitable for this method; and as large Pears are worth in November and the succeeding months from 6s. to 8s. per dozen, cold storage, if possible, and if room for trees can be provided, will

give a handsome profit. I tried some few years since to find a system which I could employ, but I was then offered small receptacles like a miniature chest of drawers, when I wanted room for hundreds of trees.

In Belgium it is customary to form clubs of fruit growers to compete at the various horticultural shows; the combination of growers enables each man to choose his own particular fruit to show with his club. These contests are very interesting, and would, I think, if carried out in England, cause much friendly rivalry, and advance the interests of pomology. I must conclude by saying I cannot hold out any hopes of creating a large fortune by fruit growing; but it is an investment and an occupation which affords a more or less certain income, which will become more certain with improved means of preservation.

[Mr. Rivers' paper was followed by one on packing fruit by Mr. Webber, to illustrate whose remarks we introduce illustrations showing various methods recommended for adoption.]

PACKING FRUIT.

By MR. J. WEBBER, COVENT GARDEN.

IGNORANCE displayed in packing and want of knowledge of the condition in which fruit should be sent to market are the principal causes of loss to the fruit grower in this country. In packing we are far behind our continental brethren, for while they study not only the condition most suitable for travelling, but even the package in which the fruit is to be sent, we frequently send it too ripe, and make use of any package that may come to hand, with little regard as to whether it is too deep or too shallow, or will hold such quantities as are ordinarily marketable.

Packing is such an important factor in the attainment of good prices for market produce that it ought to be one of the essential points in the education of a gardener; for what is the use of growing the best fruit in the world if it be spoiled in transit? At least one-third of the hot-house fruit sent to market is depreciated in value, and sometimes rendered worthless, by the bad packing; whereas, if all came in marketable condition the price would be lower to the consumer, the supply being larger, and a better result all round would accrue to the grower. Bearing this in mind, I beg to submit the following remarks as applying to London markets.

There are three golden rules to be observed in sending fruit to market.

1st. Never send it too ripe. Peaches especially should be packed hard, as they travel better in that condition, and are rarely used by the shopkeeper till two or three days after purchase.

2nd. Never, if possible, send it over Saturday's market, as with the exception of Strawberries the retailer invariably provides himself beforehand with what he requires: Monday and Tuesday for the first part of the week, Wednesday and Thursday for the latter part. In hot weather, when fruit ripens fast, small consignments may be sent on Friday.

3rd. All fruit should be sorted into bests and seconds, and in some cases into thirds, as there are always buyers of bests, and buyers of seconds and thirds, but seldom buyers of mixed qualities.

Grapes.—Among hothouse fruits, Grapes being most important, as growing all the year round, claim our first attention. There are two sorts of baskets in which Grapes may be sent to market—viz., the "handle" and the "baby." The former (see Fig. 37, p. 293) is more useful for ordinary work and is safer as the handle is used for lifting, and to a certain extent is a protection to the fruit in preventing other goods being placed on the top. A little packing should be placed in the bottom of the basket, then a lining of white paper. The bunches should be packed close together, shoulder upwards, and the basket tied over with a sheet of stiff paper with a label "Grapes with care" on it. Grapes packed in this way will travel any distance. Special bunches travel in "handles," each bunch tied to the basket, without the centre being filled up. The latter mode is recommended in the case of special fruit only. The "baby" basket should only be used for short dis-

tances, and where a regular supply is sent, and where the railway porters are accustomed to them. It is more convenient than the "handle" for displaying in the shop windows, and shows off the fruit better. The basket should be lined with white paper and a little packing in the bottom, the bunches being simply laid in close together. The whole fits nicely into a hamper known as a "flat," and with the ordinary Grape label invariably arrives in good condition.

Peaches should be packed in shallow boxes of sufficient depth to allow a good bed to lay upon and a slight layer of packing on the top. The box should contain only twenty-four best or thirty-six seconds. Each fruit should be wrapped in soft paper. A very effective way of packing Peaches, so as when the box is opened the class of fruit can be seen at once by the buyer, is to roll a double slip of tissue paper round each fruit, leaving the crown exposed. This requires a sheet of paper to be placed over the fruit before finally filling up with the packing. I know of no packing better than moss, which should be properly dried and cleansed from all grit. It is cooler and more elastic than any other substance. Each fruit should be completely surrounded with it. Next to moss is bran, but care should be taken to shake it down well and refill the box before fastening the lid, as it settles down with the oscillation of travelling, leaving part of the fruit exposed and liable to injury. Wadding is not elastic, and is too heating.

Strawberries should be packed in boxes in single layers containing from 1 lb. to 1½ lb., according to size, each Strawberry being placed in a Strawberry leaf on a thin layer of moss, with only a light layer of leaves on the top. Each package of say five or six boxes should have a label, "Strawberries, with care, this side up," on the top of it. When the season is full on, they lose value if delivered after 8 A.M., as the trade then supply themselves from the "morning gathered," delivered by the growers themselves.

Tomatos should be packed in "handle" baskets containing from 18 to 20 lb., and should be well coloured, but not too ripe, otherwise they are apt to split.

Outdoor Fruit.—Suitable baskets for sending outdoor fruit to market can always be obtained of the salesmen. These consist of quarter-sieves, half-sieves, and sieves. The former hold 12 lb., and are used for best samples of all kinds of soft fruit. Half sieves are used for Cherries, Currants, Plums, Pears, and Apples. Sieves are used mainly for Apples. A half-sieve of soft fruit should contain 24 lb., of Plums 28 lb., of Apples from 21 to 24 lb. Soft fruit should be simply stuck down with a sheet of paper. Hard fruit should be stuck down with dry packing, such as hay or straw. All fruit opens better with a sheet of paper covered over.

Pears, especially early varieties, should be sent directly they can be removed from the trees. On no account should they be allowed to get ripe. The system in vogue in France is well worthy of imitation by growers in this country. The fruit is carefully sorted, in many instances into four sizes. Cases are made to contain two tiers, each tier consisting of twenty, twenty-four, thirty, and thirty-six fruits. A layer of paper shavings is placed between each tier, and one top and bottom. When the fruit is extra large and kept late in the season, cases to contain a single layer of twelve and fifteen are used. If packed in half-sieves, the better sorts should be placed in layers with a little packing between.

Carriage.—With regard to the cost of carriage, little can be said here except that the rates, as we all know, are very unsatisfactory, little or no inducement being held out by the great carriers for the development of produce on a small scale. Special rates may sometimes be secured for regular consignments over 28 lb., but even then there is often a difficulty in keeping the railway company to their contract. All goods by passenger trains should reach the market by 7 P.M., so as to be ready for the next morning's trade, as if not they are seldom

delivered till after the market is over, and therefore lose in value.

Mr. SAMUEL RAWSON, of Birmingham, followed on the same theme, and was introduced by the Chairman, who said Mr. Rawson had earned the commendation of a great fruit man—Mr. Gladstone. In the course of his paper Mr. Rawson said anyone could grow fruit if they had the trees, the land, and the climate; but it was not everyone who could make

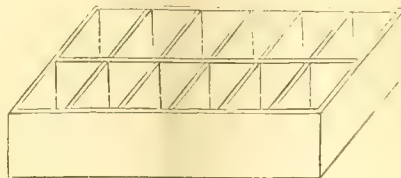


FIG. 34.—METHOD OF PACKING CHOICE FRUITS.

the best price of it by judicious marketing. They were all aware of the old adage, "Put the best side towards London," and knew pretty well what toppers meant; but it was very unfair to the salesman and the customer in town to top or face the baskets of produce with a few of the best fruit to cover idleness or carelessness in picking. This was often the

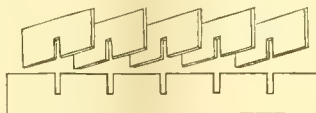


FIG. 35.—MOVEABLE RACKS FROM FIG. 34.

reason why many complaints were made of certain growers receiving bad prices. In France they managed much better. Perhaps it might be said that their dwarf pyramid trees and their cordon system of growing facilitated the picking, and the fruit was much freer from bruises; but did the English fruit grower ever trouble whether the fruit

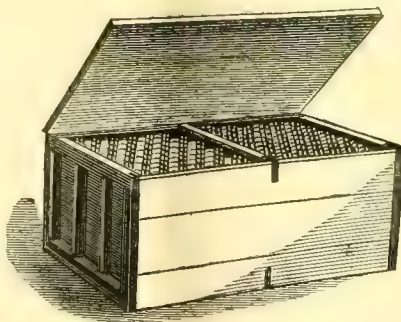


FIG. 36.—PACKING BOX FOR CHOICE FRUITS WITH MOVEABLE TRAYS.

was bruised or not? No, he did not. In nine cases out of ten all he cared about was getting it off the trees and sent to market, and in many cases without even studying whether this or that sort ought to go to market first. One grower's packing would make double the price of another's if his mark had become known as an honest packer's. The French often realised more for 1 ton of their fruit than English growers for 2 tons. Why? The French did not begrudge employing labour, while the English grower growled and grumbled if he employed a few extra hands. Labour would and must pay. He related an amusing incident which came under his notice in Cornwall, and maintained that the way Strawberries were packed in that county was

abominable. Though they grew good and early fruit in Cornwall, it was spoilt before it got to market. Pounds of Strawberries were wedged into an old Orange box with a little Fern between each layer. He could not understand what the Fern was for, unless it was to cook them. The Fern was admirably adapted for "sweating" fruit. His opinion was that Strawberries ought to be sent to market on wooden trays about 3 inches deep, 2 feet long, about 15 inches wide, made to fit into each other in nests of six, with nothing over them except a lid on the top box, the trays to hold 12 lb. They could be carried about the beds. The whole six being bound by a cord, six dozen could be sold together. None but the finest fruit, unless in a scarce season, should be put in these trays. With respect to marketing, he thought that with extended fruit cultivation they would want extended marketing distribution or manipulation, or whatever they liked to call it, but it simply meant that the fruit must be disposed of in the most economical way. Salesmen would have to be provided with very large capital, and also the convenience for preserving the fruit and vegetables in superabundant seasons, by converting the fruit into jam or pulp, and preserving the vegetables in brine to provide against scarcity in crops for another season; besides, the surplus left from each day's sales must be manufactured into jam, pulp, or pickles, thus keeping the market clear and preventing goods being sold at those ruinously low prices that were obtained at the end of the market. It was to the manipulating of this surplus that the growers in an extended fruit cultivation must look for the profit they would reap for their trouble; and he would advise Fruit Associations or companies supported by capitalists and growers who could act as their own salesmen and to whom large jam makers could apply for their supplies of fruit. There was but one way of dealing with the produce with the most advantage to the seller, and to the immediate benefit of the people generally, and that was by a combination of the landowners, farmers, market-gardeners, fruit and vegetable growers, agricultural labourers and all classes interested to form companies or societies, properly and carefully organised and carried on in large centres, to provide for the reception and sale of produce, so that all classes might be interested in the success of such undertaking. To make such a company successful in any large centre was easy. It might be formed amongst capitalists as companies generally were formed, or it might be the parties specially interested who might combine to start and support it. The latter, he thought, would be the more profitable combination, as it certainly would be the more preferable, and in such a case he thought it should be a company, co-operative in principle, registered under the Companies' Acts and limiting the liability of the shareholders to the amount of their shares.

Mr. ROBERT SMITH (Yalding) read a brief paper on "The Packing of Apples," urging that if they wished to compete successfully with the foreigner English fruit-growers must pay closer attention to the packing. He produced a specimen basket of his own design, which, being lined with felt, prevented the fruit from being bruised.

LAND TENURE.

Mr. ALBERT BATH (Foot's Cray, Kent) read a paper on "Land Tenure in Relation to Fruit Cultivation." As a fruit-grower of twenty years' experience he knew a little where the shoe pinched. He might say in a few words that the reason why more fruit was not grown in this country was, not want of suitable soil or climate, but defective laws relating to agriculture. He had taken an active interest in endeavouring to obtain an Agricultural Holdings Act which would give the tenant full security for capital which he had invested judiciously. That the Farmers' Alliance had that object in its programme was his (Mr. Bath's) chief reason why he continued to act as its secretary. He alluded to a meeting held at Sydenham a few years ago, at which most of those present were fruit-growers, and where a resolution was carried

unanimously declaring it a measure affording the occupiers of land full security for the whole of the capital invested by them in the improvement of their holdings, was urgently needed in the interests of the tradesmen, labourers, and the community at large. For many years in the fruit-growing county of Kent there had been this want of security which had prevented farmers commencing or extending that important industry. Travelling through the States to Canada he found farms growing as many as twenty acres of Apples, and when he asked the probable market the reply was, "We are growing chiefly for the old country," meaning England. Those tillers of the soil in the States were owners of the soil, and therefore they had full security for their capital and no fear of landlords raising their rents upon improvements or of confiscating their property. He was not blaming the landlords; the blame rested on the tenant for not having sound and good laws to protect himself. They were only human beings, and if he were a landlord probably he should be worse than some others. At present, land which ought to be capable of transfer in an easy and inexpensive manner was too dear for the farmers to buy and cultivate at a profit. They must therefore have an alteration in the laws. Several Agricultural Holdings Acts had been passed professing to remedy the grievance, but none had gone to the root of the evil.

Lord Beaconsfield's Act of 1875 was of no use to the fruit-grower, as it excluded him from its provisions; neither was it of any use to the pure agriculturist. He farmed under three landlords, all of whom contracted themselves out. The Act of 1884, passed by Mr. Gladstone, though professing good to the fruit-grower and farmer, did not accomplish more than the Act of 1875. He (Mr. Bath) would suggest an Act of Parliament, under which the tenant might carry out whatever improvements he wished without the consent of the landlord, and when leaving his farm offer them to the landlord or the incoming tenant by what was called "free sale," and if the tenant planted good sound sorts of fruit he would get the value for his outlay. He had taken a holding on that principle, and found it very satisfactory to the outgoing tenant and to himself.

LORD SUDELEY'S FRUIT FARM.

Mr. J. W. BEACH (Brentford) gave a description of farm extension on Lord Sudeley's estate. He said that Lord Sudeley had five farms at Toddington, Gloucestershire, under fruit cultivation to the extent of from 800 to 900 acres, viz., Norton Field, Home Farm, Hales Farm, New Town, and the Leys. The aspects were west, south, and south-west; and was sheltered by the Cotswold Hills, the soil in some parts being heavy, of the blue lias, others of a light friable loam. One field occupied 166 acres, being planted with standard fruit trees in rows, 16 feet apart, and the same distance asunder, in some instances extending to the length of $\frac{3}{4}$ mile. Space being strictly economised in the market garden style, the intermediate space was filled up with Currants, Gooseberries, Raspberries, and Strawberries. Bush Damsons were also planted in addition to the other standard trees. There were forty-four varieties of Plums, comprising about 300,000 trees, Damsons about 30,000, Raspberries also covered about 200 acres, Strawberries from 120 to 130 acres, Black Currants 212 acres, Cherries and Apples to the extent of about 70 acres, and Red Currants 50 acres. The fruit trees were very productive generally, with the exception of a few portions where they were attacked by blight when in blossom this season. The greatest quantity of the fruit was used in the manufacture of jam, a large factory being erected at Norton Field Farm. Lord Sudeley was also giving his attention to the cultivation of flowers for market purposes, having erected a number of Belgian glasshouses, which were also suitable for growing Tomatoes, Cucumbers, Grapes, &c., and any kind of fruit which required protection. The baskets were also made upon the spot from the Osier beds on the banks of a stream running through the estate.

IMPROVING ORCHARDS BY GRAFTING.

By Mr. J. MILLER, GARDENER TO LORD FOLEY, RUXLEY LODGE, Esher.

WHERE old fruit trees that are healthy and full of vigour are worthless for the market in a monetary sense, no time should be lost in grafting upon them new heads of an improved variety.

If the system of stock-grafting was better understood, especially out of the fruit-growing districts, worthless sorts will seldom be seen in the market, their place being taken by more profitable fruit. But to expect this to be done by the tenant, upon a yearly tenancy, is out of the question. To meet the difficulty to a certain extent, industrious tenants should be supplied with trees from the home nursery, or could be supplied by the trade at small cost, the tenant being under an agreement to protect them. Stock-grafting is easily done, but the system requires to be known. As done in the fruit districts by local grafters, each workman bears a degree of merit as to his success. When once known, none need be afraid to cut off the third part of a worthless tree any time during the winter months, cutting it ship-shape in order that the grafter has little to do when the season comes but to square the ends of the branches and insert his grafts. The season for grafting large trees is rather an unsettled question. I may state that we had great success last year at Ruxley Lodge in grafting old trees, and the strong shoots which I exhibit speak



FIG. 37.—BA-KET FOR PACKING GRAPES.

well for the system. The heads were cut off the trees in the month of February, and grafts were secured about the same time, and laid by the heels in a shady place to prevent any premature growth. The grafts for this require to be clean, and free from American blight and canker, from two to three years' growth, and in size about the thickness of one's second finger. The specimens of shoots which I produce were simply short grafts a year ago last May, the whole of the grafting being done in the last fortnight of the month. The work has only been done about sixteen months, yet the shoots have had two seasons' growth, and reach nearly 10 feet in length; some of the stronger sorts are even longer. Upon a close examination some of the strongest shoots may be seen to be showing fruit buds, and if we should be favoured with a fruitful season next year I have no doubt, from present appearances, we shall have a fair show of fruit. Stock-grafting does not require to be commenced so soon as small whip or tongue grafting. The general order is—Cherries first, Plums next, finishing up with Pears and Apples.

The tools which are required for the purpose are but few—a pocket knife, a shoemaker's knife, a tenon saw, and a small mallet.

A branch 2 inches in diameter requires two grafts to thoroughly unite the end of the branch; one of 4 inches, three grafts; and so on in proportion. A stock or head of 9 inches requires seven grafts in order to keep the head living until the leading

shoots form the new tree, then all weakly and ill-placed shoots can be cut away. There is no particular secret in manipulating the end of the branch to receive the grafts further than shaving away a portion of the rough bark, so that it may better match the thin or inner bark of the scion, which ought to be placed so as to accurately face each other. Daubing or claying up the grafts is no doubt of some importance, especially for small grafting. For trees grafted upon the stock principle the daubing material may be of a coarser nature than for the whip or tongue grafting. Good clay with a proportion of tough hay, well compounded together, and thoroughly worked in and round the grafts to prevent its being washed off by the weather, is all that is required for stock-grafting. I may here state that heading the trees at the proper time and securing and properly keeping the grafts is of quite as much importance as carrying out the work.

DISCUSSION.

Mr. A. DEAN (Bedfont) opened the discussion by proposing on behalf of the Executive Committee a vote of thanks to those gentlemen who had kindly read papers. He did not think fruit-culture would save agriculture from drowning, but it would do something to help it to swim. If they were to believe the statement that £250 per acre could be made by fruit-growing, such a sum represented an Eldorado. It had been mentioned that the Royal Agricultural Society proposed to offer prizes in connection with certain fruit-products at their Windsor show. That might be advantageous, but he could have wished that the Society had offered prizes for something better than such wretched products as cider and perry. They had heard a striking eulogy about their continental brethren in regard to their preparing and packing fruit for the market. Englishmen, he thought, had been in the past a little too egotistical, and he trusted they would gather lessons from the facts placed before them.

Mr. A. H. PEARSON (Chilwell) said the great idea seemed to be Covent Garden, but it was a great mistake to rush their fruit into one centre. He could obtain a better price for his fruit, milk potatoes, and other produce, than if he sent them to markets already too congested. He concluded by seconding the resolution.

Mr. FOWLER (Aylesbury) urged that it was of great consequence that some means should be adopted for the preservation of fruits. He referred to what Messrs. Crosbie and Blackwell had done in this direction, and produced for inspection metal, glass, and stoneware airtight vessels. They need not despair in fighting the foreigner in every way.

Mr. P. VEITCH regarded the Chairman's paper as giving a right basis for discussion; but if the Chairman had given them a hint as to what fruit to grow on fairly good soil, he would have done them a service. Mr. Dean had spoken severely of perry and cider, but cider apples gave a good return to the farmer. He (Mr. Veitch) had no doubt that calling attention to artificial manures would do a good deal of good, especially if such manures could be obtained at anything like a reasonable price, so that they could be used on an extensive scale.

Mr. READ (Weybridge) thought they should grow such fruits as would yield the quickest return for labour.

Mr. JAMES pointed out that there were thousands of acres of English land at present lying uncultivated; and until an alteration in the land laws had been effected, they would not see the state of prosperity that every one desired. He would like to see conferences of this kind at every flower show.

Mr. J. R. HALE (Thornton Heath) attributed present difficulties to the extraordinary tithe; and the sooner the tithe question was fairly met and settled, the better for fruit-growers.

Mr. REED (Norwood) said the eternal slumber which had settled upon the British farmer was incomprehensible. He trusted this would be the forerunner of many assemblies of the kind.

Mr. D. T. FISH (Bury St. Edmunds) wished the

Chairman would supplement his analysis by a list of the best sorts of fruit to grow on poor soils. Not only should the farmer be encouraged, but the labourer also should be encouraged to grow fruit. The best Nonsuch Apples he had seen were grown at the end of a cottage, with no soil at all, but in a hard gravel walk which had never been disturbed in the memory of the oldest inhabitant. They were fed by the slops of a small household, and were the finest, the reddest, the most luscious, he had seen from that day to this. It ought not to be beyond our legislators, or the suggestions of Conferences like that, that some means should be devised for giving the labourer more soil.

MR. GEORGE BUNYARD (Maidstone) thought the manuring of orchards and cold storage were subjects which they must work round.

FRUIT DISTRIBUTION.

THE following paper on "The Science of Fruit Distribution" was read by D. Tallerman, Esq., on Saturday:—

Of the various means available to fruit growers for the disposal of their crops, that by which they can be brought within the reach of consumers in a full-flavoured, fresh, and bright condition is the one which will leave the most profitable results to the producers, and lead to the most successful permanent development of the industry in which they are engaged. Fruit may be preserved, pulped, evaporated, refrigerated, or manipulated in any other manner that will enable it to be converted into a merchantable commodity possessing a distinctive cash value, but there yet remains the undeniable fact that it is in its fresh ripe condition, while clothed with its undisguisable natural bloom, endowed with its fragrant aroma and luscious flavour, that fruits have their highest and best values; therefore, the most important subject that can occupy the minds of fruit-growers is, how they can best place their produce within reach of consumers in that inviting condition, in order to acquire the full benefits that accrue from it. The subject naturally involves a consideration of the means of rapid and effective distribution which are absolutely essential to secure successful results.

The science of fruit distribution is necessarily a commercial study, and comprises the principles that growers should practise to place their produce within reach of consumers.

1. When and where they may be required.
2. In the best possible condition.
3. At the least possible cost.

The means by which these measures, simple as they appear, can best be successfully attained, involves attention to matters of detail, the necessity of which will be readily acknowledged by all engaged in fruit growing and marketing; but to ensure a beneficial result from the consideration of the subjects which we are assembled to discuss, it is necessary to treat the various branches of the trade from specific and not general points, inasmuch as although the general condition of the subject may be speedily summarised, that will not bring us any nearer the position we hope to reach. Briefly, then, we are a large community existing in a small space. Fruit consumers abound in all directions, fruit producers are to be found but in few places. The consumers are counted by millions, the producers by hundreds. The consumers require all the fruit that is grown and more; the growers do not profitably sell while fresh the yield of their orchards, and are driven to seek other outlets in order to secure even a nominal return for their crops. It must be borne in mind that the circumstances and conditions that surround individual growers and consumers vary very largely, and courses of procedure that would bring advantageous results in one direction would be inappreciable in another.

With growers we have a wide range of conditions to deal with, from the owners of the numerous old orchards of large acreage to which little or no attention is given, to the cultivators of small quantities of fruit under glass or in the hothouse, which are the subject of incessant care and watchfulness.

With consumers we also have an infinite number of conditions which embodies a still wider range of thought; from the wealthy members of the upper classes who require, and will have at all times if procurable, for their tables regardless of cost, any fruits that may be rare, choice, and of fine quality, to the buxom matron who buys a couple of pounds of whatever fruit the costermonger may have on his barrow, so that her husband's and family's dinner may be complete with its dumpling or pie. Every variety of condition has to be met with and provided for, therefore it must be evident that the more these existing and varied circumstances are understood, and the nearer they can be met and provided for, the greater must be the benefits that will accrue to fruit producers. It is in the study of the numerous features that present themselves, and the determination of the most advantageous manner in which they can be encountered and dealt with, that comprises the science of fruit distribution. This opportunity does not enable me to enlarge upon the whole of the subjects which are naturally affiliated with the question, therefore I content myself by indicating the direction to which attention may be advantageously given.

With respect to the first point—viz., the disposal of fruits, when and where they may be required—I would point out to growers that with the exception of the county of Kent and the Metropolis, the centres of fruit production and fruit consumption are not contiguous to each other. By an inspection of the diagram of the kingdom, showing the population and the fruit area of each county, it will be seen that the bulk of our fruit supply is produced in a very few districts, while a large portion of the country which is densely populated is devoid of any fruit produce of its own locality but relies upon other districts, and that the people gladly purchase any quantity of fruit that may be brought to them in good order and condition. That this position is undeniable may be gathered from the results that have attended the efforts of a few private parties who have relinquished the old practice of sending to the markets of Covent Garden, the Borough, and Spitalfields, and despatch their fruits instead to Manchester, Bradford, Leeds, Glasgow, and other largely populated northern towns, where they have made a profitable outlet for a large quantity of fruit that otherwise would have helped to glut the London markets. There are an enormous number of small towns in the mining and manufacturing districts that would welcome a supply of fresh fruit which they do not now obtain. In order to directly meet the requirement of these towns it is desirable that the fruit growers of each district combine with each other and organise themselves into local societies in order that they may be in a proper position to ascertain what fruits they have to sell, when they will be ready for gathering, and then ascertain the requirements of particular districts and what they are likely to buy, so as to enable them to take steps to supply them. It is not possible to attain this position by individual action, for no single grower could supply from his own crops the particular requirements of the traders of a town; but these requirements, if once ascertained, which they may be in a general sense, could be furnished from the crops of several growers.

Where local organisations are thus formed they could readily communicate with the central organisation that has been formed to place itself in communication with the traders of all districts, in order to simplify the distribution of food products, and they, by ascertaining the probable fruit requirements of a district, and having a knowledge of the crops of fruit that were available in many localities, could arrange to dispose of and deliver them direct from the orchards. The defect that fruit growers suffer from arises from the fact that while their transactions are naturally of an individual character, and must remain so, they have had no recognised central representative organisation who could collect information from varied districts as to their possible fruit requirements, and disseminate the knowledge among those who had the fruit to dispose of, and also

arrange many other subjects of interest and importance, such as packages, railway rates, transmission, &c., all matters small in themselves and readily adjustable, but each of which forms an indispensable connecting link in a commercial chain, without which a transaction cannot be carried through. Hitherto fruit growers have left everything with their salesmen, whose interest it is to collect and retain all the information, and to obstruct any course by which the consignment of the fruit to themselves would be interfered with. They therefore have a vested interest in obstructing any movement that would have a tendency to impart to growers any information that would advise them when and where fruit was required, which is the keystone to the system of direct distribution.

The second prominent feature incidental to scientific distribution is the delivery to consumers just what they want in the best possible condition. The interests of sellers will be considerably advanced by full attention being given to this subject, which presents many features requiring careful consideration and forethought, that without in any way adding to the costs of cultivation and delivery may materially aid to increase the amounts receivable for the fruits.

Be it remembered that no fruits grow exactly all alike, as bricks are made, but every tree or bush will contain some fruits of a more or less choice character. Wherever these can be selected they will, if packed by themselves, realise a much larger proportionate price without interfering with the price of the whole crop. There are different classes of buyers in all perishable food products, and more especially in fruits, and there are different members in each trade who supply the requirements of buyers. Anyone going into an average sized orchard when the fruit is ripe and ready for gathering will, upon examination, discover choice specimens fit for an exhibit on the window of the highest class fruiterers at the West End of London. Other fruits may be seen that, by themselves, would furnish a reasonable supply of more than a general character. Further, there will be seen the remainder of the growth suitable for the costermonger's barrow or the jam pot. If they remain while the fruit is gathered they will see it all packed together in such a way that no regard is paid to the choice specimens of fruit that may be there, but they are so dealt with that they will find their way to one destination, which, as likely as not, may be the costermonger's barrow. This is the mistake that growers make, and where they unknowingly suffer material loss.

The disposal of green fruits is necessarily a matter of commercial experience, and to attain best results all fruits should be properly assorted and classed as to character, condition, and description—this in America is called "grading." Fruits thus dealt with and placed in packages of a uniform size enjoy a marked advantage in their disposal, as buyers at a distance may order them by description, while at present they can only be purchased by personal attendance and sight. The South of Ireland and the North of Scotland furnish examples of the great value attaching to the proper classification of perishable produce, for it is to the independent branding of butter at Cork and herrings at Wick and the other Scotch fishing ports, that have brought the trades of those districts to their present high stage of development, for it is owing to the facility which the storekeeper in the colonial bush can send to his merchant in London for what he requires in Cork butter, either in firsts, seconds, thirds, or fourths, knowing exactly what he will get, and can learn the current market price on the day of purchase. So also the grocer of an inland town in eastern Europe can send to his Hamburg agent for so many barrels of Scotch herrings, and can order "Crown Falls," "Spents," or "Matties," and his exact requirements are supplied owing to the wise precautions those in the Scotch herring trade have adopted, by which not only are the character of the contents of their barrels known by description all over the world, but the single fisherman with his few barrels of herrings enjoys an equal position with

the largest factor of the district, and can readily obtain the market price of the day for his small supply when they have once been examined and branded by the appointed officials. This should show fruit growers the advisability of their combining for the purpose of establishing a definite basis upon which their produce should be classed and uniformly packed, by which the contents of a package would be known to wholesale and retail dealers without a personal inspection. For this purpose fruits should be properly sorted and classed as to character and condition into—

1. "Choice," for special high-class trade; "Prime," for first-class trade; and "Ordinary," for general trade.

2. Assorted as to description into firsts, seconds, and thirds sizes.

3. Choice and prime fruits should be packed into clean, bright, and carefully made packages, so as to present to the buyer a luscious, attractive, and tempting appearance. Ordinary fruit may be packed for general sale in smaller baskets than at present.

4. It is important to act on the principle that the smaller the package the wider the area of consumption, and the better the contents will keep in good order and condition.

5. Also, that selection as to size and colour with regular packing are the best means for ensuring speedy sales in extended districts at good prices.

6. Growers should remember and act on the fact that a barely perceptible taint or speck that is carelessly dealt with by the packer at the farm will in a short time become an odious blemish, and by the time the fruit reaches the market, not only becomes spoiled itself, but damages other fruit, and spoils its value.

7. A good crop requires marketing with commercial experience and judgment. A combination of growers to amalgamate their crops in order that large selections of particular descriptions may be made available for disposal in special directions, and in districts where required, will lead to larger prices being received.

8. Specially choice goods, suitably packed for display in retailers' shop windows, will at all times command extreme high prices.

9. Inferior specimens of fruits packed with prime specimens, reduce the value of the prime.

10. Goods packed, branded, and numbered, that their contents and condition may be known without a personal inspection, will be sent for by purchasers in remote parts, whose convenience or ability does not allow them to attend a market personally.

The simplicity, ease, and readiness by which these apparently complicated measures may be speedily carried into active existence will be promptly seen by a glance at a package that has been devised for the purpose, which lends itself in every way to the proposed condition of things, for inexpensive in production it is effective in character, as by its means fruits may be classed, packed, and safely transmitted to any part of the kingdom in large or small quantities, where they will arrive in better condition, and remain so longer than if packed in bulk as at present, also may be disposed of to the individual consumer without any handling and consequent deterioration [see our issue for August 4, last, p. 135, for figure of a fruit transit box. Ed.]. The inexpensive character of the package is its valuable feature, and that is 6d. per dozen for the boxes and 5d. for the crate to hold twenty boxes. Their lightness renders the cost of transport less than in the heavy baskets, which have to be sent backwards and forwards, while fruits selected and packed in this manner would be deliverable in the best possible condition and of the highest value. Thus the second material feature in the science of distribution would be complied with.

The third feature to which attention may be directed is the transport of fruit at the least possible cost. I do not propose to occupy time by referring to that great evil, the excessive railway rates, which the producers and consumers of the country have so long suffered from. The short-sighted policy

of the railway authorities is about to be brought under consideration, and our purpose will be best served by attention being directed to the particular points that fruit growers should endeavour to secure for themselves in the forthcoming revision of the charges and conditions of our railway system. In this matter, so far as fruit is concerned, facilities for its effective collection, safe transport, and speedy delivery, are of a much greater consideration than the actual charge made for the services rendered, but this should certainly be a figure within reason; but the principal object that the agricultural classes generally, as a body of producers, should seek to obtain, is a ready means for reaching consumers in all districts through the existing retail traders. For this purpose they should seek for the establishment of a "farm produce train," a service to be carried through on the lines of the "parliamentary train" and the "van train," which was in existence for a number of years, and only recently abandoned. By the parliamentary train the passenger rates for one train daily was fixed by law. The van train was for parcels, and the rates were made by the railway companies themselves, being one-half the ordinary parcels rates. With a minimum of 6d. at the present time, a parcel traffic is in existence on all railways by passenger trains, and this is governed by radius of distance; up to 30 miles being $\frac{3}{4}$ d. per pound; up to 50 miles $\frac{1}{2}$ d. per pound; up to 100 miles $\frac{3}{4}$ d. per pound, with a minimum rate of 6d. for a parcel. A moderate extension of this parcel system to wider radiuses on the basis of the van train charge—that is, one-half the current parcel rates—would prove advantageous to farmers, and bring the railway a large and remunerative traffic. This should be sought for, and would probably be conceded by the railway company without difficulty.

The outlet for fruits will be found in two directions which have a widely different character, and necessitate different treatment—the supply of London and the very few large towns in the north, and the supply to the small towns and villages throughout the kingdom. With the first we have the large concentration of fruiterers, greengrocers, and costermongers, who have hitherto furnished the means for reaching the public. With the second they have to a great extent done without fruit, as it could not be supplied in a fresh condition. Whether the fruits are intended for London or the country districts, railway companies should be compelled to provide effective refrigerator trucks for their conveyance, in order that its fresh condition may be fully maintained. Growers know the condition that fruits leave them, but they are not aware of the serious deterioration that takes place in transit before reaching their destination, and the consequent enormous depreciation that takes place in values. A few hours makes a great difference in the appearance and flavour of fruits, and there can be no possible justification for the unnecessary loss thus made to the detriment of the grower, when the fruits could be readily and inexpensively retained in a fine and fresh condition.

In America the fruit farmers of California and Florida, the extreme western and southern States, send their fruits 2000 and 3000 miles across the vast continent to the markets of New York, Baltimore, Boston, Chicago, &c., where they arrive in fine condition, after several days' travel, and invariably bring good results to the grower; while in this country a fruit grower cannot send his produce a few miles with any certainty of its reaching its destination in a presentable condition, and if he wishes to send any distance other than where an ordinary fruit train runs, there is almost a certainty that it will be useless when it arrives at its destination. This deterioration and its consequent loss is more than a personal loss of the particular sender—it is a diminution of the food supply of the people, and in that light it is a national loss, needlessly incurred, by reason of the negligence and want of care on the part of those who have acquired the right to transport the internal food supplies of the country—a loss which is readily preventable by the use of proper trucks, which the railway

companies should be compelled to provide themselves, or allow others to provide for them. The companies should also be called upon to accept a truck rate for agricultural produce irrespective of contents. This would enable fruit and other farmers to load trucks in proximity to their farms or on railway sidings with their own labour, and while saving charges send their produce direct to the market. The provision of a regular and effective daily service for the conveyance of parcels of food produce in refrigerator cars, at a reasonable advance on the ordinary goods rates, would materially facilitate the communication between producers and consumers, and lead to marked advantages to fruit growers. To simplify matters, the rates by this produce train might be fixed within given areas. Thus all within a radius of one hundred miles one rate, and each additional hundred miles an additional rate. This would bring most of the agricultural districts within reach of populous towns, and thus furnish them with an outlet for their produce. That this system would be advantageous to fruit-growers may be readily seen, for grocers, dealers, or even consumers in any small town might order any number of the packages of fruit from one upwards, which, packed on the orchard and transmitted by the refrigerator cars, would reach their destination direct, at a small cost and in good condition. The essence of the fruit trade is a multiplication of individual transactions small in extent but numerous in character. It is in the simplification of the distribution of these growers will be in a position to place their produce within reach of consumers at the least possible cost, and thus acquire a further insight into the science of fruit distribution.

In conclusion, I submit—

1. That the simplest and most profitable way to sell fruits is in their natural condition properly classed and packed.

2. That an ample demand can be ensured for an unlimited quantity from numerous districts in all parts of the kingdom.

3. That these can be best approached and dealt with by local combinations of growers either direct or through a central agency.

4. That whatever prices are determined upon should be publicly known and fixed to give retailers a profit.

5. That the railway companies should be moved to furnish a daily farmer's produce parcel and bulk train service for the carriage of food products in refrigerator trucks between the agricultural and industrial districts at reasonable package and truck rates.

With the supply of these facilities a demand would be created for their utilisation, and thus bring about an improved condition of all things in which the interests of our agricultural and industrial classes are entwined.

NEW OR NOTEWORTHY PLANTS.

PHALÆNOPSIS BUYSSONIANA, n. sp.*

A STately plant, very much like *P. Regnieriana*, but with far brighter colours. The leaf and inflorescence are not distinct. Both the sepals and the petals are of a bright purple hue; the lateral sepals are bordered inside with white. The petals are much broader than those of *Phalænopsis Regnieriana*, and appear always to be hooded over the column. The lip is very distinct. The processes on the stalk of the lip are median, filiform-linear, not triangular, as in *Phalænopsis Regnieriana*. The three spreading laciniae of the anterior part of the lip are equal, lanceolate-oblong, blunt-acute. There is an emarginate small callus at the beginning of the stalk, and in front of it stands on

* *Phalænopsis Buyssoniana*, n. sp.—Simillima affinis *Phalænopsis Regnieriana* mento paulo argution; sepalis tepalisque latoribus, labelli auriculis unguicularibus linearifiliformibus, callo in apice unguis lobato parvo, linea lineari incrassata bisulca anteposta lacinias oblongolanceas obtuse acuti, lateralibus divaricatis, omnibus aequalibus; columnae basi angulata. Ab exco. A. [Regnier introducta] cl nobili Comiti Du Buysson deata. H. G. Rehb. f.

the disc between side lacinia a thickened line with two furrows. The three lacinia are of a vivid scarlet colour inside, side lacinia outside ochre-coloured, with numerous scarlet lines.

The stalk and keels are white, with some tinges of purple. Column ochre outside, angular at the base on both sides. M. A. Regnier, 44, Avenue de Marigny, Fontenay-sous-Bois, Seine, has sent me not only some specimens, but has written with his usual courtesy to say, "Vous donnez, le nom qui vous sera plaisir." It gives me great pleasure, therefore, to acknowledge the assistance given to orchidists by M. le Comte François Du Buysson, the author of the useful *Orchidophile*, &c. To help others is the privilege of those who have "le feu sacré." H. G. Rehb. f.

SOBRALIA MACRANTHA (Lindl.) KIENASTIANA, n. var.

As long since as 1885 my excellent correspondent, Herr Consul Kienast Zölly, Hirslanden, Zurich, sent me a dried flower of a *Sobralia macrantha*. His Indian collector described the bloom as "very large and very white." It is large, but as to the colour, it has that hue white flowers usually have when dried. I put it in my herbarium, the grave of so many unsolved orchidic riddles, to wait until more materials came to hand. And this month a fresh white flower arrived with a small narrow sulphur-coloured mark on the lip under the column not much larger than the circumference of the column. It is a well-known fact that we are very unfortunate when we attempt to copy the green colours of leaves, &c., and it is nearly impossible to get shades of white. Not many persons have eyes to perceive the gradations to which white is subject, and also these shades do not appear to exist in the materials which we use when trying to represent the numerous variations of white. The white colour of this *Sobralia macrantha* Kienastiana is quite *hors de ligne*, of the most exquisite purity, surpassing all shades of white I have seen in plants. (I knew an English artist who when making water-colour drawings of Orchids represented all white flowers of a light blue tint—*grand bien vous fasse*.)

I learn that the plant (*Sobralia*) is still small, not more than 20 inches in height. I was much pleased with the flower, and have great pleasure in dedicating it to one of the most intelligent and zealous of orchidists. May Consul Kienast Zölly enjoy a long life. It will be a benefit for orchidology. H. G. Rehb. f.

NARCISSUS SCABERULUS.*

In a footnote is given a translation of Professor Henriques' description of a new Portuguese *Narcissus* closely allied to *N. rupicola*, and of which specimens are in cultivation in Dublin and elsewhere. A. W. T., Oporto.

ZYGOPETALUM MURRAYANUM, Gardn., hybrid.

This is a very curious species of *Zygopetalum*, and one but rarely seen in gardens. Until the other day I do not think I had seen the plant alive; when a portion of an inflorescence was forwarded to me by Mr. B. S. Williams, it having been sent by one of his correspondents for a name. The plant has the general habit of other members of the genus,

* *Narcissus scaberulus*. Henriques, n. sp.—Bulb small, 15 mm., ovoid tunicate, outer coats brown, inner ones white; leaves 2, linear, more or less prostrate, longer than the scape, slightly furrowed on the upper surface, 2-angled beneath, glaucous, rough at the margins and dorsal angles, provided at the base with a membranous involute sheath; scape, 6–10 cm. long, 1–2 mm. in diameter, striate, nearly cylindrical, bent, 1–2-flowered; spathe membranous, narrow, striate, slightly longer than the peduncle and ovary; flowers 12–15 mm. across, stalked (stalk, 8–12 mm.), bent, yellow, tube 12–17 mm., greenish; perianth-segments ovate, imbricate, 3 inner ones broadest apiculate, slightly fringed at the tips, spreading ultimately slightly reflexed; corona 5–7 mm. across, cup-shaped, almost the same size as the segments, more or less crenate at the margins; filaments very short, 1 mm., three emerging from the centre of the tube, three from the mouth; style filiform, stigma 3-lobed. At Oliveira do Conde; flowers in March and April. Allied to *N. rupicola*, from which it differs in the prostrate rough leaves, the bent flowers, the sub-cylindric corona, and the three exert stamens.

bearing an erect raceme of several flowers; but these have a highly singular appearance, owing to the total absence of markings on the sepals and petals. These organs are of a uniform bright green, while the lip is white, with a few reddish-purple markings near the base. The front lobe is somewhat elongated and rather narrow, the side lobes are smaller and rounded, while the fleshy callus is quite characteristic of the genus. The column is greenish-white, with a few streaks of red in front. The reappearance of the plant in gardens is interesting, for it originally appeared as early as 1839, being figured at t. 3674 of the *Botanical Magazine* from a plant which flowered in the Glasgow Botanic Garden. This plant was sent home by Gardner from the Organ Mountains, in Brazil, where it was found growing at 4000 feet elevation. The present plant is probably from the same region, and is of a deeper green than the one represented in the above-named plate. R. A. R.

HARDY ANNUALS AS EXHIBITION PLANTS.

WHEN attending a flower show in the West of England a few days ago I was pleased to note some very attractive stands of bunches of annuals shown in a class in which special prizes were offered for them. The flowers were arranged in neat and yet attractive bunches, and they were nicely set up in a stand, each type being seen to the best advantage. Not only was the floral effect good, but the exhibition served the purpose of presenting to view some very pretty things in the way of annuals that are not seen so much in gardens as they deserve to be. I noticed that visitors to the show gathered about the stands, and appeared to greatly admire the flowers, and I think many of them were looking upon subjects they had perhaps never seen before, or on rare occasions only. Annuals are rarely seen at flower shows unless it be some that are known as half-hardy or tender annuals, such as Balsams, Cockscombs, Zinnias, &c.

Two things should be stated at the outset. The schedule of prizes containing the classes above referred to stated "Bunches of Hardy Annuals." Zinnias, Stocks, Asters, and a few other things that it has been customary to raise the seeds of on a slight hotbed were shown, and were admitted, because we have abundant evidence that in many parts of the country seeds of these can be and are sown in the open ground, and they germinate abundantly; and they flower very finely where they were sown. I think, therefore, that all annuals that can be treated in this way should be considered hardy.

Another point is, that exhibitors are very apt to spoil the effect of their stands by placing several varieties of one genus, or species, in a bunch. The schedule reads, "Twenty-four bunches of hardy annuals, distinct varieties." I dare say what was in the mind of the framer of the class was, that each bunch should consist of one variety of flower only. But country exhibitions are very apt to, and indeed often do, confound species and variety, and place several varieties of Sweet Peas together in a bunch, in the full belief that they are exhibiting in harmony with the requirements of the schedule. This is a frequent practice at country exhibitions, and it seems hard to disqualify under the circumstances. It would perhaps be better if the schedule of prizes stated, "one variety only in a bunch." A stand composed wholly of bunches of one variety, if the variety be good, is certainly much more effective than one which has several varieties placed in a bunch.

Being sincerely desirous that the culture of some of the more showy and useful class of annuals should be encouraged for this and other purposes, I venture to give a list of those best adapted for the purpose; at the same time they are well adapted for general garden decoration. They are Asters of the quilled, *Victoria* Pæony-flowered, and bouquet types, including that fine introduction of the *Victoria* section, *Comet*, which is as dis-

tinct as it is fine; *Bartonia aurea*, yellow, a fine and showy early flowering hardy annual; *Calliopis* or *Coreopsis coronata*, tinctoria, grandiflora, and nigra speciosa; Candytufts, new Carmine—the giant white variety, Empress, and Dunnett's Crimson; *Chrysanthemum coronarium*, double and single; *C. tricolor*, and such fine varieties as Burridgeanum, W. E. Gladstone, and Lord Beaconsfield; *Clarkia pulchella integripetala* and its varieties limbata and Mrs. Langtry; *Collinsia bicolor* and violacea, *Convolvulus major*, and the rich dark blue *C. minor*; *Dianthus chinensis*, its fine variety Hedewigii, also Brilliant and Eastern Queen; *Eschscholtzia californica alba*, crocea, and Mandarin; *Godetia The Bride and Whitney*; the crimson and purple double Jacobaeas, the blue branching and dwarf Rocket, Larkspurs, *Lupinus nanus* and sub-carnosus, *Malope grandiflora* and its variety rosea, dwarf striped French Marigold, the Crimson Giant Golden Queen, and Parson's Giant White Mignonne, which should be well grown in order to have fine spikes; *Nasturtiums*, climbing and dwarf, but the finer varieties only should be grown; *Nemophila insignis grandiflora* and maculata, *Nigella damascena* and hispanica—the former especially makes a charming bunch; the annual Poppies, such as the Danebrog among the singles, and The Mikado type among the doubles; Sweet Peas in variety, the beautiful blue *Phacelia campanularia*, unrivalled among annuals for its rich blue; *Phlox Drummondii*, the finest varieties, and especially the rich crimson splendens grandiflora; some of the most showy of these make charming bunches; *Salpiglossis*, with their rich orange, amber, purple, and other hues; *Schizanthus pinnatus*, Stocks in variety, and especially such distinct colours as crimson, purple, rose, chamois, violet, white, &c.; *Viscaria cardinalis* and oculata corulea, *Whitlavia gloxinoides*, and the fine double forms of *Zinnia elegans*.

Should this list be considered too long, let me say that if twenty-four bunches be required in distinct varieties, it is necessary to grow a good selection; all that I have named are good and distinct, and what the grower should aim at is to have a batch of varieties in flower and at their best just when they are required.

But it must not be supposed that good flowers of common annuals are to be had in any soil. I think very little cultivation is given to many annuals. If they are to be fine they must be cultivated, and to do this properly they should be grown in a nursery bed. The soil should be deeply dug and manured in autumn, and then thrown up rough for the winter. In February the surface should be levelled, gently forked over, and thoroughly well pulverised, and the seeds sown as early as possible as opportunity offers. When the plants are growing into size let there be a courageous thinning out, giving each plant ample room in which to develop. Displays of annuals are too often spoiled by the plants being allowed to grow much too thickly, and they starve and smother each other. The aim of the cultivator is to have the largest and best developed flowers possible, and in doing this he will be making it possible for him to excel on the exhibition table. R. D.

THE WEATHER.

THE weather of the past three months of June, July, and August, has shown a striking contrast with that of the corresponding period last year; in fact, a more marked difference it is scarcely possible to conceive.

According to Sir J. B. Lawes' meteorological records at Rothamsted, the three months of June, July, and August—which may be termed the months of English hay and grain harvest—last year gave us but 2½ inches of rain, while the same three months this season have given us over 12 inches, or a quantity which is equal to the enormous amount of 1223 tons of water to each acre of land; this is 469 tons in excess of the average of thirty-five years, over which the Rothamsted records have extended

and 1066 tons per acre more than we received in the corresponding period last year.

This large rainfall is, however, not without precedent in the neighbourhood of Rothamsted, for in the three months of June, July, and August, 1860, over 12½ inches of rain was recorded, and in 1879 nearly 16½ inches were measured.

The characteristic of the present season is that not one week of continuous fine weather has been experienced during the whole of the three months to which we have referred. With the high rainfall has been registered an exceedingly low temperature, an average of 57°·3 only being obtained for these three harvest months. This shows a deficit from the computed average of 2°·9, and is in great part due to the comparative lack of bright sunshine experienced during the present summer.

Although there was an increase of warmth during August from the two preceding months, yet it was of dubious advantage when accompanied by a damp, close, and unhealthy atmosphere, extremely suitable to fungoid growth on the crops. We do not remember ever to have seen such an enormous quantity of frogs and toads crawling about the fields as in the present season.

The inclement weather for ingathering has had the result that a very large proportion of the hay crops of an inferior quality, much being so damaged as to be almost worthless; though the promise of an abundant aftermath may make some amends, if only suitable weather could be obtained for its successful curing. Peas and Beans have run more to haulm than to pod, and the growth of root-crops, both in the garden and in the field, has been out of proportion to the development of the bulbs, which require the moisture to be tempered with bright sunshine for successful growth.

Potatoes have suffered in this neighbourhood greatly from the superabundance of moisture, blight, and disease, being extremely prevalent. In some cases, at lifting the crop two-thirds of the tubers have been found useless. All outdoor fruit is very insipid and watery, but especially is this the case with Plums.

Although bad seasons in our own country do not now imply famine or starvation, as formerly—as any deficiency at home can be so expeditiously supplied, and at such a comparatively trifling cost of transit from the most remote quarters of the globe—yet we fear many will feel the pinch of poverty in the coming winter. *J. Willis.*

THE APIARY.

ROBBING.

THIS will now be the order of the day, if great care be not taken to prevent it. It is mostly allowed that prevention is better than cure in any case, and it certainly is so here, for if once robbing is established it is difficult to stop it. After such a season as we have had, no stock can possibly be overloaded with honey, and most stocks are deficient. The first instinct of the bee is to provide for their young for the perpetuation of the race, and to secure this end they will get honey from any source, by fair means or foul. It must, however, be confessed that hunger is not always the cause of robbing, for sometimes the strongest and best provided for rob the most—indeed, there are those who pronounce the bee to be a humbug. But to the point. Don't meddle with bees now in the middle of the day, but what you must do, do it towards sunset. Be careful not to spill honey or syrup about the apiary, for that would doubtless lead to robbing at once. Where feeding is being carried on, take care that the bottles of syrup are well covered up, and that no bees can get to the food except those for which it is intended. Fill the bottles in the evening, and the food will be taken down in the night. If after all these precautions robbing is commenced, contract the entrances at once, so that only one bee can pass out at a time, and the guards inside will then be able to do their duty. In bad cases it has been sug-

gested that the hives of the robbers and the robbed should change places for a little while. The effect is singularly unique for the would be robbers are then stealing (?) from their own hive, and giving it to their weaker neighbours, for amongst bees the weakest ever go to the wall. There are other ways of preventing robbing, but the above are the principal methods adopted, and these and other things are they not written in the chronicles of the bee-keepers?

A nice little book comes to us from the pen of Mr. J. M. Hooker. It is not very large, but it is full of sound instruction gathered from experience, and written so that he who runs may read. The appliances and the dealers he mentions are at the top of the tree, and the book is thoroughly sound and useful. Though our evils are many this season, wasps have not as yet appeared here. This is not a circumstance to be regretted. *E. C.*



FIG. 38.—RHODODENDRON COLLETTIANUM: HARDY SHRUB, FLOWERS WHITE.

NOTICES OF BOOKS.

THE TREES OF COMMERCE. By W. Stevenson.

NO. 2 of Messrs. William Rider & Son's *Timber Trade Handbooks*, may serve fairly well the purpose for which it is designed, that of "giving, within reasonable limits and in a popular form, an account of the trees that yield the staple of this trade." The scope of the work is limited, Mahogany, Teak, Greenheart, and fancy woods in general, being omitted, whilst a considerable space is devoted to the etymologies of names. The absence of an index, makes the contents appear more meagre than they really are, ten species of Oak, for instance, being included under "The Oak." The botanical portion of the work is professedly taken "almost exclusively" from Loudon's *Arboretum*, a work of compilation now out of date, and the preface acknowledges the author's indebtedness to Laslett's *Timber and Timber Trees*, in which the botany is lamentably incorrect; but, though the book is much smaller and makes but little pretence to completeness, it is rather difficult to see a distinct *raison d'être* for it, since the appearance of Mr. Laslett's work. The trade names are carefully given, and misprints, such as "C. Bankin" (p. 125) for C. Bauhin, are com-

mendably few. There are, however, some few statements to which exception may be taken, and some remarkable omissions. Bog Oak certainly shows the indigenous character of the tree; but there are certainly no fossil Oaks "in the limestone known as Portland stone" (p. 12)! The Dutch Elm (p. 35) is hardly a variety of *Ulmus campestris*, and it is to be regretted that the author has not distinguished between the characters of the timber of *U. campestris*, With.; and *U. suberosa*, Moench. The omission of all mention of the use of Elm wood for coffins is remarkable. Is any part of St. Leonard's Forest in Hampshire (p. 47), or does Fagus Dombeyi, really takes its name from "Dombey, near Concepcion" (p. 51)? The name "tulipwood" for the timber of *Liriodendron* may prove as misleading as the vague "whitewood" or the inexcusable "yellow Poplar," and it is noteworthy that the Sycamore is called "Plane" in Scotland, as well as in America (p. 118). The total omission of so useful a wood for ornamental carving as that of the Spanish Chestnut; the wholesale condemnation of British-grown Scots Fir as "not of much value" (p. 161), in spite of the splendid specimens exhibited at the Edinburgh Forestry Exhibition; and the absence of any reference to the future of home-grown *Abies Douglasii*, strike one as mistakes, for the second of which our northern foresters are perhaps to blame, since the carelessly grown pit-props put upon the market have too often led to needless foreign importation. The bad effect of the general headings to the sections of the book, and the absence of an index are seen again in the difficulty of collecting the notes upon the "White Cedar" (*Cupressus thyoides*, L.) of the Eastern United States (pp. 217, 220, 221, 224), the wood of which is now of considerable importance to our brewers. Finally, one would like to know the histological evidence for the following astonishing remark on *Fraxinus americana* (p. 32):—

"The wood is undoubtedly inferior to that of European growth, and if, as contended by Darwinian students, it is merely a variety of an original stock akin to that of European growth, the inferiority can only be traced to its acquiring in some degree the habits of an aquatic plant, by which the fibrous system has gradually declined in favour of increase of cellular tissue until the change has become radical."

RHODODENDRON COLLETTIANUM.

THIS (fig. 38) is a small-growing hardy shrub, in habit resembling *R. ferrugineum* and *hirsutum*. It was first described by Aitchison and Hemsley, having been collected by the former botanist in the Kuram Valley, Afghanistan, at heights of 10,000 to 13,000 feet. The plant in question flowered on the rockery at Kew during the last season. The leaves are coriaceous, oblong-lanceolate; the flowers are in clusters, white, rather less than 1 inch long; the tube of the corolla hairy inside. It is an interesting addition to the group of dwarf hardy *Rhododendrons*.

TREES AND SHRUBS.

THE WHITE BEAM TREE (PYRUS ARIA).

THIS extremely hardy tree is valuable for planting in many situations where others would fail. In hilly, wind-swept places it seems especially at home, for, however, exposed it may be, it retains its erect position, and the symmetry of its head. I have a specimen, now about 15 feet high, growing on the top of a bank, with a full exposure to the north and north-east. Several other trees which have been planted on the same site have gradually died out, but this continues to make progress—growing at the rate of about 18 inches a year—and is in a thoroughly healthy condition. Being deciduous, it of course forms but

* *Rhododendron Collettianum*, Aitchison and Hemsley, in *Journal of the Linnean Society*, vol. xviii., 1881, p. 75; and vol. xix., t. 20.

an imperfect screen, or wind break, during the winter: but even at this time it is an interesting object, owing to the conspicuousness of its large green buds. From its leafing time until late in the autumn it never loses its effectiveness, as, irrespective of its flowers in the spring, and its fruit, which is now swelling out, the character of its foliage gives it a claim to a front rank amongst summer leafing trees. Where the darker shades of green so largely preponderate, as in the ordinary English landscape, a break of foliage of a lighter hue is always acceptable. If for no other reason than this, an occasional group of the White Beam is very useful. Even in perfectly still weather, when the face of its leaves is alone seen, the difference in colour is enough to at once attract attention, but when the tree is stirred by a slight rush of air, the appearance presented by the underside of its leaves, is in complete contrast to its ordinary surroundings. This mealy whiteness, it is true, is also possessed by the white Poplar and other trees of the genus, but is much more marked in the case of the White Beam, no doubt on account of the larger size of its leaves. There is another point, too, with regard to this tree which is worthy of note, viz., that it is only moderately dense in habit, and roots deeply, thus allowing grass and other things to grow beneath it. Many kinds of trees interfere seriously with hedges; indeed, so far in some cases as to kill them outright. This evil is much less in the case of the White Beam than with many species. It is, therefore, a suitable tree for planting near live fences, a thing which often has to be done, especially in the case of the narrow belts by roadsides and similar positions. Another recommendation for certain classes of planting is the fact that it only attains a moderate height. As a young tree it grows with a fair amount of rapidity, but after reaching the height of 18 or 20 feet makes very little further growth with respect to height, although it remains robust for a large number of years. Where used near the dwelling-house this is a valuable quality, and one too often lost sight of when planting in immediate proximity to the house is carried out. As its habit is naturally symmetrical, it is, as a rule, desirable to allow it to assume its own form, but when necessary it may be cut without hesitation, as it bears lopping well. Being so little grown, at any rate in the part of the country from which I write, its wood has not any recognised commercial value, but is hard and fine grained. *D. J. Y.*

FREMONTIA CALIFORNICA.

Near London we generally see this fine shrub trained to a wall, and it is not in all seasons that we are favoured with a sight of its golden blooms. At Colwyn Bay, North Wales, however, as we see from photograph obligingly communicated by Mr. A. O. Walker, it forms a spreading bush some 7 feet high, and as much or more through, and covered with bloom.

MAGNOLIA HYPOLEUCA.

This new Japanese species is figured in the number of the *Garden and Forest* for August 22. It is like *M. macrophylla*, and has creamy-white flowers, exhaling a delicious perfume. The tree is a native of the mountains of Southern Yesso, and its timber is used by the Japanese in the manufacture of objects to be lacquered. It was introduced to the United States in 1863 by Mr. Thomas Hogg, and has proved hardy.

THE WALNUT.

A short time ago I saw a couple of trees of the common Walnut sold for £30. There was a quantity of fine old Oak sold at the same time, but foot for foot this could have scarcely realised more than half the price. The sudden popularity of its foreign rivals has, no doubt, put our English grown Walnut into the shade, yet even now when compared with the figures obtainable for other common timbers, the position of the Walnut is not nearly so bad as would appear on the first blush. It is a tree of course which it would be doubtful policy to plant in large quantities, but a dozen or two upon a place would mean but little outlay, and they may be established in odd

nooks and corners, which would be of but small value for anything else. [Why not by the acre? The nuts fetch good prices, as well as the timber. *Ed.*] The instances I have quoted above may perhaps be a little out of the ordinary way, as there was considerable competition, but allowing for this, I very much doubt if there are any common woods, with perhaps the exception of the Ash and Sycamore, which would fetch better figures. A further recommendation of the Walnut is the fact that not unfrequently quite a small revenue is gained from its fruit. It was only the other day a very moderate-sized tree was pointed out to me, the fruit of which, sold as it grew last year, realised half-a-sovereign. This of itself is not a great sum, but when it is remembered that it represents the rent of an acre of land upon which the tree grew, it will be seen that it is no bad return. This was in the corner of a pasture field, and the occupier values the tree for its shade alone, and being within view of the house it is also an ornament. The two last named qualities many other trees would, of course, possess, but not a like value of its wood and fruit. *D. J. Y.*

FORESTRY.

GROWTH OF CONIFERS AFTER BEING FELLED.—It occasionally happens, particularly on peaty soils, that stumps of the Larch and Silver Fir continue to produce annual layers of woody matter for several years after the trees have been felled; but it is not so well known that the Douglas Fir (*Pseudo-Tsuga Douglasii*) is likewise capable of producing a similar growth. This I detected some time ago in a strip of mixed trees growing on loam incumbent on gravel, and where at least two of the stumps of the Douglas Fir, felled ten years before, had continued to produce annual layers of wood, the ten layers being distinctly visible with a low power of the microscope. What puzzles me most in this particular instance is how the roots retain their vitality in a sandy soil; had it been peat the wonder would have been less, as the antiseptic properties of that soil exert a peculiar influence in keeping the roots fresh and sound for a long time, and consequently encouraging the formation of such growths. Some persons attribute this peculiar formation of woody matter to the fact that trees which produce such had, previous to being felled, their roots engrafted on those of a neighbour, and consequently the production of annual layers of wood was hardly to be wondered at. Such an example I had, fortunately—for regarding this fact, I must own that I was somewhat sceptical—the chance of examining at the late Forestry Exhibition in Edinburgh; for there several exhibits, consisting of the roots of similar species of trees joined together or engrafted on each other, were to be seen.

But how about isolated trees? For Larches, Silver Firs, and Douglas Spruces that have come under my own notice, and which produced this abnormal growth, were growing at too great distances apart from other trees to suppose that their roots could have been joined or engrafted on these. That several trees have the power of forming an annual layer of woody matter in the manner just described is now beyond a doubt, and that even although the roots from the stump of the felled tree have no connection, whether by inarching or otherwise, with those of neighbouring living specimens. Some years ago I had occasion to have several Larches and other trees cut down just at the time when the sap was most abundant and in freest circulation; and five at least of these, after being lotted outside the woodland boundary, continued to form woody matter around the margin of the stem at the point where it had been severed from the stump, and went on doing so until the sap in the trunk was fully exhausted.

By way of experiment a friend and myself, in a plantation where a number of the Larch roots continued in a vigorous state after being deprived of

their tops, cut over several of the most likely trees, those growing in peaty soil principally at 6 inches from ground level. They were carefully felled with a sharp cross-cut saw, the saw-mark being seen as nearly horizontal with the ground level as possible, and every art used so as to prevent the bark being loosened around the collar of the stumps. Sections of nine of the trunks, 3 inches thick, were taken from the base of the butts, or immediately above the saw-cut, and each labelled similarly to that from which it was cut over in the ground. The butts in the ground were carefully guarded and marked; a label, clearly stating when the trunk had been felled, and a conspicuous figure corresponding with that on the section legibly printed on the corner of each. Out of the nine trees felled three continued to produce annual layers of wood, much to our joy and satisfaction, whilst one other was but half decided, growing partially from one of the sides, but it was of little use for the experiment in hand. Seven years after the trees were felled sections of the tree stumps which had continued to grow were carefully cut off, and on comparing these with their duplicates it was found that they had produced extra layers of woody deposit corresponding with the number of years since the trunk had been cut from the roots. The growth produced grows both upwards and inwards, the heart of the old stump gradually dying away as the young wood fills over and takes its place.

I have one example of a Larch root in which the new wood has attained to a height of fully 3½ inches from the level of the old stem, but when the original tree was cut I am unfortunately unable to say, but in judging from the deposits, some of which are hardly visible with the naked eye and required the aid of a lens to decipher, I should say twenty-three years. I have counted fully thirty of these annual growths in a Larch stump, and in one instance the new wood had almost completely enveloped or covered over the surface of the old stem.

The irregularity of growth of the wood, as also great differences in size of the annual deposits, is a matter that I have found to be most difficult to account for, at least in anything like a satisfactory way.

Some times the deposit of fresh wood on one side of the stem is nearly double of that on the opposite; while again the woody matter rests high on one side, and rather inclines inwards towards the centre of the stump on the other. The wood produced in this peculiar way is hardly distinguishable from that formed naturally, and after a testing examination has been found to contain all the constituents of ordinary timber of the same kind.

Trees of very vigorous growth, growing in peaty soil, reclaimed peat log principally, and from sixteen to thirty years old, are most likely to produce the growth just referred to. Older trees rarely do so, but occasionally in sandy loam, as well as peat, this peculiar growth is detected.

Grigor, in his *Arboriculture*, says, that none of the Coniferae spring from the roots when felled, but that stumps of the Silver Fir have been known, after the removal of the tree, to produce annual circles of woody matter, &c. Now in this—that none of the Coniferae spring from the roots when felled—Grigor is in error, for *Sequoia sempervirens* and *Cunninghamia sinensis* behave in this rather erratic manner, examples of which have come under my own notice, and I rather think that two others, belonging to quite distinct genera, may be linked with the *Sequoia* and *Cunninghamia*.

Propagation of the *Sequoia* is frequently effected by removing these shoots with a small portion of the stem, and planting in sandy soil, while we have frequently resorted to layering similar saplings of this tree as a means of increasing our stock. There is a curious example of this on Sir William Verner's estate in the North of Ireland, where the shoots sent out by a large Redwood, after being cut over at ground level, were layered around the stem, and the appearance now presented is as interesting as it is unusual. The soil was peaty, with a great quantity of decayed and decaying vegetable matter atop, and the stem of the tree cut over was about 3 feet in diameter.

In connection with the roots of coniferous trees becoming joined together or engrafted on each other, this may be a common enough occurrence; but what I would like to ask is, if any of your correspondents have known of an instance in which the roots of a coniferous tree had engrafted itself on that of of a hardwood? *A. D. Webster, Holwood Park, Kent.*

PLANTS AND THEIR CULTURE.

SCUTELLARIAS.—The best species for the gardener to grow is *Mocciniana*, a neat free-flowering plant, and an inmate of the intermediate house. It has compact heads of brilliant scarlet flowers, produced mostly at the seeds of the shoots. The inside of the lip of the corolla is deeply marked with yellow. The plant has an erect habit, and although very accommodating when grown and trained as a small shrub, yet it is perhaps of most service when grown as smaller plants in 5 or 6-inch pots.

Young plants should be raised periodically for this purpose, the young plants producing the finest heads of flower; moreover, by this method flowers may be obtained nearly all the year round. For flowering in winter and spring, cuttings should be put in now. There is usually no difficulty in getting them, especially, as in late summer they are freely produced on plants which have recently flowered. Select cuttings, which should be strong ones, and either dibble them into a mild propagating frame, or thickly into small pots, and plunge the latter in the frame, attention being afforded to shading, watering, &c. The cuttings should be rooted in about a fortnight, when they should be immediately potted off into rich, loamy soil which has plenty of sharp sand in it. As soon as they have taken to the new soil pinch the shoots back, and again after a few inches of fresh growth has been made; this will usually give from four to six leads, which will be sufficient for a plant in a 5-inch pot or small 32. At the last potting the compost should be very rich, and the plants potted firmly.

If larger specimens or speedier flowering are desired, then place several cuttings in a small pot at first, and simply pot on without pinching. In this way nicely-flowered pots may be had in a few weeks. In all stages of their growth keep them close up to the glass, and syringe freely until the flowers begin to show colour. The plants will last in flower for a considerable time if placed in a cool house.

S. cordifolia is a fine species with scarlet flowers; it succeeds under the like treatment, but it is not so amenable to times of flowering, and does best when allowed to flower naturally during the autumn months.

Roses in Pots.—The present is a good time to examine and repot when necessary, top-dress, or make good the defective drainage. Any little check which the plants may experience from any of these operations is much sooner got over than is the case when they are in a dormant state; moreover, Tea Roses, many of which, when grown in pots, are almost evergreen—if they receive fresh soil at this season in a short time many of them would be seen to be swelling their buds, which by the time that they are housed in the autumn, or in the case of plants now standing under glass will commence flowering without any forcing whatever. Plants coming into flower under these conditions have a great advantage over those brought on by means of heat, and lasting longer in flower. Roses of all sections are much better for being well established in their pots before being brought into a forcing house. Where the pots in which the Roses are growing are large enough, and the soil is in good condition, it is quite unnecessary to repot, but rather apply liquid manure during the season of growth. A good compost for use in potting is good loam of medium consistency, bone-dust, about a peck to 4 bushels of soil, and as much sharp sand as will keep the whole mass sweet and porous. If the loam be heavy it will be an advantage to add an eighth of leaf-mould or thoroughly decayed cow-manure. The Roses should either be accommodated under glass or in a sheltered position outside open to the sun. They should be freely syringed, and no effort spared to keep the foliage in a healthy condition, as if it should drop prematurely the buds would not get sufficiently mature to be able to produce flowers of the first quality when forced.

Mignonette.—No delay should occur before sowing the seeds to produce plants for the main winter and spring-flowering, for if it be deferred till a later period the plants have not so good a chance of getting established before the winter sets in, and are consequently more difficult to manage, especially if it be intended to keep them in cold frames, which, in the absence of better accommodation, is a good place to winter them, and better than mixing them with a miscellaneous collection of plants. With due attention to covering in cold weather, judicious giring, the frames having a rather sharp pitch, and

placed in a sheltered, sunny position, excellent results may be had. Sow the seeds rather thinly in well-drained 48 or 32-sized pots, filled to within about three-quarters of an inch of the rim with a compost of about three-parts loam and one part of well-decayed manure, sand, and leaf-soil, varying these in quantity according to the quality of the loam. Add a good sprinkling of gritty old lime mortar and soot to the heap; mix well, and fill the pots evenly and firmly, covering the seed lightly with some of the finer portion of the soil; plunge the pots in the frames, when, with attention to damping, and shading from bright sun, the seedlings will soon appear; they should be thinned out as soon afterwards as possible, leaving a few more plants than it is ultimately desired to retain, as these can be removed before crowding takes place, and if half-a-dozen good plants are eventually left these will fill the pots. As to the variety to be grown, individual taste differs, but the large-flowered white, red, and yellow varieties are all sufficiently distinct, and some of each should be grown.

Bulbs for Forcing.—The remainder of these should now be potted forthwith, and treated as recommended at p. 191. In addition to those mentioned there—*Hyacinths*, *Crocus*, and *Tulips* of all sorts, as well as *snowdrops*, *Scilla bifolia*, the scarlet *Windflower* (*Anemone fulgens*), *Iris*es of the early flowered kinds, such as *persica*, *reticulata*, and *stylota*, not forgetting plenty of white *Lilies*, both *candidum*, and *Harrisii*, for both of which 9 or 10-inch pots are convenient sizes, and give excellent results. *F. Ross*, *Blotchingley*.

THE FLOWER GARDEN.

BEDDING PLANTS.—Look over cuttings of bedding plants that were put in last month. Zonal *Pelargoniums* in pots and boxes standing in the open air require more than ordinary attention this season owing to their sappy growth. Replace with fresh ones all cuttings which have been lost. It will also be advisable to move the cuttings in pots and boxes to cold frames forthwith, giving due attention in regard to ventilation, and on bright days take the lights off entirely. Other cuttings, such as *Verbenas*, *Iresines*, *Coleus*, *Mesembryanthemums*, *Lobelias*, *Ageratums*, *Tropaeolums*, &c., must also receive timely attention. The majority of these, if put in and treated as previously advised, should now be well rooted, and should be afforded plenty of ventilation, the object to aim at being sturdy plants that will pass safely through the winter months. In a fortnight hence each and all of these subjects ought to be placed in the glasshouses, and from that time onwards must be carefully attended to as regards watering and ventilation. Old plants for stock purposes may be lifted and potted up in a compost of fibrous loam, leaf-mould, and sand. Use clean pots and ample drainage, place them in a heated pit or frame, shade and syringe overhead when necessary till the roots have taken hold of the fresh soil, and, with the exception of *Alternantheras*, cut the plants down to within a reasonable distance of the pots at the time of potting.

Hardy Biennials.—The majority of those that were raised from early-sown seed and pricked out afterwards may now be transplanted to where they are to flower; these should include *Antirrhinums*, *Sweet Williams*, *Brompton Stocks*, and *Campanula calycanthema* and its varieties. If the soil be fairly good, avoid putting any decayed manure into it, as this would tend to excite the plants into growth, and which, in the event of very severe weather, would probably be killed. In stiff clay land it will be found a good plan to add a little leaf-mould, burnt soil, or a few finely sifted cinder ashes to the staple. Where space can be afforded I would advise the growing of a good bed of *C. calycanthema*, for lifting and potting up just as they are coming into flower, when these will be found very useful for indoor decoration, and after being once grown they are sure to be inquired for again. When grown in beds or borders by themselves they should be given at the time of planting a distance of fully 18 inches or 2 feet each way. Wallflowers may also be transplanted where space can be afforded, or when beds in which they are to flower become vacant. In my case these plants are put into beds that have been occupied with summer-flowering subjects, and it rarely happens that I can do this work before the middle of October, *J. Horsfield*, *Haytesbury*.

FRUITS UNDER GLASS.

VINES.—Late Grapes must now be pushed forward to have them thoroughly ripe by the end of September, else they will not keep well during the winter. Pinch out all lateral growths, and allow all the light possible to play amongst the fruit. If necessary, give a good watering, and mulch the border with some dry horse droppings to prevent the escape of moisture. Maintain a night temperature of 75°, with a chink of air to keep the moisture from settling on the bunches. *Gros Colmar* usually requires a long season to mature its fruit if at all heavily cropped. The greatest failing of this noble Grape is the premature shrivelling of the foliage. Under the circumstances it is as well to allow a moderate lateral growth to develop. No grape I know will stand so much fire-heat as this without shrivelling, and the more it gets the better the flavour. The earthy taste which is ascribed to this variety of Grape is scarcely discernible when wrought on the *Hamburgh*; I find I cannot colour it on the *Barbarossa*, although it is very free and swells enormous berries; yet the flavour is little inferior to those of the *Hamburgh* stock. I consider it should never be grown on its own roots. I remember seeing some splendid samples growing in a Muscat house at *Drumlanrig*, where they were wrought on the Muscat if I mistake not.

Young Vines will require abundance of fire-heat and air in order to properly mature the wood of this season. In all my experience I never remember a more sunless year than the present. Notwithstanding, Grapes have coloured well, and the berries are larger than the past dry years. Remove all lateral growths, and allow a free play of warm air and light to the wood. Now is a good time to attend to the lifting of Vine borders where the Grapes have been cut. If the borders are in a bad state the soil should be wholly removed, and the drainage attended to, and new soil substituted, the roots trimmed, and laid about 12 to 15 inches from the surface. Some sharp soil, largely composed of charred compost, sprinkled over them, and the remaining portion of the border made up. Pot Vines should now have perfected their growth and shed their foliage. These should be pruned as soon as they are fit, and stood in an airy position until the appearance of frost.

Where it is intended to make fresh borders during the coming winter the sooner the materials for their composition are got together the better, as wet weather is not suitable for collecting soils for this work; let the soil be placed in sharp ridges to run off wet. *Wm. M. Baillie-Luton Hoo*.

THE HARDY FRUIT GARDEN.

As soon as the Peach and Nectarine trees are cleared of fruit the bearing and useless wood should be cut away, so as to give that which is retained light and air to ripen it. The fruit tree borders should also be examined as to the state of the soil, more particularly when the walls have very wide copings, for although it has been a dripping season, the rain may not have reached the subsoil at the foot of the walls; and should it be found to be dry, thorough waterings must be repeatedly afforded until all is completely moistened.

Jargonelle and *Beurré Giffard* Pears are now ripening, and the forwardmost may be gathered at intervals of a few days and placed in the fruit-room, where they will keep for a short period. Plums require looking over frequently, more especially when large quantities are grown and gathering the ripest. For bottling whole the fruit should be gathered before it is quite ripe, and the stalks should be left on the fruit. Late varieties, such as the *Red Magnum Bonum*, *Coe's Golden Drop*, *Jeffersons* and *Late Orleans*, are all very much improved in flavour by being allowed to hang until they begin to shrivel slightly, in fact *Jefferson's* is like a sweetmeat when it becomes a little shrivelled. If the trees are growing against walls the fruit must be protected from the attacks of wasps and flies. The present is a good time to make notes of the fruit trees wanted for planting during autumn and winter. A visit to a well appointed nursery at this season of the year will prove of immense advantage, for the newer varieties of fruit, as well as the proved ones, can be seen growing in quantities. *A. Ward*, *Stoke Edith Park*.

Advertisers are specially requested to note, that, under no circumstances whatever, can any particular position in the paper be guaranteed for advertisements occupying less space than an entire column.

APPOINTMENTS FOR THE ENSUING WEEK.

SALES.

MONDAY,	SEPT. 17	Great Unreserved Sale of Dutch Bulbs, at Protheroe & Morris' Rooms.
		Annual Trade Sale of Greenhouse Plants at the Dyson's Lane Nursery, Upper Edmonton, by Protheroe & Morris.
TUESDAY,	SEPT. 18	First-class Dutch Bulbs, at Stevens' Rooms.
		First-class Dutch Bulbs, at 123, Fenchurch Street, by Messrs. Small & Co.
WEDNESDAY,	SEPT. 19	Annual Trade Sale of Greenhouse Plants at the Burnt Ash Lane Nurseries, Lee, by Protheroe & Morris.
		Annual Trade Sale of Greenhouse Plants at the Lea Bridge Road Nurseries, Leyton, E., by Messrs. Protheroe & Morris.
THURSDAY,	SEPT. 20	First-class Dutch Bulbs, at Stevens' Rooms.
		First-class Dutch Bulbs, at 123, Fenchurch Street, by Messrs. Small & Co.
FRIDAY,	SEPT. 21	Annual Trade Sale of Greenhouse Plants, at the Brimsdown Nursery, Enfield Highway, by Messrs. Protheroe & Morris.
		Great Unreserved Sale of Dutch Bulbs, at Protheroe & Morris' Rooms.
SATURDAY,	SEPT. 22	First-class Dutch Bulbs, at Stevens' Rooms.
		First-class Dutch Bulbs, at 123, Fenchurch Street, by Messrs. Small & Co.

There can be little doubt that the British public—or, at least, those most immediately concerned—are being vigorously stirred up as to the necessity of utilising all our available resources. Of these, fruit culture is undoubtedly one. There is, however, a fear that, with the enthusiasm of advocates, exaggeration, and consequent disappointment, may prevail, if the subject be not treated with becoming carefulness. From this point of view the Fruit Conference at the Crystal Palace—the record of which occupies so much of our space to-day—may fairly be commended.

Mr. FRANCIS RIVERS, the worthy inheritor of a great name, with great prudence and discretion plunged at once into the more practical side of the question, and dealt with it in a spirit of little but commendation can be applied. If any exception can be taken to his pronouncement it is, as we think, the undue value, under existing circumstances, that he placed on the chemical analysis of soil. In point of fact, the future of fruit cultivation, according to our present lights, is not so much a question of a little more or a little less potash in the soil, as of the selection of suitable sorts, and particularly of careful and judicious cultivation. Speaking generally, most soils are rich enough in potash not to need much expenditure in that direction, though, of course, it needs no chemist to tell the fruit-farmer that judicious feeding is as important for fruit trees as for any other crop. We have only to look at the majority of our fruit gardens to see that cultivation, in

the gardener's sense, has been and is grievously neglected by the fruit grower. The impression seems to prevail that we have only to stick in a fruit tree, and let it grow to secure desirable results. Look at the mangy condition of most of our orchards, the scrubby trees, the reckless pruning—save the mark!—the indifference as to the selection of suitable sorts and appropriate stocks, the utterly careless system of gathering, the reckless selection for market, and the happy-go-lucky system of packing and sending to market, and consider whether these things are not as inimical to profit as hard land laws, fiscal restrictions, and exorbitant railway charges. Growers for market have indeed much to learn from the gardeners who grow mainly for their masters' tables. Ask the salesmen in the market whose fruit fetches the highest prices, and the reasons; and it will be found that the gardeners by their superior skill in growing, in selecting, and in packing the produce, achieve results of a far more satisfactory character than the ordinary fruit grower though of course he has to deal with much larger quantities. The reasons for this are obvious enough. It is a question of good cultivation and business-like marketing; and the Conferences which have been held, and which are still to come, will effect much good by making this known. A knowledge of first principles will be diffused, and the experience of the most skilled cultivators will be turned to good account. In this way also will the labours of such men as KNIGHT and RIVERS the elder, and those who, like them, have combined science with practice and practice with science, be brought to bear on the subject. To experiment with knowledge, care, and judgment, as KNIGHT and RIVERS did, is to secure results of incalculable value. A Peach or a Plum which comes into use a week or two earlier, or a week or two later, as the case may be—which will be free from mildew while others are crippled with it, which will bear the rough handling consequent upon transit, which may be depended on for a crop of some sort, even in adverse seasons—to obtain and to distribute these is to add to the wealth of the producer, and to contribute to the welfare of the consumer. And the men who achieve these results—the men who know most of the subject—are precisely the men who, while recognising the desirability of extending fruit culture, will be, and are, the most ready to avoid exaggeration, and to look on fruit-culture as an adjunct to agriculture—not, as some seem to think, a substitute for it. It is, indeed, lamentable to see, on the one hand, the enormous importations from abroad, and on the other the equally great neglect of opportunities at home; and if these Conferences do aught, as we think they will, to reduce both to their proper proportions they will effect great good even if they do not realise all the "tall talk" which has been poured forth, or effect that change of climate which shall convert the British Isles into a second California.

Whether or no, the thanks of the community are due to MESSRS. CASTLE and EARLEY, by whose exertions the recent Conference at the Palace was conducted to so satisfactory a conclusion, and which may lay the foundations of a Fruit Growers' Association on the lines of that famous American Pomological Society whose proceedings we have so often had to record with mixed feelings of congratulation to our American cousins and of humiliation as regards ourselves. A proposal to this effect was, indeed, submitted to the Conference by Mr. CHEAL, and this is to be further discussed at the meeting to be held at the Crystal Palace on October 11.

CONVOLVULUS TENUISSIMUS.—A very beautiful greenhouse perennial, native of Greece (fig. 39). Its leaves are delicately cut into narrow lobes, and covered with silky pubescence. The flowers are of a pretty pink colour. It is figured in SINTHORP'S *Flora Græca*, t. 195, and also in one of the early volumes of the *Botanical Magazine*, t. 359, where it was figured as *C. althæoides*.

THE BRITISH ASSOCIATION.—The meeting at Bath may be described as one of average character Section D.—Biology—was presided over by Mr. DYER, Director of the Royal Gardens, Kew, who in his address reviewed the present state and prospects of botany and its applications to biology and medicine. We regret that the crowded state of our columns forbids our inserting any portion of this address this week, but we trust to be able to do so later on. Professor MARSHALL WARD'S paper on the fungus destructive to Lilies was a very exhaustive piece of work, which will be probably published in full, when we may have an opportunity of referring to it.

LANDSCAPE GARDENING IN INDIA.—We understand that Mr. W. GOLDRING has been engaged by His Highness the Maharajah GAEKWAR of Baroda, to carry out some extensive landscape gardening work at Baroda and other parts of the GAEKWAR'S dominions. His Highness is desirous of having magnificent gardens around his palaces (Makurpura and Laxmivilosa), and no expense will be spared to effect his object. Mr. GOLDRING is commissioned to design and lay out some public parks and gardens at Baroda and other places, and to advise His Highness upon organising a Department of Public Parks and Gardens, which will include a school for teaching the principles of horticulture to young native men. The GAEKWAR is fond of gardening, and he is anxious to see gardening carried out on better principles in his dominions, for, having travelled much in Europe, he has seen how highly advanced gardening is here. Mr. GOLDRING has been engaged to spend three winter months (December, January, and February) in India for three successive years, by which arrangement he will be able to continue his home practice, and he will start this year on his first visit in November.

CHARLES LEIRENS.—Visitors to the Ghent Quinquennial must be familiar, if not with the person at least with the name of this gentleman. He died on August 6 last at the age of 78 years, having for many years been a leading spirit in the Royal Society of Agriculture and of Botany of Ghent since 1838, in which position he obtained the confidence and respect of all with whom he came in contact.

CHAMBRE SYNDICALE, GHENT.—At the meeting of the Chambre, on August 13 last, Certificates were granted to the following subjects:—*Cypripedium Stonei* album, shown by MM. J. VERVAET & Co.; *Cattleya Randei*, shown by M. L. LINDEN; *Cypripedium C. Canham*, shown by M. J. HYE-LEYSSEN; *Filicium decipiens*, *Nephrolepis rufescens tripinnatifida*, and *Bertolonia Madame Ed. Pynaert*, shown by M. ED. PYNART; and *Cattleya Gaskelliana alba*, shown by M. ALFRED VAN IMSCHOOT.

"BOTANICAL MAGAZINE."—The September number contains figures of—

Spathoglottis Viellardi, Rchb. f., t. 7013.—Leaves plicate; racemes from the base of the pseudobulb; flowers 2 inches across, star-shaped, flat, segments, ovate-lanceolate lip very narrow, anterior lobe rounded. New Caledonia.

Caragana Andreana, E. Morren, t. 7014.—Leaves strap-shaped, spineless, reflexed; flowers in terminal stalked panicles, bracts orange, lanceolate, perianth segments yellow.

Masdevallia Mooreana, Rchb. f., t. 7015.—Flower-cup cylindric, tubular limb divided into linear-lanceolate acuminate segments of a rich crimson colour.

Narcissus Broussonetii, Lagasca, t. 7016.—A very interesting species, with umbellate white flowers



FIG. 39.—*CONVOLVULUS TENUISSIMUS*: FOLIAGE SILVERY; FLOWERS PALE PINK. (SEE P. 300.)

like those of a Paper Narcissus, but almost destitute of crown. It is a native of Morocco, and flowered at Kew and with Sir E. G. LODGE, at Weedon.

Erythronium Hendersoni, S. Watson, t. 7017. — A species native of Oregon, with stalked oblong ovate leaves; solitary flowers reflexed on the tops of long peduncles; perianth segments reflexed, oblong, lanceolate, violet.

L'ORCHIDIENNE.—Under this name it is proposed to establish at Brussels a Society for the promotion of Orchid culture by means of meetings and lectures. Prof. REICHENBACH is honorary President for Germany, M. LINDEN for Brussels, and G. DE LANSBERGE for Holland. The inaugural meeting will be held at 79, Rue Wiertz, Brussels, on September 23, at 10 A.M. The meetings will be held on the second Sunday in each month, and a special exhibition of Orchids once a year, at which amateurs alone will be allowed to compete. The annual subscription is 10 fr.

THE ASCOT NURSERIES.—The Royal Nurseries, Ascot, were put up for sale at the Auction Mart, London, by Messrs. PROTHEROE & MORRIS, on Friday, September 7, inst. These nurseries were originally founded by Mr. JOHN STANDISH, one of the most enterprising nurserymen of his time, and some of the evergreens and Conifers which adorn gardens at the present time were raised in them. After pointing out the advantages of purchasing a nursery, with the goodwill of the business as a going concern, the auctioneer invited biddings, which commenced at £2500; and, although there was a keen competition, the biddings did not reach the reserve price, the property being withdrawn at £1500.

ASPARAGUS TENUISSIMUS.—Mr. SMEE sends us a spray of this in flower; the flowers are small and greenish white. We do not remember to have seen it in bloom before.

SKIPTON FLOWER SHOW.—The annual show in connection with Skipton Floral and Horticultural Society was held on Saturday, September 1, in a field adjoining Skipton Castle. Sir MATHEW WILSON, Bart., opened the show in the early part of the afternoon, and expressed his regret at the meagre attendance, which he attributed to the inclement state of the elements, rain having fallen almost continuously throughout the morning. The exhibits were in advance of last year in quality.

THE BATH SHOW.—This show was of unusual excellence, as may be gathered from our report last week. The 1st prize for the most interesting exhibit of any hybrid or cross-fertilised plant (Orchids and Ferns excepted)—plants or cut specimens from which those results were obtained to be shown—was taken by Mr. CYPHER, of Cheltenham, who showed *Croton Newmanianus* × *Queen Victoria* and *Evansianus*. In a class for hybrid Ferns Colonel JONES took the 1st prize for a beautiful form of *Polystichum angulare*, named *P. a. inaequale variegatum*; and for six plants of hybrid varieties of *Athyrium* he was awarded a 1st prize. Col. JONES and Mr. LOWE secured, between them, no fewer than thirty First-class Certificates for distinct new varieties, a fact which shows that other bodies besides the Floral Committee award certificates in abundance.

A NEW DEPARTURE.—The eleventh show, promoted by the Habergham (near Burnley) Floral and Horticultural Society, was held on Saturday, September 1, at Gawthorpe Schools, near to Sir U. K. SHUTTLEWORTH'S Lancashire seat, and proved a decided success in every way. This Society adopts a very commendable system. It is that the committee is commissioned previous to the show to visit and examine the gardens of intending exhibitors, and if it is found that any of them stage other than the committee have seen and marked, a disqualification is made.

DOUBLE-FLOWERED PETUNIAS.—Messrs. HENDER & SONS, of Mannamead Nursery, Plymouth, send blooms of double-fringed Petunias of their

strain. They are stated to be ordinary flowers from seedling plants, and are certainly very pretty flowers, well adapted for late summer use in the greenhouse. The firm has been experimenting with *Petunias*, with the object of raising good double forms, for over twenty years. The selection sent included the best hitherto raised of fringed, very double flowers in purple of various shades, white, and the two colours variously blended.

TRINIDAD.—The last *Bulletin* of the Botanical Department of Trinidad is occupied with a treatise on the cultivation of Coffee, based on a similar work by Mr. SABONADIERE, formerly of Ceylon, but now of Jamaica, and adapted to the requirements of Trinidad, by Mr. HART. A very important alteration in the procedure has of late taken place, whereby, after the pulp of the berry (cherry of commerce) has been removed, the seeds (beans) may be transmitted to England to have the parchment (endocarp) removed—a process that can be done with much less trouble and expense here than in the colonies, while, provided the “parchment” be kept perfectly dry, the Coffee travels better, and retains the desired colour better, than when the skin is removed on the plantations.

FUNGUS FORAY.—The concluding meeting of the season of the Yorkshire Naturalists Union is to take the form of a fungus foray, on Wednesday the 26th inst. The hunting ground is to be Harewood Park and Woods, as well as other old woods, &c., within easy distance of Leeds. In the evening the specimens will be exhibited in Leeds Philosophical Hall. Mr. G. MASSEE, F.R.M.S., of Kew, and others have accepted invitations to be present. The presence of mycologists will be most heartily welcomed, to whom circulars will be sent on application to the Secretary, Mr. W. D. ROEBUCK, Sunny Bank, Leeds.

ARAUJA ALBENS.—An exhibit which arrived too late for the inspection of the Floral Committee at their last meeting at Westminster, deserves notice. The charming group of flowers came from that home of beautiful things in the plant way—Pendell Court, Bletchingley. *Arauja albens* is, according to the *Genera Plantarum*, synonymous with *Physianthus albens*, and is a native of Buenos Ayres, belonging to the same natural order as *Hoya*, viz., *Asclepiadaceae*. It is a strong-growing and free-flowering greenhouse climber of nearly hardy nature, and grows well in any good rich soil. Mr. Ross' course of procedure is to trim or prune it in autumn after it has flowered. It is sweetly scented, and has the additional desirable qualification of lasting a long time in flower. It is a good plant to train under glass corridors, sunny verandahs, and such-like positions.

ORANGE CULTURE IN AMERICA.—The question as to the cultivation of the Orange as a remunerative crop comes before us in a report on the fruit produce of Sicily, where it is stated that the cultivation of Oranges and Lemons in California, Louisiana, and Florida has assumed such vast proportions that it is a matter of certainty that at no distant period the import of the former of these fruits into America, which is one of the chief customers for this article, and the carrying business, which gives so large employment to English merchant vessels, will wholly cease, and, although the exportation, owing to a failure in the crops in Florida through an unprecedented frost, was largely increased in 1887, yet it was carried on at such prices as not to be remunerative. In fact, encouraged by the extraordinary prices which were obtained in the American markets for Sicilian produce some years ago, the Sicilian cultivators increased their Orange and Lemon plantations to such an extent that the over-production has increased to a ruinous degree. Indeed, the prices at which the fruit was sold in America in the past year did not, in some instances, even cover the freight. It must be added that their bad packing and the choice of inferior fruit which might have been used for the manufacture of essences and extracts at home, have not a little contributed to the depreciation of Sicilian fruit in foreign markets. The export of Lemons, however, may be continued on account of the especial aptitude of the Sicilian climate for the growth of these fruits owing to the absence of frost.

PLANT PORTRAITS.

ANTHURIUM DESMETIANUM X.—A handsome cross-bred form, with hastate shining-green leaves, large cordate ovate-acute puckered spathes of a rich crimson-scarlet colour and short ivory spadices. It was raised by M. Desmet from *A. Andreanum*, fertilised with pollen from *Anthurium Leopold II.*, the last-named plant being itself a cross out of *A. Lindenianum*, fertilised by *A. Andreanum*. *Illustration Horticole*, t. 52.

BATEMANNIA COLLENT, Lindl., *Orchid Album*, t. 331.

CYPSALEUM DECIPENS, *Lindenia*, t. 144.

CATTILIA LAWRENCEANA, Rehb. f., *Orchid Album*, t. 342.

CHENALIBIA GIGANTEA, *Rome Horticult.*, August 16.

CYPRIPEDIUM CALIBONICUM, *Garden and Forest*, August 8.

CYPRIPEDIUM CANNATTIANUM, figured in the *Lendunia*, t. 141, is a form of *C. Rocklinii*, in which the two lower sepals are disjoined.

CYPRIPEDIUM MITEACANUM, *Lindenia*, t. 145.

DENDROBIUM BENSONI, *Lindenia*, t. 148.

MASDEVALLIA HARRYANA DECORA, *Orchid Album*, t. 344.

MASDEVALLIA SPECTRUM, Rehb. f., *Lindenia*, t. 143.

NANODES MEDUSA, *Lindenia*, t. 147.

NARCISSUS TRIANDRUS AND **N. CYCLAMINEUS**, *Garden*, August 25.

ODONTOGLOSSUM HARRYANUM, *Lindenia*, t. 142.

ODONTOGLOSSUM LATIMACULATUM, *Lindenia*, t. 145.

A variety of *O. crispum*.

ODONTOGLOSSUM ROSSI AMESIANUM, *Orchid Album*, t. 343.

ORCHIDUM CAVENDISHIANUM, *L'Orchidophile*, August, 1888.

ORCHILUM LIETZII VAR. **AUREO-MACULATUM**, *Garden-flora*, t. 1279.

RHODODENDRON BRACHYCARPUM, *Garden and Forest*, August 15.

ROSE GLOUCE DE MARGOTTIN, *Illustr. Monatshefte*, August, 1888.

HOME CORRESPONDENCE

NOTES ON SOME KINDS OF FRUIT.—Never before in my rather long gardening experience do I remember to have seen Peaches and Nectarines so late in ripening as they are this season, for up to the present (September 6), we have not been able to gather a single dish or half a dozen fruit from the open walls except *Early Rivers* and *Alexander*, and such sorts as *Bellegarde*, *Dr. Hogg*, *Pompre*, *Hâtive Royal George*, *Grosse Mignonne* and *Noblesse* are yet hard, and unless we get more sun and much warmer weather I doubt if many of them will be fit for the table at all. Nectarines, too, are in the same backward state, and the only kinds of these at all approaching ripeness are *Lord Napier*—which is a most valuable variety, and *Elruge*; *Pine-apple*, *Pitmaston Orange* and *Humboldt*, looking as if they would take quite a month yet. Not only is the fruit in the backward state referred to but the wood of the trees, as may be expected, is green and soft; and unless a great change takes place between this and the fall of the leaf, the winter must have a very injurious effect on it, and even if it escapes severe frost the blossoms will be imperfect, and, as a natural consequence, the flowers will not set in the spring. These are gloomy prophecies, but the thing is too apparent to any one at all acquainted with *Peach* and *Nectarine* culture, as so much depends on the maturity of the young shoots in obtaining a crop, and this fact is now pretty well known. The fruit of *Apples* and *Pears* is now showing the bad effects of the season, as not only is it in both cases very small for the time of year, but much of it is pinched and deformed, and will be unfit for anything, and especially is this so with *Pears*, which are so injured in the skin that they are splitting and cracking, and instead of being fleshy, as they should be, are hard and woody, and it is useless leaving such on the trees. All this is very unfortunate, and must be a most serious matter with growers for market, who cannot, as they once could, look forward for better

prices, owing to scarcity of crop, as the foreigner comes in now and derives all the benefit. It is all very well to advocate a more extended cultivation of fruit, but what we really want is a better or more reliable climate, as of late years the springs have been disheartening, and yet there are sheltered spots, if rightly picked and chosen, where success in hardy fruit culture would be almost sure, and would give fine returns for the planting. These matters will, no doubt, be fully gone into at the Fruit Congresses, and I regret my inability to attend, after having the honour of my name being entered as one of the members, as I should have much liked to have taken part in such useful proceedings. J. S.

DISEASE-RESISTING POTATOS.—Whilst it may be dangerous to invite from readers returns as to kinds of Potatoes which this season escaped in districts where otherwise the disease has been very destructive, yet it is obvious some reliable information on that head would be most useful as well as interesting. What one has to fear in relation to such returns is the desire to favour some kind which, after all, has resisting powers only in the writer's imagination. Still farther, what is needed is evidence that any one kind has stood the disease thoroughly over a wide area. As to merely local examples, I have found some kinds good on one side of the road and bad on the other, so that merely individual examples are not enough. If there are any early or semi-early kinds which are not in one or two places but generally uninjured this season, their names cannot be too soon made known. So far as I can learn in this district, not one of that class has escaped, the earlier kinds especially being the worst hit of all our Potatoes. In the case of late sorts there is much diversity, some being severely diseased whilst others are very little injured. Wherever stems are now still green, even if not a leaf is left upon them, it may be taken for granted the tubers are pretty sound. Probably no variety will be lifted this year absolutely free from disease; but when so many are relatively bad, whilst some few others are relatively good, the goodness of but relative deserves the fullest recognition. As is usually the case, the worst evidences of disease are found in the highly manured soils. Last year, because of the torrid dryness which prevailed, only such soils produced decent crops. This year the process, where also fairly well drained, have cleanest crops. On the whole the best plan is to plant in open ground which is deeply worked, to enable moisture to pass through freely, giving ample room for high earthing, and where the soil is partly rich and partly poor. Thus the contingencies of wet or dry seasons may be provided for as well as can be. So far as I can observe, the worst evidences of the disease are found in the tubers near the stems, down which and into the cavity in the soil made by them the heavy rains poured [a point in favour of *Jensen-moulding*, Ed.] However, as all varieties of Potatoes similarly earthed had to endure the same floodings, it is evident that resistance to the attacks of the fungus must be in the tuber itself, and not in the plant growth. A. D.

A FRUITFUL TREE.—In the garden of Merton Lodge, Chiswick, there is a fine tree of *Blenheim Orange Apple* loaded with fruit. The tree is an old one, having been planted about fifty years ago, and has not failed to carry a good crop but once in the last nine years. This year it is estimated that the crop will be about 9 bushels. B.

AN IVY COLUMN.—One of the most striking objects I have seen for some time past is a tall *Soruce* tree encircled with Ivy to a height of 50 or 60 feet. The tree is one of a number growing on the boundary line of an old orchard in a deep valley. The Ivy completely covers the bole, with the exception of a few feet at the extreme head of the tree. At the base, commencing some 5 or 6 feet from the ground, the Ivy radiates from the stem in every direction to a distance of about 4 feet. This, with the thickness of the tree itself, gives a circle of about 10 feet diameter. This gradually tapers until at the height mentioned the top of the tree emerges and forms a small canopy to the column. I am not in a general way in favour of Ivy being allowed to gain such a hold as this, as it can only be a matter of time before the tree dies; but in an occasional instance like this the tree, which is of no great value, may well be sacrificed to the effect of the Ivy. The use of the *Lombardy Poplar* as a columnar object in the landscape has long been recognised; in the case of which I am speaking the same result is gained, with the additional advantage of the column being

evergreen. Here, of course, the combination was accidental, but it could easily enough be produced elsewhere by encouraging the Ivy, and artificially arresting the growth of the tree selected. *D. J. Y.*

LIFTING NARCISSUS BULBS.—Under this head, on p. 263, Mr. Burbidge says he is puzzled by my suggestion that in *Daffodils*, "root-action remains active after the leaves are quite dead, and enables the bulb to get rid of its superfluous moisture into the soil." Mr. Burbidge fails to see how evaporation can take place through the bulb tunics when they are surrounded with wet soil. I am not learned in vegetable physiology, and I am afraid I cannot explain to him how this process takes place, but I never said or thought that it does. When the leaves are dead, I suppose that moisture, in different combinations, may be both taken in and given out by the roots. I believe that active changes may take place within a bulb when apparently at rest. We know that the roots may continue to feed it, and cause an increase of its substance, as, for instance, in Lilies and terrestrial Orchids, which may remain underground without any upward growth through whole seasons, and meanwhile double in size. During this time I suppose that excretions of superfluous matter, including water, may be given out from the roots. I read in Carpenter's *Vegetable Physiology* that "the roots themselves throw out a considerable amount of matter formed in the vegetable itself, and corresponding in character with its peculiar secretions." I can therefore see no unwarrantable assumptions in my theory that bulbs, when dug up, may rot from wet, which they might have got rid of if left in the ground. *C. Wolley Dod, Edge Hall, Malpas.*

HALE'S EARLY AND ALEXANDER PEACHES.—In answer to Mr. Sheppard's enquiries as to whether Hale's Early and Alexander are the same, I wish to say that I am quite convinced they are quite distinct, and for this important reason, that Hale's on a south aspect was fully three weeks later than Alexander on a west wall, though in every other particular they certainly appear the same. I have read Mr. Diver's remarks upon this subject with interest, but think him in error when he says that Hale's or Alexander was raised by Mr. Rivers. I am under the impression they both are of American origin, though Alexander was sent out by Mr. Rivers. *G. Woodward.* [Mr. Diver said that Alexander was raised by Mr. Rivers, and that Hale's was of American origin, but sent out by Mr. Rivers, which is correct. Ed.]

HARDY FRUIT TREES.—Whilst Mr. Burbidge is suggesting that the American race of Apples may be improved in the direction of hardiness by the introduction as progenitors of Russian varieties, it may well be worth inquiring to what extent we have gained from the introduction of Apples from northern climes, and thus, reasoning from analogy, arrive at some just conclusion as to the nature of the results which may flow out of the practical adoption of Mr. Burbidge's suggestion. That writer refers to Red Astrachan and Duchess of Oldenburg as full-blooded Russian kinds. Such being the case, in what respect do these varieties show hardiness or other value beyond what is found in our natural or English varieties? Take, again, those Canadian forms—Northern Spy and Reinette Blanche, or Cobbett's Fall Pippin—are either of these hardier or in any way more fruitful than are ordinary European varieties? The same question might well be asked of several others, and I think it will have to be generally admitted that, so far as can be evidenced, we have gained nothing in relation to our Apple strains by the introduction of high northern varieties. It is very doubtful whether they have been used here for crossing, probably because found generally to be of such indifferent value. In any case, it would be absurd to assume that, because these specified varieties are of northern origin, they are, or have been, found to be in southern latitudes hardier or more productive than are our true British varieties. *A. D.*

BASELLA RUBRA.—The root of this plant, which is usually regarded as tender, will, I find, withstand a considerable amount of frost, provided it has been grown in a pot, and that the soil is dry at the approach of winter. A plant used as a window screen on the south aspect of a dwelling was in October of last year, after the growths were destroyed by the frost, placed in a shed. Here it passed the winter unharmed, and was in April shaken partly out of the soil and planted against a partially sunny wall. The growth was late in starting, owing to the untoward

nature of the weather about that time; but since then the plant has made rapid advance, and the main shoots have reached a height of 7 feet. The plant has a simple ovary, which afterwards becomes a membranous fruit, so that it is not florally beautiful, but its glossy heart-shaped leaves, which are of much substance, and the rapid growth of the shoots, make it a very desirable plant for covering a trellis, trailing round pillars and the sides of windows, and especially so in towns, where flowering subjects do not always succeed. I intend to leave the tuberous roots of the plant in the ground during the ensuing winter, under a protecting cover of coal-ashes. *B. rubra* is a variety of *B. cordifolia*, and yields a rich purple dye, but which is, however, difficult to fix. *M. W.*

WICKER-WORK VASES AND FLOWER-STANDS.—Generally speaking it should be the aim of all who are responsible for the effective arrangement of flowers and plants in the house to utilise such receptacles as are the most conducive to that end. This, however, is not always the case, for too frequently we see gaudily painted vases, &c., which, as far as colour goes, are generally the reverse of effective, especially when no attention is paid to the colour of the flowers and leaves of the plants put into them. To produce a good and artistic effect in the arrangement of plants and flowers in the house special attention should be paid to this point. In my opinion we require more rustic work and less china and paint such as are now generally used. Some of the terra-cotta vases are exceptionally good for indoor decoration; yet how seldom do we see them used when compared with China and other kinds of pottery? Again, there are numerous other sorts of vases for holding plants and flowers, which in my opinion are preferable to those commonly in use. When in Lincolnshire recently I was surprised to see the numerous and varied designs of flower receptacles made in wicker-work. The majority of these are not toys, such as many may suppose, but strong and serviceable, and not only that, but very artistic. In various districts in the Fens, where the Willow abounds, this is a special industry, and one which employs many hundreds of hands in cutting, tying, boiling and otherwise preparing the rods before they are sent to the factory, where the vases, stands, &c., are made. Many I noticed, while recently looking over the extensive works of Mr. Harris, Grantham, were made in the exact shape of a flower-pot in various sizes, some on stands varying from 2 to 3 feet in height, and others for standing on a table or sideboard. Into these an ordinary pot may be stood without any further trouble. Again I noticed numerous useful little receptacles for hanging on the walls of a room, passage, or hall. These may be utilised for small flowering plants, Ferns, or cut flowers, and when tastefully arranged would produce a charming effect. In fact, many are the uses to which these wicker-work flower-stands may be put. *C. Collins.*

THE POTATO DISEASE.—I need hardly apologise for referring to this important subject again, for in the minds of all associated with the soil it is the dominant one. Already do I hear from many sources of the disease proving to be exceptionally bad on the tubers, indeed the proportion of diseased ones seems to range from 30 to 60 per cent. according to soil and general conditions. In stiff soils and especially where there has been strong growth owing to liberal manuring, the disease is terribly virulent, the crops being hardly worth lifting. Facts accumulate with rapidity and so does the disease progress, so that what seemed uncertain one week is made a terrible fact the next. My own observations, so far, have conclusively shown that the disease spores have entered the tubers from the outside and not through the stems; the worst affected being those near the surface, especially large ones, and those tubers which were during the heavy rains near the stems saturated, as down the cavity in the side made by these the water must have poured in round the newly-formed tubers with constant freedom. We shall find all sorts, which have any reputation for disease-resisting powers very fully tested, and any which have proved successful will merit all praise. Why any tubers should thus resist the action of the fungus spores is hard to understand, now that we know the disease is propagated in the tuber rather than through the stems of the plants, except on the hypothesis that the skin or epidermis of the tubers is stouter or less penetrable. However, there will be time enough to deal with that subject when it is proved that some kinds really have resisted the fungus this year. The dryer weather may prove

some sort of saving grace to the later kinds should it continue, but it is certain that whatever may be the merits of tubers, no kind of foliage enjoys immunity from the attacks of the disease. *A. D.*

— "Whosoever will help to ruin his neighbours' crops, willingly, wittingly, per spore of *Peronospora*, let him be anathematised!"—nay, what is more effective and altogether better for a so-called "practical people," let him be hauled before a court of summary jurisdiction and mulcted in the amount of the damage done. Such thoughts as these must occur to all who read Mr. W. G. Smith's communication in a recent number, following up what had been said in the leader of the previous week. His words make one stand aghast, and wonder where is the use of experience, of experiment, of the ubiquitous Press. To repeat a few lines of Mr. Smith's paragraph may here again be useful: "Some of the Potatoes were lifted here last week, and I now observe the fungus-infested haulms (some still green) neatly laid in heaps at the plot corners, the white fungus itself being quite visible to the unaided eye; other blight-stricken haulms are on the paths, to be trodden in—still others are laid one on another upon heaps of stable manure, ready for digging into the ground. The fungus is not at its worst yet; it is only just commencing operations, but I do not remember seeing it in a more general or threatening condition." In how many places may not this be used ink-photographically? And yet, year after year, your pages at this season of the year—those of your contemporaries and agricultural brethren, together with the general Press, have teemed, not only with such illustrations, but with the very simple instructions as to the checking of this selfishly propagated plague! From some—from thousands of gardens there flows nothing but beauty—beauty in crops, in example, and in precept; from others come the worst of everything. We complain of being handicapped by land laws, by railway companies and other things—forgetting that too often we grow the worst instead of the best—that too often weeds—pretty as they may look—choke our crops; and that year after year selfishness and ignorance—they are not always synonymous—are allowed by a paternal government to poison the air and the land, and the very crops themselves with Potato poison. Shame indeed to this so much governed nation. We cannot see the pest until it forces itself into notice—the mental eye in this case waits on the imagination; differently, however, from the instance where it is said—

"Ah, could my Sweet but ope her inner eye
And see how lowe hath girt her round with flowers."

The man who by his carelessness and indifference propagates the fungus, as you have pointed out, is most assuredly as much a thief as any one in London streets who filches purses and watches, or who climbs into one's house during the night and steals. There is a difference, truly, but it is only in manner, not in effect. Disease in cattle exercises the Home Department of Her Majesty's Government very considerably upon occasions; and every possible means is taken to stamp out that disease; why should not the same be done, as far as circumstances will permit, in the case of the Potato disease? But—ah, that "but"—we require an Act of Parliament, a Ministry of Rural Economy—a whole pile of machinery set in motion to secure sound, even if little, Potatoes! But this must eventually be done—and in the end will prove a cheap and efficacious remedy. Only those who deserve should be made to suffer. In some of our colonies, I believe, it is illegal to propagate weeds of particular kinds, and punishable by fine, &c.; what has been found of value there should certainly prove efficacious in similar cases here. This matter I recommend to the careful consideration of the two great societies so deeply interested in it—the Royal Horticultural and the Royal Agricultural Societies. A simple Bill might be drawn up between them, giving powers to the Local Government Boards as well as to the head Department; all parties surely would assist to pass it rapidly through "both our Houses." *C.*

PUBLICATIONS RECEIVED.—*New Bulletin of Miscellaneous Information. Transactions of the Massachusetts Horticultural Society for 1887. Part II. Comptes Rendus des Séances de l'Académie des Sciences, Sept., 1888.*—*Forest Department, Madras Presidency, Annual Report, 1886-87.*—*Gardening in India (Woomrow.)—Practical Hints on Gas Consumption.* By J. SHAW. (Huddersfield: J. BROADBENT & Co., New Street).

CROCOSMA AUREA.

I ENCLOSE a photograph of a plant I have called the golden Crocus of the universe, *Crococoma aurea*, that was grown out-of-doors in the bulb bed in Hyde Park, Sydney. Nearly five years ago we imported six corms from London, four of which survived the carriage. The plant when in flower measured exactly 4 feet in diameter, and a little over 3 feet in height, and had 300 flower-spikes, which have upwards of 5000 flowers. It can be more easily imagined than described the wonderful effect this plant made with its bright orange coloured flowers. The plant is growing in a rather loose sandy soil, and the position is one fully exposed to our sub-tropical sun. The way I have managed to keep the stems close together is, that during the spring months, when the plant is growing, to put the spade down as deep as it will go, about 1 foot outside the previous season's growth. This is done two or three times at intervals of three weeks or a month, which has the desired effect in preventing the stolons getting away. I thought a photograph and description of this plant would be interesting to your readers, from the fact of its being always considered a rather shy flowerer at home, and an erratic one at that, as its long underground stolons render it not very easy to be kept within bounds. *Fred. Turner, Superintendent, Hyde Park, Sydney.* [The engravings (figs. 40 and 41), which were taken from the photographs, amply bear out our correspondent's remarks, Ed.]

SOCIETIES.

ROYAL HORTICULTURAL.

THE Floral and Fruit Committees met at the Drill Hall, James Street, Westminster, on Tuesday, September 11. The bulk of the exhibits consisted of plants, cut flowers, and fruits sent by nurserymen and amateurs taking up but a small amount of space. Hardy herbaceous flowers from Mr. Ware's nursery, *Gladiolus* from that of Messrs. Kelway & Sons, Lilies from Mr. Gordon, Twickenham; and a collection of Asters from the Society's garden, together with fruits from Messrs. J. Veitch & Sons' nursery at Fulham, were the chief.

Floral Committee.

Present: G. F. Wilson, Esq., in the chair; and Messrs. Rev. W. Wilks, J. Walker, W. Goldring, W. Bates, Low, R. Dean, T. Baines, C. Pilcher, J. Dominy, H. M. Pollett, J. O'Brien, E. Hill, S. Hibberd, W. Holmes, J. Fraser, and G. Nicholson.

A few Orchids were exhibited by Mr. B. S. Williams, and included *Oncidium ornithorhynchum album*, showing a single spray, 1½ foot long, of minute white flowers having a yellow crest, and the perfume of Patchouli; *Catasetum tabulare* (læve), a whitish-green flower, singular looking, but wanting in decorative value; *Lælia monophylla*, orange-scarlet in colour; no opinion could be formed of the character or beauty of the plant, one flower only being shown. It was awarded a Botanical Certificate. A well-flowered plant of *Miltonia candida*—the tube is pure white exteriorly, but marked on the inside with mauve; the sepals are brown, edged and barred with yellow. *Mesospinidium vulcanicum* (superbum), a plant having two fine spikes of its deep rose-coloured flowers.

F. G. Tautz, Esq., Studley House, Shepherd's Bush, exhibited *Oncidium macranthum* var. *Williamsii*, a well bloomed specimen; *Disa graminifolia*, from the same exhibitor, was awarded a Botanical Certificate.

The fine *Cattleya Eldorado*, flower white all but the throat, which is yellow, was shown by W. Soper, Esq., 337, Clapham Road, S.W. Two plants of *Lælia elegans* came from Mr. Cook, Kingston Hill.

Miscellaneous.—A neat growing *Adiantum*, said to be obtained by crossing *A. cuneatum* and *A. Paccoti*, and certainly possessing the characteristics of both, was shown by Mr. R. Allum, nurseries, Tamworth, Staffordshire.

Several forms of cut blooms of *Lilium auratum*, *L. tigrinum flore-pleno*, from plants growing in the open, were shown by G. F. Wilson, Esq., Weybridge; *Carnation Blushing Bride*, a light pink, of nice form and picots at the margin, came from Mr. T. Butcher, Croydon; a sport from *Wermig's Yellow* was shown by Messrs. Hawkins & Bennett, Twickenham: it is showy bright yellow, with broad reflexed florets.

A basketful of blooms of *Hydrangea paniculata grandiflora* came from the Society's garden. This variety shows a larger spike than the ordinary form of *paniculata*.

Mr. F. Ross, gr., Pendell Court, showed the old stove creeper *Arauja albens*, in full flower. (See our last issue (p. 271) for a full description of this handsome plant.)

A showy hybrid of *Dianthus Heddewegii* crossed with *D. barbatus* (Sweet William) was shown by Mr. R. Dean, Ealing. In colour it is intermediate between the two parents, and is taller than *D. Heddewegii* and rather more spreading, as well as having smaller flowers. It should make a showy bedder. *D. H. Snowdrift*, a pure white form; *Phlox decussata Rosamond*, *Chrysanthemum maximum*, growing 3 feet high, &c., were also shown by Mr. Dean.

Messrs. H. Low & Co., Clapton, showed *Lilium nepalense*, a flower having black-brown segments, abundantly tipped with green colour.

A few single Dahlias were shown, but nothing which calls for any remarks from us. The Mikado, a crimson-petalled bloom, the disc and base and tips



FIG. 40.—CROCOSMA AUREA.

of the petals a yellow colour, was shown by T. W. Girdlestone, Esq.

The *Gladiolus* from Messrs. Kelway & Son made a rich display; the flowers individually also were fine and well assorted. *Besler*, a carmine flamed with scarlet at the edge, and *Castro*, a bright cerise colour, flaked with white, met the approbation of the committee. A Silver Banksian Medal.

A variety of pot Carnations, *Bouvardia Excelsior*, pink; *B. President Cleveland*, deep crimson; and some very stocky *Mignonette* in small 48's, were exhibited by Mr. H. B. May, of Dyson's Lane, Edmonton. A great bank of *Crotons*, in much variety, of market size, came from the same exhibitor; the brightest was *Etna*, and all were compact and vigorous, though showing less colour than is their wont.

From Mr. Hardy, Orton Hall, Peterborough, came fruits of *Torreya myristica*, egg-shaped, 1¼ inch in their longer, and 1 inch in their shorter diameter: colour green, marked with alternate longitudinal stripes of light and dark. A cone of *Abies magnifica* was also sent by Mr. Hardy.

A large number of *Liliums*, mostly *L. auratum*, but likewise including *L. Kratzeri*, *L. longifolium album*, *L. 1. roseum*, and *L. 1. rubrum*, and others were shown by Mr. W. Gordon, Twickenham. Bronze Banksian Medal.

The Society's garden contributed a numerous array of German Asters of all sections which have been on trial these seasons. It was an interesting group, but, like most out-of-door flowers this season, the flowers showed damage from rain and deficient sunshine.

Mr. T. S. Ware, Tottenham, had a showy display of hardy cut flowers, consisting chiefly of Lilies, *Gladiolus Lemoinei*, *Tigridia*, *Alströmarias*, *Cactus Gladiolus Professor Baldwin*, a scarlet coloured flower; *Papaver orientale* and *P. nudicaule*, and *Trollius europæus*, *Eremurus Olgae*, a fine variety of *E. spectabilis* and *Romneya Coulteri*, a *Papaverad*, with large and beautiful white flowers; *Crococoma aurea* was likewise observed. A Silver Banksian Medal was awarded.

A single flower of *Crococoma aurea* was shown by Mr. J. O'Brien, West Street, Harrow-on-the-Hill. It has orange coloured petals, having a crimson bar about the middle of their length.

FIRST-CLASS CERTIFICATES.

Carnation Madame Carle, from Mr. B. H. May.
Chrysanthemum Mrs. H. Hawkins, from Messrs. Hawkins & Bennett.
Dahlia The Mikado, from Mr. T. W. Girdlestone.
Dianthus splendens, from Mr. R. Dean.
Eremurus Olgae, from Mr. T. S. Ware.
Gladiolus Besler, from Messrs. Kelway & Sons.
Gladiolus Castro, from Messrs. Kelway & Sons.
Lilium nepalense, from Messrs. H. Low & Co.
Oncidium ornithorhynchum, from Mr. B. S. Williams.
Romneya Coulteri, from Mr. T. S. Ware.

BOTANICAL CERTIFICATES.

Disa graminifolia, from Mr. F. G. Tautz.
Lælia monophylla, from Mr. B. S. Williams.

Fruit Committee.

Present: Messrs. R. D. Blackmore, A. H. Pearson, P. Crowley, J. Cheal, J. Burnett, J. Willard, W. Warren, W. Marshall, G. T. Miles, J. Wright, and P. Barr.

From Messrs. J. Veitch & Sons' nurseries there were collections of Plums, Apples, and Pears, and a dish of fine Morello Cherries. The Apples were noteworthy for size and the clearness of the skin. Another exhibit was a number of very young cordon Plums in full bearing.

The *Blackman Ventilating Co.*, 63, Fore Street, E.C., sent dried Strawberries, Gooseberries, Rhubarb, and Potatoes, whole as regards the first two fruits, the others being sliced, or cut into short lengths. These were shown under various heats, and appeared to be quite dried for long keeping, but how they would stand the crucial test of cooking was not ascertainable.

A few fine fruits of Apples and Pears which were set with just enough glass protection as would save them from injury by frost, were sent by Rev. W. Wilks, Shirley; the trees from which the fruit was picked were growing in 10–12-inch pots, and are bearing abundantly, yet the fruits were in many cases above the average in size. A constant bearing Apple, *The Vicar*, said to do well in poor soils, and with a sturdy growth, came from Mr. Wilks. A Cultural Commendation was awarded.

W. Roupell, Esq., Harvey Lodge, S.W., showed various Apples from bushes on the Paradise stock, all being fine of their kind.

A few Melons, Figs, and Pears completed the exhibits.

CRYSTAL PALACE.

NATIONAL DAHLIA SHOW.

FRIDAY AND SATURDAY, September 7 and 8.—This proved in all respect much better than was expected. The very fact that the season is so late led some to think that the flowers would scarcely be ready in time; and Mr. Harry Turner states that his collection at Slough will be at its best in a fortnight's time, should the weather prove fine and open. But there was a good competition in all the classes, though a general lack of brightness was noted in the Dahlias. The forty-eight blooms shown by Mr. C. Turner in class 2 were very fine throughout, and indeed all the strength of the Slough collection was put into this class. The fancy varieties were a little rough. Pompon, single and decorative (*Cactus*) Dahlias very fine, and seedlings unusually numerous, some delightful new varieties of the pompon section being produced. A large number of exhibitors took part in the competition.

Nurserymen's Classes.—In the class for seventy-two blooms, not fewer than thirty-six varieties, there were four competitors for the four prizes, and here Messrs. Keynes, Williams & Co., nurserymen, were 1st, with a good lot of blooms, the season considered, consisting of Joseph Ashby, Royal Queen, Harry Keith, Colonelist, Mrs. Langtry, W. Spofforth, Thomas Hobbs, Nellie Cramond, Henry Walton, Mrs. Gladstone, James Service, Burgundy, Buttercup, Richard Dean, Eclipse, James Vick, Clara, Thomas Goodwin, Diadem, King of Crimsons, Herbert Turner, Willie Garratt, George Barnes, Lustrous, Mr. Dodds, J. T. West, James Cocker, Mr. Glasscock, Gloire de Lyon, Mrs. Kendal, Henry Walton, Hon. Mrs. P. Wyndham, Mrs. G. F. Jeffard, Prince Bismarck, and the following fancy varieties:—Frank Pearce, Madame Soubeyre, Hugh Austin, Rebecca, W. G. Heade, Duchess of Albany, Rev. J. B. M. Camm, and Henry Eckford. 2nd, Mr. Charles Turner, Royal Nursery, Slough, with Henry Walton, Mrs. Kendal, Mrs. Gladstone, Champion Rollo, J. T. West, Mrs. Shirley Hibberd, R. T. Rawlings, John Bennett, Crimson King, Joseph Ashby, Charles Lidgard, Mrs. W. Head, Mr. Harris, Mrs. W. Slack, Harry Keith, James Cocker, George Dickson, Lady Gladys Herbert, Mrs. Kendal, Goldfinder, Mrs. Jeffard, Prim-

varieties, showing a very good lot of blooms of such fine varieties as Mrs. Gladstone, Thomas Hobbs, Royal Queen, James Cocker, John Wyatt, Hope, J. N. Keynes, Ethel Britton, Rebecca, R. T. Rawlings, Lady Ravensworth, Queen of the Belgians, Mrs. Langtry, Harry Keith, Grand Sultan, Joseph Ashby, William Rawlings, Flag of Truce, Burgundy, Royalty, Mrs. W. Slack, Peacock (fancy), Mrs. G. R. Jeffard, James Cocker, Hon. Mrs. P. Wyndham, Colonelist, Mrs. Gladstone, Lady Louisa Mills, Mr. Harris, John Bennett, Mrs. S. Hibberd, Joseph Green, Flora Wyatt, and Earl of Ravensworth. 2nd, Messrs. J. Saltmarsh & Son, nurserymen, Chelmsford, with Henry Walton, Harry Keith, Constance, James Vick, John Standish, Mrs. Langtry, Mrs. Gladstone, James Cocker, Lady G. Herbert, J. T. West, Mrs. Saunders, Willie Garratt, Ethel Britton, Mrs. Harris, Sunbeam, Mrs. George Rawlings, Goldfinder, Gaiety, Criterion, and William Rawlings.

In the class for twenty-four blooms there were seven entries, and Messrs. J. Saltmarsh & Son were 1st with finished flowers of Henry Walton, R. T. Rawlings, Willie Garratt, Mrs. Gladstone, Mrs. Saunders (fancy), William Rawlings, Mrs. Langtry, Burgundy, J. T. West, Shirley Hibberd, Mrs. Harris, Hugh Austin, Mr. Glasscock, Constance, Harry

Ethel Britton, T. S. Ware, a very fine crimson self; Mrs. Harris, Thomas Hobbs, Prince of Denmark, Mrs. G. Rawlings, John Henshaw, Mrs. Shirley Hibberd, Colonelist, Queen of the Belgians, Mr. Glasscock, J. T. West, Miss Cannell, Prince Bismarck, R. T. Rawlings, Burgundy, Mrs. W. Slack, W. H. Williams, Royalty, and Walter. It is worthy of note that this stand, which contained some very highly finished blooms, included also ten varieties raised by Messrs. Bros. 2nd, Mr. W. Mist, Igham, Sevenoaks, with some good blooms of Harry Keith, Harrison Weir, W. H. Williams, Queen of Primroses, Wm. Rawlings, The Ameer, Queen of the Belgians, Mrs. Langtry, Grand National, a yellow self; Mrs. Gladstone, Clara, Lady G. Herbert, and Mrs. Shirley Hibberd.

In the class for twelve varieties there were nine stands, and Mr. J. T. West, gr. to H. Keith, Esq., Cornwallis, Brentwood, was 1st, with a stand of good blooms, having Harry Keith, R. T. Rawlings, Mr. Glasscock, Mrs. Gladstone, Mr. Geo. Harris, F. J. Saltmarsh, Prince Bismarck, Miss Cannell, Prince of Denmark, Mrs. S. Hibberd, Wm. Rawlings, and J. T. West. 2nd, Mr. Thomas Hobbs, Lower Easton, Bristol, with Clara, Queen of the Belgians, Henry Walton, Ethel Britton, Golden Eagle, Emily Edwards, Shirley Hibberd, J. N. Keynes, Mrs. Dodds, Hon. Mrs. P. Wyndham, Hon. S. Herbert, and Mrs. Jeffard.

In the class for six blooms there were nine stands, Mr. H. Steer, Southwood, New Eltham, being 1st, with George Dickson, Ethel Britton, Golden Eagle, Joseph Ashby, Miss Cannell, and J. N. Keynes. 2nd, Mr. W. H. Smith, Wanborough, Shrivenham.

Fancy Dahlias.—In the class for twelve blooms there were three competitors, Mr. J. T. West being placed 1st, with good examples of Mr. N. Hall, Rev. J. B. M. Camm, W. G. Grace, Duchess of Albany John Forbes, Hugh Austin, Dorothy, Frank Pearce, Salamander, James O'Brien, Mrs. Saunders, and Henry Glasscock; 2nd, Mr. H. Glasscock, with Duchess of Albany, Egyptian Prince, Chorister, Mrs. Saunders, Miss Browning, Goldfinch, Mr. N. Halls, etc.; 3rd, Mr. W. Mist.

In the class for six blooms there were ten entries, Mr. Sidney Cooper, Chippenham, being 1st with Peacock, Henry Eckford, Prince Henry, Lottie Eckford, Goldfinch, and Egyptian Prince; 2nd, Mr. Thos. Hobbs, his best blooms being Fanny Sturt, Henry Eckford, and W. G. Head.

Open Classes.—Next came four classes for six blooms of stated colours; and in that for dark varieties there were eight competitors, Mr. J. T. West being 1st with James Vick, Rev. J. Godday, Prince of Denmark, Lord Chelmsford, Shirley Hibberd, and Harry Turner; 2nd, Mrs. M. V. Seale, with Shirley Hibberd, Hon. S. Herbert, Prince of Denmark, William Rawlings, Prince Bismarck, and David Saunders.

In that for six light Dahlias Mr. C. Turner was 1st with Mrs. Gladstone, Julia Wyatt, Mrs. Harris, Ethel Britton, Flag of Truce, and Mary Anderson, a seedling in the way of Mrs. Gladstone; 2nd, Messrs. J. Saltmarsh & Son, with Mrs. George Rawlings, Mrs. G. Harris, Earl of Ravensworth, Flag of Truce, Mrs. Gladstone, and Ethel Britton.

Messrs. Keynes Williams & Co. had the best six tipped Dahlias in Mrs. Kendal, Peacock, Henry Walton, Fanny Sturt, Miss Cannell, and Mrs. Saunders; 2nd, Messrs. J. Saltmarsh & Son, with Mrs. Langtry, Polly Sandell, Lady Gladys Herbert, Mrs. Saunders, Mrs. N. Halls, and Peacock, fancies playing an important part in this class.

Messrs. Keynes & Co. had the best six striped Dahlias, having the following fancy varieties:—Prince Henry, James O'Brien, Hercules, Hugh Austin, Rebecca, and the Rev. J. B. M. Camm; 2nd, Messrs. H. Clark & Son, nurserymen, Rodley, Leeds, with Henry Eckford, Rev. J. B. M. Camm, Lottie Eckford, Rebecca, General Gordon and Hugh Austin.

Decorative and Cactus Dahlias.—There were two classes for these—one (open) for six varieties, six blooms of each; and the other for amateurs, four varieties, three blooms of each. As might be expected they made an imposing effect. There were six stands of six bunches, Mr. C. Turner being 1st, with fine examples of Empress of India, Mrs. Hawkins, Lady Marsham, Henry Patrick, White Juarez, and William Rayner. 2nd, Messrs. Williams & Co., with fine bunches, also including some very promising new varieties—Amphion, Empress of India, Mrs. Hawkins, Juarez, Honoria, and Panthea.

In the amateur class Mr. Henry Glasscock was 1st with Mrs. Hawkins, Empress of India, Juarez, and Henry Patrick. 2nd, M. Heeremans, with Charming



FIG. 41.—CROCOSMIA AUREA. (SEE P. 304.)

rose Dame, Florence, and Walter. 3rd, Mrs. M. V. Seale, The Nurseries, Sevenoaks; 4th, Mr. Eric F. Such, florist, Maidenhead.

In the class for forty-eight blooms, distinct, Mr. C. Turner was 1st, with remarkably good blooms of the following:—Mrs. J. Downie, Burgundy, T. J. Saltmarsh, Henry Walton, Diadem, Prince Bismarck, Goldfinder, The Ameer, Crimson King, Mrs. Douglas, James Cocker, Rebecca (fancy), James Cocker, Mrs. G. R. Jeffard, Ethel Britton, Mrs. W. Slack, Olivia, Walter, Mrs. S. Hibberd, Primrose Dame, Joseph Green, Mr. Harris, Mrs. Kendal, W. Rawlings, Champion Rollo, Hon. Mrs. P. Wyndham, Harry Keith, Georgiana, James Vick, Mrs. Gladstone, Willie Garratt, Mrs. Foster, Imperial, Prince Bismarck, Chris. Ridley, Royalty, Charles Wyatt, R. T. Rawlings, J. T. West, Clara, Mrs. Harris, Lady G. Herbert, Flag of Truce, and Excellent; 2nd, Messrs. Keynes, Williams & Co., their best flowers being Harry Keith, Rev. J. B. M. Camm, Mr. Spofforth, Henry Walton, Mrs. Gladstone, Madame Soubeyre, George Barnes, Julia Wyatt, J. T. West, Mrs. Shirley Hibberd, James Vick, Mrs. Langtry, Rosetta, Vice-President, William Rawlings, Royal Queen, Willie Garratt, J. N. Keynes, H. W. Ward, Rev. J. B. M. Camm, and Mrs. Saunders.

Mr. John Walker, nurseryman, Thame, was 1st, with thirty-six blooms, not fewer than eighteen

Keith, Earl of Ravensworth, J. W. Lord, T. J. Saltmarsh, John Standish, Ethel Britton, Lady G. Herbert, James Cocker, Criterion, and John Henshaw. 2nd, Mr. George Humphries, Kington Langley, Chippenham, with Harry Keith, Mrs. Gladstone, W. Rawlings, Maid of Athens (fancy), J. T. West, Cardinal, Earl of Ravensworth, Royal Queen, Henry Walton, Queen of the Belgians, Mrs. Langtry, Bendigo, and Joseph Green.

In the class for twelve blooms there were five entries, Messrs. Rawlings Bros., nurserymen, Romford, being 1st with Gaiety (fancy), William Rawlings, Pelican (fancy), Rev. J. Godday, Prince Bismarck, Mrs. Langtry, Egyptian Prince (fancy), T. J. Saltmarsh, Sunbeam, Prince of Denmark, John Henshaw, and R. T. Rawlings. 2nd, Messrs. J. Gilbert & Son, nurserymen, Ipswich, with F. J. Saltmarsh, J. W. Lord, G. R. Jeffard, Mrs. Kendal, Mr. G. Harris, Harrison Weir, Countess of Lonsdale, of a charming soft pinkish colour; and Lord Chelmsford.

Amateurs: Show Dahlias.—In the class for twenty-four blooms there were two competitors only, it having severely taxed the resources of amateurs who grow limited collections to get as many flowers, distinct, up to show form. Here Mr. Henry Glasscock, Rye Street, Bishops Stortford, was 1st, with a very good lot of blooms, consisting of Nellie Cramond, Mrs. Gladstone, William Rawlings, T. J. Saltmarsh,

Bride, Mrs. Hawkins, Empress of India, and Mrs. Tait.

Pompon Dahlias.—These made a delightful feature, and being set up in large bunches, proved a very great attraction also. With twenty-four varieties, distinct, Mr. Charles Turner was 1st, with Darkness, Juliette (yellow tufted with orange-red), William Carlisle, Golden Gem, Thomas Moore, White Aster, Cupid, Admiration, Mabel, Dandy, Leila, Ernest, Innocence, Favourite, Lady Blanche, Gem, The Khedive, Rosalind, Rubens, Isabel, Adonis, Don Juan, E. F. Jungker, and Gazelle. 2nd, Messrs. Keynes & Co., their stand comprising some charming new varieties, such as Red Indian, Eurydice, Eden, White Aster, Rosalie, Karl Guldensuch, Fairy Tales, Favourite, Lady Blanche, Darkness, Janet, Little Ethel, Little Duchess, Little Bobby, Rosetta, Gem, and Whisper, pale golden-yellow. With twelve varieties, out of eight competitors, Messrs. J. Burrell & Co., were 1st with Isabel, E. F. Jungker, Mabel, Rosalie, Gem, White Aster, Favourite, Cupid, Darkness, Comtesse von Sternberg, Fanny Weimer, and Golden Gem. 2nd, Mr. G. Humphries with E. F. Jungker, Favourite, H. Melesky, Dora, Golden Gem, Little Nigger, Isabel, Leila, Royalty, and Lady Blanche.

A class of six bunches was open to amateurs only, and there were seven competitors, Mr. J. T. West being 1st, with Mabel, E. F. Jungker, Gem, Isabel, Little Nigger, and Leila. 2nd, Mr. H. Glasscock; 3rd, Mr. J. Harris, Broomfield, Chelmsford; 4th, Mr. R. Spinks.

Single Dahlias. These were a highly popular feature also, and they were admirably shown. There was but one exhibitor of twenty-four bunches—Messrs. J. Cheal & Sons—who had a superb stand set up in triangular bunches of ten blooms on their registered wire supports.

In the class for twelve varieties there were seven stands, Messrs. Paul & Son being 1st, with W. Kennett, The Quair, White Queen, Canterbury Tales, Lutea grandiflora, Harlequin, Mrs. H. Whitfield (pale yellow, new), Miss Gordon, Mrs. Bowman, The Bruce, Miss Henshaw, and Dulcinea; 2nd, Mrs. M. V. Seale.

In the class for six varieties, open to amateurs, there were but two collections, Mr. T. W. Girdlestone, Sunningdale, Bagshot, being 1st; 2nd, Mr. H. Glasscock.

Seedlings.—Of these there were a goodly number, the show and fancy varieties being sparingly represented. A First-class Certificate of Merit was awarded Messrs. Keynes, Williams & Co. for fancy Dahlia Matthew Campbell, a distinct and very pleasing variety, bright buff ground, shaded with apricot, and striped crimson; they also had show Dahlia William Jackson, shaded crimson, with bright purple edging. The same award was also made for decorative Dahlia Panthea, very bright pale reddish-cerise, a flower of the Juarez type, and very pleasing; Amphion, yellow, flushed with cerise; and Honoria, pale bright yellow, very promising. Also to pompon Dahlias Little Ethel, white, slightly tipped with deep purple, very distinct, pretty, and pleasing; Fairy Tales, delicate primrose, extra fine quality; Whisper, bright yellow, with beautiful petal and outline—extra fine; and Eden, deep bright and shaded crimson—very fine shape. They also had Little Darkie, bright maroon—small, good shape; Red Indian, deep bright red—distinct in colour; and Eurydice, blush, tipped with purple. The same award was made to the following single Dahlias, shown by Mr. T. S. Ware:—R. C. Harvey, yellow, shaded with salmon, and having a red ring round the eye—distinct; Florrie Fisher, having a white ring round the eye, with edging of shaded mauve—very distinct and pleasing; and Mrs. Ramsbottom, pink, shaded with cerise, a charming and distinct variety of great merit. Mr. T. S. Ware also had Kate, orange-maroon—a bright looking flower; and the following decorative varieties:—William Rayner, yellow, shaded with cerise, and tinted with purple; Sydney Hollings, maroon, shaded with purple; and Professor Baldwin, pale orange-scarlet type of Juarez. The same award to Mr. J. T. West, for decorative Dahlia Beauty of Brentwood, pale shaded purple, with bright purple on the petal edges—distinct and very fine, and quite of the Juarez type; and also for pompon Dolly Keith, white, the centre yellow, tipped with white, the exterior petals occasionally taking this form, the centre being quite white. The same award to Mr. T. W. Girdlestone, Sunningdale, for single Dahlia Daisy, white, broadly edged with mottled rosy-pink—pretty and distinct; and The Mikado, having a yellow ring round the eye, then a broad zone of deep scarlet, edged with prim-

rose—distinct and fine; Marguerite, shaded crimson, is a pleasing flower of excellent form. Some pretty seedlings, single varieties, were shown by Mr. D. T. Fish, Bury St. Edmunds, but they were not considered sufficiently distinct.

Mr. C. Turner had a First-class Certificate for pompon Dahlia Rubens, maroon-crimson, shaded with bright crimson—a small and attractive flower of decided merit, and had the following varieties also:—Kathleen, Innocence, much in the way of Keynes' Little Ethel—thought to be inferior to it; Juliette, yellow, tipped with orange-red; and Admiration, tipped with purple. Mr. Turner also had the following show Dahlias:—Glowworm, a bright scarlet; a reflexed flower of the W. H. Williams type; Mary Anderson, a light flower like Mrs. Gladstone; and Corsair, buff shaded with gold, the reverse pale purple. The same award to Messrs. J. Cheal & Son, for single Dahlia Queen Victoria, white, with side margins of crimson, medium-sized, and good form; and Duchess of Albany, silvery-white in the faint pink lines, and edging of orange-brown, both valuable additions to their class; to Mr. Henry Glasscock, for single Dahlia Gertrude, a charming variety, having a yellow ring round the eye, then a white zone, a broad ring of pale rosy-purple, with delicate edging of silvery-white. The same award to Messrs. Cannell & Sons, for decorative Dahlia Yellow Juarez, pale primrose-yellow, good and distinct. They also had W. T. Abery, Lillian Abery, white, with side edgings of yellow; Conspicua, white, shaded with crimson on the petal margins; Sir Trevor Lawrence, and Lady Ardilaun.

The Fruit Show.

FRIDAY and Saturday, September 7 and 8, saw the inauguration of the important Congresses on fruit cultivation which have been announced in the public prints for some few months past. It was thought by the managers of the Crystal Palace Co. that a fruit show would be an appropriate adjunct to the chief proceedings on that occasion. The quantity of exhibits brought together was very creditable, and in quality these were quite as good as could be expected. Fruit from the outside is late, and deficient in size and brightness of colour, but that from forcing and orchard-houses was very well coloured, and the bloom and finish of the numerous bunches of Grapes shown was remarkable.

The arrangements were rather puzzling, and not quite understandable. Exigencies of space, convenience of promenading may have had something to do with it; but in absence of knowledge on these points we failed to see why Grapes, for instance, should not be so placed that a comparison between the various lots were easy; and likewise the collections of fruit, which were in some instances on opposite sides of the same table, and hidden from each other by a row of tall plants, or were still further off, making comparisons in this case impossible.

Collections of Fruit (open).—In this class Mr. Goodacre, gr. to the Earl of Harrington, Elvaston, Derby, was 1st. The number of dishes shown was twenty, and comprised excellent fruits of the following kinds and varieties:—Downshire Peach, very bright, and of fair size; Oranges, Pitmans Orange Nectarine, Vicomtesse Héricart de Thury Strawberry, Alnwick Seedling, and Foster's Seedling Grapes, two Queen Pine-apples, and Negro Largo Fig, the remainder being small fruits, &c. Mr. H. Ward, gr. to the Earl of Radnor, Longford Castle, Salisbury, was awarded the 2nd place; his finest examples were—Castle Kennedy Fig, Foster's Seedling Grapes, Queen and Smooth Cayenne Pine-apples, Columbian Plum, and Stirling Castle Peach. Mr. Evans, gr. to J. S. Hodgins, Lythe Hill, Haslemere, was 3rd, but he might have stood a chance for a better position had his very fine Hamburg Grapes not been spoiled in transit; La Favorita Melon shown by him was a handsome netted variety, with a flavour said to be excellent. Only three persons competed in the above class.

For twelve dishes of fruit, Mr. A. Miller, gr., Rood Ashton Point, Trowbridge, was 1st., with fine even bunches of Black Alicante and Muscat of Alexandria Grapes; a good Smooth Cayenne Pine-apple, Peaches, Nectarines, Figs, Blenheim Orange and Rood Ashton Melons, &c. Mr. W. Pratt, gr. to the Marquis of Bath, Longleat, was 2nd., having fine Grapes, beautifully finished, and other fruit of great excellence; and Mr. H. W. Ward, Longford Castle, was 3rd.

For eight dishes there were fourteen competing

lots. The 1st prize fell to Mr. R. Parker, gr. to J. Corbett, Esq., M.P., Impney, Worcestershire. Fine fruits were observed in this collection of Princess of Wales Peach, Best of All Melons, Muscat of Alexandria, and Black Alicante Grapes. 2nd, Mr. Waterman, gr. to H. Brassey, Esq., Preston Hall, Kent—Bananas, Royal George Peaches, and Lord Napier Nectarines were well done. 3rd, Mr. C. J. Goldsmith, gr., Kelsey Manor, Beckenham, in this collection were fine Bellegarde Peaches and Newton Nectarines. Fine fruits of the true Beechwood Melon, Rood Ashton Melon, Jefferson Plums, and Stanwick Nectarine were observed in other lots.

Collections of Grapes, ten varieties.—1st, Mr. Pratt, Longleat, with Trebbiano, Black Alicante, Black Hamburg, Foster's Seedling, Gros Maroc, Madresfield Court, Muscat of Alexandria, Black Barbarossa, and Lady Downe's, these being all very good specimens of their respective varieties. Mr. H. W. Ward was 2nd, his finest being Gros Maroc, Lady Downe's Madresfield, Black Hamburg, Gros Colmar and Foster's Seedling.

Collection of five varieties of Grapes.—Here the 1st prize was taken by Mr. W. Allen, gr. to Lord Suffolk, Ganton Norfolk—Gros Maroc and Duke of Buccleuch, being remarkable for their enormous berries, and fine bloom; Black Alicante was also well finished. Mr. Osman, gr. Ottershaw, Chertsey, was 2nd.

Three bunches of Black Hamburgs.—1st, Mr. J. Taverner, gr. to Sir R. Macdonald, Bart., Woolmer Lodge, Liphook, with medium-sized, very neat bunches, the berries large and well coloured; Mr. J. Chalk, gr. to G. Read, Esq., Wilton Road, Salisbury, was 2nd—the bunches massive, colour excellent but the berries small by comparison with many others. Some very large double bunches secured for Messrs. Rivers & Sons, Sawbridgeworth, the 3rd prize. There were seven competitors.

Three bunches Muscat of Alexandria.—1st, Mr. W. Taylor, gr. to J. Chaffin, Esq., Bath, with uneven bunches, but large and compact, and not too well finished; 2nd, Mr. Pratt, whose bunches were nearly ripe, even as to size of bunches, and berries of equal size. Six competed.

Three bunches of Gros Maroc.—1st, Mr. Gleeson, gr. to the Duke of Portland, Clumber, Notts—massive, well coloured, good in every point; 2nd, Mr. W. Taylor, very large, weight of best bunch was probably 7 lb., long, symmetrical, but had too little finish; 3rd, with Mr. W. Allan, with middling bunches. Nine competed.

In the next class—that for Madresfield Court—the competition was much less, there being only three entries. Here Mr. W. Taylor got the best position with fine bunches; Mr. J. H. Goodacre with bunches of better colour than Taylor's, was 2nd; 3rd, Mr. J. Bury, gr., at Tewkesbury Lodge, Forest Hill, with bunches, which, if they had been better coloured, would doubtless have taken a higher place.

The class for Black Alicantes was better filled than the preceding one, seven gardeners competing. 1st, Mr. Hollingsworth, gr., Woodseat Uttoxeter, with bunches of massive proportions, and deficiency in no good point; Mr. W. Taylor, larger bunches, but as with all Mr. Taylor's exhibits of Grapes, deficient in colour; 3rd, Mr. C. Griffin, gr. to Miss Christy, Coombe Bank, Kingston-on-Thames, excellent specimens but of medium size.

Three bunches of any other white Grapes.—For this competition we counted eight entries: 1st, Mr. F. Lee, gr. to Mrs. Lyne Stephens, Lynford, Norfolk, with bunches of Buckland Sweetwater, caught at the right time, and of goodly proportions; 2nd, Mr. Bury, Forest Hill, with Foster's Seedling; Mr. Hollingsworth taking 3rd, with Trebbiano.

Mr. W. Allen showed some very large-berried bunches of Duke of Buccleuch, but not of sufficient ripeness to count.

Three of any variety of black Grapes, seven entries.—1st, Mr. Goodacre, with finished Alnwick Seedling; 2nd, Mr. L. Jennings, gr., Forest Lodge, Farnborough; and Mr. F. Lee 3rd, with the same variety.

Black Grapes were likewise shown in 12 lb. basket, with what object it is not clear, as Grapes are never served up in this way outside a vineyard, and there was no evidence of methods of packing for carriage by road or rail. Mr. J. Bury was placed 1st with Alnwick Seedling—very excellent fruit; Mr. W. Taylor, 2nd, with the same variety; and Mr. Taverner, 3rd, with Black Hamburg. Alnwick Seedling was mostly shown by the other ten competitors.

For the same quantity of white varieties, seven competitors entered.—1st, Mr. G. Duncan, gr. to C.

T. Lucas, Esq., Warnham Court, Sussex, with Muscat of Alexandria; 2nd, Mr. W. Lane, King's Ride, Ascot, with the same variety in a ripe state, which none others were.

The class for six dishes of distinct varieties of Peaches brought numerous entries, most of which were of fair size and good color, but had the appearance in most instances of having been ripened on trees under glass. The 1st prize was awarded to Mr. Divers, Ketton Hall, Stamford; 2nd, Mr. Goodacre, Elvaston Castle, Hall; 3rd, Messrs. T. Rivers & Sons.

For the same number of dishes of Nectarines the winners were respectively Messrs. J. Douglas, Ilford; C. Duncan, Warnham Court; and J. Bury, Forest Hill.

Single dishes of Peaches and Nectarines, small collections of Plums, Figs, and Melons, brought much competition.

A very nice collection of twelve dishes of Apples came from Mr. Waterman, Preston Hall, some of which must be classed as the best in the show. These were Peasgood Nonsuch, Lady Henniker, Stirling Castle, and Ecklinville. Mr. Butters' Sittingbourne took the 2nd prize.

For three dishes of ripe Apples, 1st, Mr. Waterman, with Red Astrachan, Duchess of Oldenburgh, and Worcester Pearmain; 2nd, Mr. Miller, gr. to J. J. Friend, Esq., Northdown, Margate, with Lady Studly, Red Astrachan and Irish Peach. Other early varieties shown in this competition were Transparent White, Quarrenden, Reinette du Laak and Ecklinville Seedling. In a similar competition for the best ripe Pears, 1st, Mr. J. Butters, with Beurré d'Amanlis, B. Goubalt and Windsor; 2nd, Mr. Waterman, with the first and last in the first-named lot and Bon Chrétien.

The highest prize for a collection of ten varieties of Pears fell to Mr. McIndoe, Hutton Hall, Guisborough. Clapp's Favourite, Beurré Diel, Pitmaston Duchess, Brockworth Park, and Durondeau were his best. The 2nd fell to Mr. Butters, whose fruit was, as usual, of a high colour and fair size.

Miscellaneous.—Some very fine Duke of Buccleugh Grapes were shown by Mr. Thomson, Clovenfords, to show the effect of his Vine manure on size of berry.

Fruit trees in pots were exhibited by Messrs. T. Rivers & Sons, Sawbridgeworth, consisting of Peaches, Nectarines, Cherries, Plums, Pears, Apples, Grapes, &c.

Mr. C. Ross, Wilford Park, put up six fruits of Smooth Cayenne Pine-apple of varying degrees of ripeness. Vicomtesse H. de Thury Strawberries came from W. Allan, excellent for the season. Mr. F. Muller showed Cherries and Plums. Mr. Evans, of Lythe Hill, Isabella Grapes, and Easter Pippin of the season 1887.

A considerable collection of fruits of various kinds were contributed by Mr. J. Peed, nurseries, Streatham, and some of it was very good for the season, and the soil of that part. Legea, a small tender-flashed French Apple, introduced by Scott, of Yeovil, was found amongst the sorts shown.

Mr. W. Taylor, Osborne's Nursery, Hampton, showed Apples and Pears in pots, and some dishes of fine culinary Apples; Messrs. G. Bunyard & Co., Maidstone, exhibited fruiting branches of Plums, Damsons, besides twenty-two dishes of Plums, and 100 of Apples and Pears; Messrs. Cheal & Sons, Crawley, had a small and select collection of Apples; Messrs. J. Laing & Sons, Stanstead Nurseries, Forest Hill, exhibited very vigorous fruitful Apple trees, taken from the open ground.

Mr. C. J. Waite took the 1st prize for a collection of six varieties of Tomatoes, and Mr. C. J. Goldsmith the 2nd. Many varieties were exhibited by the various competitors, and chiefly of the Perfection type. Silver's Golden Queen is a fine looking yellow fruit.

Plants.—These were found chiefly in several large groups of early dwarf Chrysanthemums, the majority of which were yet hardly well bloomed, and not being attractive were apparently objects of indifference. The 1st prize was awarded to a stiff group of plants from Messrs. Davis & Jones, Camberwell; by Mr. W. Piercy, Forest Hill, coming next; and Mr. G. Miles, Brighton, was 3rd, G. Wermig, primrose-coloured, being the chief feature in this collection.

Cockscombs were largely staged. The best six plants—remarkably fine, rich coloured, and even—were from Mr. Lockie, Messrs. Cheal being 2nd, with good heads; and Mr. Spink, Horley, was 3rd.

Messrs. J. Laing & Son, Forest Hill, staged a huge semi-pyramidal group of their fine Begonias, which suffered somewhat from a bad background, although

effectively dressed with graceful Palms; and Messrs. J. Peed & Sons, in addition to various cut flowers, had a lot of very fair Anthurium Scherzerianum in pots, carrying numerous spathes.

Cut Flowers. These formed a more attractive feature. The large collection of Gladioli from Messrs. Kelway & Sons, of Langport, and from Messrs. J. Barnell & Co., Cambridge, were of exceeding fine quality, but indication of the choicer varieties is out of the question here. The latter firm only competed in the class for large collections, and were awarded the 1st prize. Only two amateurs—the Rev. H. D'Ombrian, Westwell Vicarage, Asford, and Mr. E. W. Weston, Calne—competed in the class for eighteen spikes, the former, who was placed 1st, having capital flowers, which showed that amateurs may do this fine autumn flower well. Mr. E. Jones, Bath, had the best twelve spikes; Mr. H. Apthorpe, Cambridge, being 2nd. Hollyhocks, in single blooms, were in but moderate form, the best flowers being found in the twenty-four from Messrs. Webb & Brand, the successors to Mr. Chater, of Saffron Walden.

Mr. Apthorpe had the best twelve blooms; Mr. Blandford, of Dulwich, being 2nd.

Asters made a better show. Although not up to the usual mark, many of the flowers, especially the quilled kinds, showing the effects of the rain appreciably.

Of French or flat-petalled kinds there were fourteen collections of twenty-four blooms, the best being a clean lot from Mr. Jones, of Bath, but rather wanting in variety of colour, blue tints predominating; these were all Victorias; whilst the 2nd lot, which came from Messrs. Saltmarsh & Sons, Chelmsford, was varied, and had capital incurred and Peony-flowered forms. Mr. Waller, Calne, was 3rd, with Victorias.

Messrs. Saltmarsh were 1st, with the best twenty-four quilled Asters, rather wanting in size, but fairly clean; Mr. Waller coming 2nd.

Mr. Glascock, Bishop's Stortford, exhibited a large reflexed Aster in quantity, the flowers being red, with white stripes or edges, the petals rather long and narrow, but, on the whole, rather wanting in fulness.

Stove and greenhouse flowers made a prominent feature, three collections, comprising some twelve bunches, being shown; that placed 1st, from Mr. Prewett, Hammersmith, consisted of sixty sorts, and included several good Orchids, Begonias, Dipladenias, Lapagerias, and other choice flowers. Mr. A. Gibson, gr. to J. A. B. Atkins, Esq., Sevenoaks, was 2nd, with thirty bunches; and Mr. H. James, Norwood, was 3rd.

Amongst various honorary collections were capital lots of cut double and single zonal and Ivy-leaved Pelargoniums, finely set up; some pretty Cactus Dahlias, and some charming Godetias, from Messrs. Daniels & Sons, Norwich.

Messrs. Paul & Son, Cheshunt, showed numerous boxes of Roses, and a large variety of hardy flowers. Mr. E. Such, Maidenhead, showed a fine collection of border flowers in bunches. Messrs. Kelway had good Gaillardias and Delphiniums; and Messrs. Dobbie & Sons, Rothesay, had fine French and African Marigolds, Violas, and other pleasing flowers of excellent quality.

NATIONAL CHRYSANTHEMUM: SUMMER SHOW.

ROYAL AQUARIUM, Sept. 12 and 13. This was a great improvement on the show held a twelvemonth ago, Chrysanthemums being very numerous and fine for the season of the year, and Dahlias were in admirable condition, of better quality than at the Crystal Palace, and Mr. C. Turner was in very fine form, taking off the 1st prizes for forty-eight, thirty-six, and twenty-four blooms; while in nearly every class there was a remarkably good competition.

Chrysanthemums, Plants.—The best group of plants to fill a space not exceeding sixty square feet was fine, Mr. J. H. Witty, Highgate Cemetery, who had a good lot of well-grown and bloomed plants, finished off with an edging of Ferns, the leading varieties being Golden Fleece, Madame Desgranges, Mr. G. Wermig Blushing Bride, Chromatella, Alice Butcher, Mdlle. Leonie Lasalia, &c. Mr. H. Neary, gr. to the Rev. Mr. Powell, Hornsey, was the only exhibitor of twelve plants, having six well-grown and bloomed trained specimens, each of Madame C. Desgranges and Mr. G. Wermig.

Chrysanthemums, Cut Flowers. In the class for collection of cut blooms, Mr. T. S. Ware, Hale

Farm Nurseries, Tottenham, had a very good collection of over thirty varieties in double that number of bunches, the leading varieties being St. Crout's Nanum, Piercy's Seedling, Précocité, Hibernia, Blanche Colomb, Early Blush, La Vierge, Flora, Madame C. Desgranges, M. Jolivat, Mrs. Pilcher, Blushing Bride, Mrs. Burrell, Mdlle. L. Lasalia, Toreador, Petillant, Mrs. Cullingford, Fred. Pile, Canari, Mr. G. Wermig, and St. Mary. 2nd, Mr. R. Owen, Floral Nursery, Maidenhead, whose leading varieties were:—M. W. Piercy, Flora, M. Jolivat, Toreador, Fanchette, Canari, and Madame Domage. An extra prize was awarded to Mr. George Stevens, St. John's Nursery, Putney.

Mr. J. Blackburn, gr. to J. Scott, Esq., Chislehurst, had the best twelve blooms of Madame C. Desgranges, very fine indeed; Mr. J. Hudd, gr. to F. W. Price, Esq., Blackheath, being 2nd. Mr. H. Elliott, gr. to Mrs. L. Harrison, Leydon House, Mortlake, had the best twelve blooms of any other variety or varieties, staging twelve fine ones, of Mr. G. Wermig; Mr. A. D. Clarke, gr. to W. Brand, Esq., Finchley, being 2nd, with good blooms of Elaine, General Gordon, Chang, Sam. Henshaw, Mona. G. Wermig, &c.

Mr. J. H. Witty, was the only exhibitor of twelve bunches of pompon varieties, three trusses of each, having Golden Fleece, Mrs. Cullingford, Alice Butcher, Nanum, Madame Picot, Blushing Bride, Lyon, Souvenir d'un Ami, Frederick Pile, Précocité, &c.

Mr. W. Scott, 7, Ifield Place, South Kensington, had the best six bunches of Madame Desgranges, set up in bunches of three blooms; Mr. J. Hudd, gr. to F. W. Prior, Esq., Gordon House, Blackheath, being 2nd.

The best six bunches of any other kind, except Madame Desgranges, came from Mr. J. Doughty, gr. to Mrs. M. Timlin, Angle Park, Cranbrook, Kent, being 2nd.

Miscellaneous.—Gladioli were well shown by J. Burrell & Co., nurserymen, Cambridge; show Dahlias by Mr. C. Turner, Slough; Messrs. Keynes, Williams & Co., Salisbury. Pompon Dahlias were plentiful and very good, Mr. C. Turner exhibiting the best, and Messrs. Cheal & Son, Crawley, the second best of twenty-four bunches; Messrs. Cheal taking the 1st prize for twenty-four bunches of single Dahlias. Mr. E. Such, florist, Maidenhead, had the best collection of decorative Dahlias of the Juarez type. The Silver Gilt Medal of the Society was awarded to Messrs. J. Laing & Co., Stansted Park Nurseries, Forest Hill, for a very fine group of variegated stove plants, Begonias, &c. Silver Medals to Mr. T. S. Ware, for Dahlias and hardy plants; and to Mr. H. Cannell, for Dahlias and Cannas, both groups greatly helping the show; also to Mr. A. W. Gordon, Twickenham, for a very fine group of Lilies. A Bronze Medal was awarded to Mr. E. F. Such, for an interesting collection of bunches of hardy flowers. A collection of apples from Messrs. B. Peed & Sons, nurserymen, Streatham; and also of fruiting trees in pots, and dishes of Apples from Mr. A. Taylor, florist, Hampton, were commended.

Vegetables.—Prizes were offered by Messrs. H. Deverill & Co., Banbury, for the best twenty pods of Neal's Ne Plus Ultra Runner Bean, a very good lot being shown. Mr. G. H. Richards, Somerley Gardens, Ringwood, was 1st; and Mr. Waite, Glenhurst, Esher, 2nd. Also special prizes were offered for Middleton Park Beet, Deverill's Scarlet Horn Carrot, and Scarlet Intermediate Carrot, six of each being shown. Here Mr. H. Pope, The Gardens, Highclere, Newbury, was 1st, and Mr. Waite 2nd.

The Floral Committee.—A meeting was held at the Royal Aquarium on the 12th inst., Mr. E. Sander-son in the chair, there being a good attendance of members. An orange-coloured sport from Chrysanthemum Précocité, shown by Mr. H. W. Pilcher, Surbiton, was Commended. First-class Certificates were awarded to Chrysanthemum Mr. Bennett, a golden sport from Mr. G. Wermig, from Messrs. Hawkins & Bennett, Twickenham; and to Fanchette, a pretty and useful pompon, warm pink, with a silvery tip and reverse, very free, from Mr. R. Owen, Maidenhead, who also received a Commendation for Canari, a pure yellow early flowering pompon, small, fine, shape and very free; and First-class Certificate for double Ivy-leaf Pelargonium, Robert Owen, rich bright carmine, very double and forming a bold truss; and for a fine single variety named Victorious, pale bright salmon-cerise, very large bold truss. To Chrysanthemum Mr. J. Pitcher, an early flowering incurved white variety, shown by Mr. J. P. Kendall, Roehampton. The same award was made to the following Dahlias:—The Mikado (single), from Mr. T. W. Girdlestone; Gertrude (single), from Mr. H.

Glasscock; Miss Ramsbottom (single), from Mr. T. S. Ware; to Victoria (single), from Messrs. J. Cheal & Sons; and to pompon, Fairy Tales, Little Ethel, and Little Darkie, from Messrs. Keynes, Williams & Co., and to decorative Dahlia Panthea, from the same. To Mr. C. Turner for pompon Dahlia Admiration, red, tipped with white; to the Messrs. Dickson & Sons, Chester, for Carnation, Mr. Reynolds Hole; to Mr. Frank Glasscock, Bishops Stortford, for Asters Comet and Triumph, the latter a deep chestnut crimson-coloured flower of the Paeony type; to Mr. R. Dean, for Mimulus moschatus ruber; to Messrs. J. Burrell & Co., for Gladioli, Mr. Lindsill and Phyllis; and to Mr. J. T. West, for decorative Dahlia, Beauty of Brentwood, bright purple.

NEWTOWNARDS HORTICULTURAL.

This enterprising Society held its thirty-third annual show on the 6th inst. in the grounds reserved for it in the nursery of Messrs. Alexander Dickson & Sons, Newtownards. It is the most flourishing horticultural society in Ireland, and enjoys the patronage of the nobility and gentry over a wide and prosperous district. Few horticultural societies in the United Kingdom are favoured with a more practical business-like and energetic committee and secretary. Every detail is well conceived and carried out by them. Few, if any other provincial society, can boast of owning the whole plant requisite to the carrying through of every detail in connection with a flower show of the extent of that at Newtownards. It is substantial evidence of the excellent financial condition of this Society that it owns the several large marquees and smaller tents and everything else required in its annual operations.

The prize schedule comprised 279 classes in six sections, viz., plants in pots, cut flowers, fruits, and vegetables, roots and cereals, and butter, eggs, and honey. The first four sections are divided into subsections for amateurs who keep a gardener, amateurs who do not keep a gardener, nurserymen, and cottagers. The nurserymen's subsection appears only in the first and second sections. The entries in all reached to the total of about 1200. A special feature in the schedule appears in the cottagers' classes for plants in pots, cut flowers, fruits, and vegetables, being a set of prizes offered by the Irish Peasantry Society of London, amounting to nearly £20 in all, so divided as to encourage the peasants of the district to improve the vegetable and fruit products of their gardens especially, and also their taste in the culture and management of flowers.

The show was altogether good alike as regards quality and quantity, though it was said to be inferior to preceding ones. The weather for the first time in the course of the thirty-three years' record of the Society, was somewhat unfavourable on the day of the show, but did not prevent the public of all classes attending in thousands, the day being regarded as a district holiday, and duly taken advantage of.

Pot plants were well represented in all the sections, and were well cultivated and numerous. In the first sub-section—amateurs who keep a gardener—S. Black, Esq., Glen Ebor (gr., Mr. R. Bissett), and G. Wolff, Esq., The Dew gr., Mr. W. A. McLroy, took 1st and 2nd prizes respectively in the class of ten stove and greenhouse plants, not less than three in flower. In six stove or greenhouse plants, two in flower, John Mulholland, Esq. (gr., Mr. Crane), took the 1st place. For six stove or greenhouse plants in pots, not exceeding 10 inches, S. Black and G. W. Wolff again divided honours in their order. A table of plants was contested for by the last two gentlemen with the same result; and in the competition for six exotic Ferns they held the same relative positions, and again also in the competition for two Palms they were in the same order. Four very superior Cockscorns came from A. M. Kirker, Esq., Craigavad (gr., Mr. Wm. Watson), which were deservedly awarded 1st prize.

The productions in pot plants of amateurs who do not keep a gardener were numerous and good. Ivy-leaved Pelargoniums were splendidly shown by Dr. Henry, of Comber, who took 1st prize. The collections of greenhouse were numerous, the best coming from Israel McHenry, Lisburn, and J. W. Ritchie, Comber. The best zonal Pelargoniums were tabled by the last named competitor, as were also the best show Pelargoniums, two Coleus, the best Lily of any variety, and the best three Balsams. W. S. Johnston took 1st honours in the class of one Lilium auratum. Mr. Hugh Gordon beat all comers in two

pots of Mignonette, and W. S. Johnston excelled all in tuberous Begonias.

In the nurserymen's classes for plants in pots, Messrs. Alexander Dickson & Sons, Newtownards, and Mr. Hugh Dickson, Belmont Nursery, had the competition between them. The latter took 1st prize in the competition for a group of stove and greenhouse plants, which was composed of a well-grown, well-coloured lot of foliage plants, including a grand specimen of Cycas circinalis and flowering plants, among which were some capital Orchids, Begonias, Lapageria alba, Ericas, Bouvardias, &c., set up with fine taste. Messrs. Alexander Dickson & Sons' group was also a good one.

Cut Flowers.—These, taking the season into account, were numerous, but space will not admit of our particularising closely the different exhibits. Dr. Dunlop, Holywood, was the principal prize-taker among Dahlias and Roses in the section "Amateurs who keep a gardener," and Mr. Kirker, Craigavad, who took the 1st prize for the largest class of Dahlias, viz., twenty-four blooms, carried off also first honours for eighteen gladioli, and other important prizes.

African and French Marigolds were very good, which is rather a rare occurrence this season. The best of the former came from Dr. Dunlop, and of the latter from Mr. Kirker.

In the nurserymen's section, cut flowers, the competition was divided between Messrs. A. Dickson & Sons and Mr. Hugh Dickson, and the honours were keenly contested, both sustaining their well-earned fame as Rose and Dahlia growers.

Fruit.—The exhibits were scarce, and below the average in quality as regards hardy kinds, but there were some excellent examples of Grapes, Peaches, Nectarines, and Plums. The best Grapes came from Lord O'Neill, Shane's Castle, Antrim (gr., Mr. C. Warwick), who took 1st honours for six bunches, in four varieties, and in two bunches of black Grapes. R. E. Ward took the 1st position in the competition for Black Hamburgs, and G. W. Wolff for white Grapes. R. E. Ward was 1st in Peaches, and also in Nectarines and Figs.

The cottagers' classes were well represented, the productions in every case being of high merit, and the same be said of the field produce.

SCOTLAND.

GLASGOW AND WEST OF SCOTLAND HORTICULTURAL.

THE autumn show of this Society was held in the Grand Hall and in several tents in the International Exhibition grounds, Kelvin Grove, Glasgow, on the 12th inst. The show was worthy of the metropolis of the West of Scotland, and a credit to the committee of the Society.

Fruit was a conspicuous feature, and some of the leading prizetakers at the Royal Caledonian show of last week were among the most successful here also; indeed, in not a few of the departments the successful competitors at the show in the East have again distinguished themselves in the West.

The Grand Hall.—The plants and fruit here set up made an imposing picture; the latter was ranged on the side tables, and three tables running the entire length were occupied with plants for competition and exhibition.

Groups.—The orchestra was decorated with a collection of foliage and flowering plants from the Botanic Gardens, Glasgow, set up with good taste by Mr. Bullen. Space forbids particularising the many interesting and beautiful foliage plants, but we must mention a plant of *Lissochilus giganteus*, with a fine spike of flowers.

The large space surrounding the throne used by the Queen, was decorated by Messrs. Little & Ballantyne, Carlisle, with a group of foliage plants—such as Crotons and Dracænas, as regards colour and superior culture have never before been seen at any show in Scotland. Many other varieties of foliage plants contributed to the elegance and interest of the group, each in its kind being perfect.

Messrs. Smith & Simmons had good exhibits of stove and greenhouse plants—both flowering and foliage; and Messrs. Austin & McAslan occupied a similar space on the right-hand tables at the western end of the hall.

Immediately below the Botanic Garden exhibits were placed the only two groups entered for the first class in pot plants, viz., a group of miscellaneous plants arranged for effect on a space not exceeding 300 square feet. The 1st prize went easily to Messrs. I. & R. Thyne, with stove and greenhouse plants, which included well coloured Crotons and Dracænas, Lilliums, Pancratiums, Statice, Begonias, &c., relieved with Cocos and other Palms; 2nd, Mr. Jas. Bryson, Parkhead Nursery, Helensburgh.

In the open classes of six stove and greenhouse plants in flower Mr. Hugh Millar, Auchendraith, Bothwell, was 1st, with *Phenocoma Barnesii* and *Lapageria alba* as conspicuous subjects in his collection; 2nd, Mr. Hegg, Aitkenhead, Cathcart, with an excellent lot.

For six stove and greenhouse plants (foliage plants), Mr. Raeside, Dumbarton Road, Glasgow, was 1st; and Mr. Matheson, Westbank, Partick, 2nd—both very good groups.

Six exotic Ferns.—1st, Mr. Neil, Greenhead Street, Newmilns; Mr. McIntyre, Darlington, 2nd.

Three Ericas in flower.—1st, Mr. Neil; 2nd, Mr. Boyes, Burnpark, Uddington.

Three specimens, Orchids in flower, Mr. Wilson Westmount, Kelvinside, 1st; Mr. D. Paton, Milrig, Galston, 2nd.

Six Pitcher plants.—1st, Mr. Sutherland, Lenzie 2nd, Mr. Hogg.

Twelve table plants, foliage.—1st, Mr. McIntyre 2nd, Mr. Agnew, Ascog, Bute.

Six table plants in flower.—1st, Mr. Grossart, Oswald House, Oswald Road, Edinburgh; 2nd, Mr. Sutherland.

Dinner-table decorations were numerous, the first going to Mr. Donald McIntyre.

Cut Flowers were numerous and excellent. Dahlias perhaps not so good as usual. The best in the open classes came from Mr. Boston, Carthorpe, Bedale, Yorks. The best single Dahlias were tabled by Mr. Walker, florist, Gateshead, Low Fell. The finest Hollyhocks, both blooms and spikes, were put up by Mess. Kerr & Sons, Kalemouth, Roxburgh; and these were superior to anything of the kind recently seen in Scotland. The 1st prize lot of twenty-four Gladioli came from Messrs. McGrady & Son, Portadown, though they were very closely pressed by those tabled by Mess. Alex. Dickson Newtownards.

Roses.—The 1st prize twenty-four were shown by Messrs. Cocker & Sons, Aberdeen; Messrs. Croll, Dundee, making a good 2nd.

Pansies: Show Varieties.—Of these the best twenty-four came from Mr. Sutherland, Lenzie; as did also the best twenty-four fancies.

Carnations and Picotees.—In these Mr. Campbell, High Blantyre, took the 1st position with very fine examples.

Baskets and Bouquets of Flowers.—In all classes of these Messrs. Perkins & Sons, Coventry, had it all their own way. Owing to pressure of space, it is impossible to deal with the remaining classes of cut flowers in detail.

Vegetables.—These were very fine, and competition was keen and close, especially in collections, the 1st prize for which falling to Mr. D. McBean in the gardeners' class, and to Mr. James Kidd in the amateurs' class.

A special prize of £10 for ten stove and greenhouse plants was taken by Mr. Sutherland; Mr. Grossart being 2nd.

There were many exhibits from nurserymen and florists.

Messrs. Dobbie & Co. had fine display of their specialties, such as Dahlias, Marigolds, and choice selections of vegetables.

Mr. Kerr, Dumfries, a numerous collection of Potatoes.

Messrs. Munro & Ferguson, Edinburgh, had a collection of hardy herbaceous plants, including their new *Matricaria inodora* fl.-pl. Snowflake, which received a First-class Certificate.

Messrs. Cocker & Sons, Aberdeen, had a splendid

mass of Roses, Tea and H.P., and herbaceous cut flowers.

Mr. Lister, Rothesay, sent Pentstemons, Antirrhinums, Gladioli, &c.

Laing & Mather had hardy cut flowers, and their new Carnation R. H. Elliot.

Fruit: Grapes.—These were in great force, and the chief point of interest was in the competition for the Veitch Memorial Medal and £5, for which two bunches black and two bunches white Grapes were required. Mr. McHattie, Newbattle, Midlothian, carried off the coveted prize easily, with splendid examples of Muscat of Alexandria, Duke of Buccleuch, Madresfield Court, and Black Hamburgh; Mr. Day, Galloway House, Garlieston, was a good 2nd; and Mr. Barrie, gr. to G. T. Couper Esq., Row, was 3rd.

In the class of eight bunches, four distinct, Mr. McKinnon, Melville Castle, was a good 1st, with fine Gros Marec and Black Alicante as the most meritorious examples; Mr. McKelvie, Broxmouth Dunbar, being a good 2nd. Two bunches Black Hamburgh brought Mr. McHattie again to the front with Mr. McKinnon 2nd. Two bunches Black Alicante placed Mr. McKinnon 1st, with superb bunches, and Mr. McConnochie, Cameron House Alexandria, 2nd. Two bunches Gros Colmar placed Mr. Murray 1st. Two bunches White Muscat brought superb examples in from Mr. McHattie; and Mr. McKinnon took 1st in two bunches of any sort with beautiful examples of Golden Hamburgh. The heaviest bunch, a White Syrian, was shown by Mr. Murray, and weighed 20 lb.

The collection of sixteen dishes of fruit was keenly contested, the 1st prize falling to Mr. Boyd, Callendar House, Falkirk; eight dishes was equally well contested, the victor being Mr. McKelvie. Collections of six dishes of hardy fruit, though somewhat numerous, were unequal, Mr. Fairgreive, Dunkeld, distancing all his opponents easily.

Pines made a poor show, the best Queen coming from Mr. Grossart, Oswald House; and the best Smooth Cayenne from Mr. McIntyre, The Glen, Innerleithen.

Melons were few, the best green-fleshed being tabled by Mr. McIndoe, and the best scarlet-fleshed by Mr. Weir, gr. to Sir R. Cunliffe, Acton, Wrexham.

Peaches.—The best twelve came from Mr. McIndoe and the best six from Mr. Wilson, Auchencuive, Ayr.

Nectarines.—Mr. McIndoe again tabled the first twelve, and also the best six *Apricots*.

Figs.—In these Mr. McHattie was an easy 1st.

Plums, twelve Green Gage.—Here Mr. McIndoe was a good 1st. Mr. Wilson was best in light twelve Plums of any other sort; and Mr. Gallagher, Kilkerran Gardens, Maybole, took the lead in red or purple Plums.

Pears grown under glass were best, presented by Mr. McIndoe; and from the open air by Mr. Day. The best Jargonelles came from Mr. McDermott, Alva House, Alva.

Apples (dessert, grown under glass).—The finest twelve came from Mr. McIndoe; the best twelve, grown in the open air (dessert), from Mr. Wilson; and the best twelve kitchen from Mr. Boswell, Albert Place, Stirling.

Cherries.—The best fifty were put up by Mr. Fairgrieve.

NORTH OF SCOTLAND APIARIAN SOCIETY.

The annual show, under the auspices of this Society, was brought to a close in the Duthie Park, Aberdeen, on the 1st inst. There were twenty-three classes in the show, and a number of entries were made in each. This year, however, the entries numbered scarcely more than half of those of last year, owing to the ungenial weather. For some time past, bees in the northern districts rarely had an opportunity of getting out, and in consequence many of them died, while, in most cases, they lived on stock honey, and had, moreover, to be fed. Consequently the exhibition was meagre in all depart-

ments, except that for bee furniture, of which there was a good display. A new feature, introduced this year, was the "driving" competition, which consists in driving the bees from a straw hive into a wooden one, at the same time catching and exhibiting the queen—the operation being performed by the competitor with unprotected hands and person. In this competition, Mr. Richard McGregor, Inchmarlo, Banachory, carried off the 1st prize, and was, in addition, awarded a Third-class Expert Certificate for proficiency in apiculture. The show was opened by the Rev. Mr. Innes, Free Church, Skene, Aberdeenshire, President of the Society, in presence of a large audience.

THE BOTANIC GARDEN, GLASGOW.

A few days ago I had the great pleasure of visiting Mr. Bullen at the Botanic Garden, Glasgow, and getting a look round the very fine and extensive collection of plants under his care. As a whole I never saw the collection look better, notwithstanding the many difficulties he has had to contend with, having his staff reduced to the lowest possible number, and the gardens closed to all and sundry. I find the only means of getting an entrance is to write to Mr. Bullen, that he may send a man to open the gate. Amongst the Orchids how astonished I was to find the rare and beautiful *Lissochilus giganteus* in bloom, and still more struck with it because I was led to believe that all the plants in Europe did not amount to half-a-dozen, while here was a large plant with several flowering growths, and I proud of having charge of one small lead! The whole plant corresponds exactly with the description given of the one flowered by Sir Trevor Lawrence in May last, described and figured in the *Gardeners' Chronicle* May 19, p. 616, except that the lip is not purple, but merely a deeper shade of rose than the petals, and without the darker stripes in the figure. It is a grand Orchid, a free grower, and will be easily managed. As we passed on it struck me as a great pity, as well as a loss to horticulture, that so many fine things should be left to bloom there unseen, unknown, and almost unheard of. *Robert Todd, Woolton Wood, Liverpool.*

THE WEATHER.

MEAN TEMPERATURE OBSERVED AT CHISWICK DURING THE WEEK ENDING SEPT. 22. (AVERAGE OF FORTY-FOUR YEARS.)

Sept. 18	57°·6	Sept. 20	56°·9
" 17	57°·3	" 21	56°·7
" 18	57°·2	" 22	56°·6
" 19	57°·1	Mean for the week	57°·1

THE PAST WEEK.

The following summary record of the weather for the week ending Sept. 10, is furnished from the Meteorological Office:—

"The weather has continued rather unsettled in parts of the kingdom, with occasional falls of rain. Thunderstorms occurred over central and eastern England on the 7th, and on the 9th thunder and lightning were prevalent at many of our southern and eastern stations.

"The temperature has again been below the mean, the deficit ranging from 2° to 4°. The highest of the maxima were recorded either on the 4th or 5th, when the thermometer rose to between 64° and 69°. The lowest of the minima, which were registered towards the end of the period, ranged from 30° to 34° in Scotland, 34° to 35° in Ireland, and from 33° to 43° over England.

"The rainfall has about equalled the mean in 'England, N.E.,' but in all other districts it has been less; the deficit being most marked in the 'grazing districts,' and the east of Scotland.

"Bright sunshine has been more prevalent than it was last week in Scotland, the south of Ireland, the south-west of England, and the 'Channel Islands,' but in nearly all other districts a decrease is shown. The percentage of the possible amount of duration ranged from 21 in 'Ireland, N.,' to 44 in 'Ireland, S.,'

45 in 'England, S.W.,' and 56 in the 'Channel Islands.'"

[Accumulated temperature indicates the combined amount and duration of the excess or defect of temperature above or below 32° F. for the period named, and is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.			
	Above or below the Mean for the week ending Sept. 10.	ACCUMULATED.		
		Above 42° for the Week.	Below 42° for the Week.	Above 42° difference from Mean since Jan. 3, 1888.
		Day-deg.	Day-deg.	Day-deg.
Principal Wheat-producing Districts.				
0. SCOTLAND, N. ...	3 below	57	0	— 236 + 201
1. SCOTLAND, E. ...	3 below	64	0	— 418 + 157
2. ENGLAND, N.E. ...	2 below	79	0	— 439 + 73
3. ENGLAND, E. ...	3 below	95	0	— 355 + 154
4. MIDLAND COS. ...	4 below	83	0	— 424 + 150
5. ENGLAND, S. ...	3 below	97	0	— 459 + 204
Principal Grazing, &c., Districts.				
6. SCOTLAND, W. ...	2 below	73	0	— 311 + 107
7. ENGLAND, N.W. ...	3 below	82	0	— 344 + 117
8. ENGLAND, S.W. ...	4 below	83	0	— 442 + 264
9. IRELAND, N. ...	3 below	79	0	— 275 + 67
10. IRELAND, S. ...	3 below	83	0	— 260 + 113
— CHANNEL ISLANDS	3 below	106	0	— 334 + 154

DISTRICTS.	RAINFALL.		BRIGHT SUNSHINE.	
	More or less than the Mean for the Week.	No. of Rainy Days since Jan. 3, 1888.	Total Fall since Jan. 3, 1888.	Percentage of possible Duration for the Week.
Principal Wheat-producing Districts.	Tenths of Inch.		Ins.	
0. SCOTLAND, N. ...	3 less	164	26.6	22
1. SCOTLAND, E. ...	6 less	145	20.6	32
2. ENGLAND, N.E. ...	0 (aver.)	135	19.6	28
3. ENGLAND, E. ...	2 less	139	18.6	24
4. MIDLAND COS. ...	2 less	126	18.3	31
5. ENGLAND, S. ...	3 less	128	19.1	36
Principal Grazing, &c., Districts.				
6. SCOTLAND, W. ...	8 less	137	29.2	34
7. ENGLAND, N.W. ...	4 less	138	20.6	30
8. ENGLAND, S.W. ...	6 less	142	24.3	45
9. IRELAND, N. ...	4 less	144	25.8	21
10. IRELAND, S. ...	7 less	130	25.7	44
— CHANNEL ISLANDS	5 less	154	20.7	56

NOTICES TO CORRESPONDENTS.

INTELLIGENT READERS, do PLEASE NOTE that letters relating to ADVERTISEMENTS, or to the supply of the Paper, should be addressed to the PUBLISHER, and that all communications intended for publication, as well as specimens and plants for naming, should be addressed to the EDITOR. Such communications should be written on one side only of the paper, and sent as early in the week as possible. Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

ARALIA VEITCHI: A. H. B. This plant is difficult to root, and is usually grafted very low down on *A. reticulata*, cuttings of which strike readily. The grafting may be done at almost any time of the year if you are provided with a close-fitting

propagating case, or box, but the early spring is the better time, employing young ripened wood for the scion. Grafting-wax should be used to exclude water from the parts operated on.

Books: *O. S. The Orchid Manual* (B. S. Williams); *Reichenbachia*; the *Orchid Album* (B. S. Williams and R. Warner); *Veitch's Manual of Orchidaceous Plants* (J. H. Veitch); *How to Lay Out a Garden* (E. Kemp); *Landscape Gardening* (T. London).

CARNATIONS DISEASED: *Carnation.* Your examples represent a very bad case of disease as caused by the minute eel-worms, or nematodes, described and illustrated in the *Gardeners' Chronicle* for December 3, 1881, p. 721. The nematodes infest every part of the interior of the plants, from the roots to the leaf-tips. We found but few in your leaves, as the worms had mostly escaped, but the roots and stem-bases were swarming with eel-worms. The wet season has been very favourable for nematodes. They are easily destroyed by any slightly corrosive solution, or by a solution of quinine, but it is almost impossible to apply any remedy, as the nematodes live within the plants affected. They often swarm in the soil, but the soil again acts as a filter to liquid remedies, and the worms live on. Lime is fatal to them. In cases like yours gardeners usually dig the diseased plants up carefully and burn them. *W. G. S.*

Coke: *X. Y. Z.* This fuel will not burn well when saturated with moisture; in that way it may be injured by long exposure.

DAMAGED GRAPES: *J. L.* The berries are what are called "rusted," the exact cause of which is not known. Excessive use of sulphur on the heating apparatus; cold draughts coming into contact with the berries when very young; handling carelessly. There is no cure, and all berries whose appearance indicates rust should be cut out of the bunches when observed.

EVERBEARING CUCUMBER: *Jas. M. T. & Co.* The season has been so unfavourable this year for out-of-door Cucumbers that we do not think a fair opinion can be given. The plants flowered, but grew but little, and no fruit set.

LAUREL: *P.* The growths on your Laurel are adventitious roots, such as are formed on Vines. Thin out the branches, and let in more light and air, and they will dry up and disappear. They do no harm.

NAMES OF FRUIT: *Thos. Inrie & Sons.* Egg, or White Paradise, Apple.—*H. H.* We do not recognise the fruits you sent.

NAMES OF PLANTS: *S. E. M., Bedale.* The Poppy is one of a form, called the Shirley Poppy; the other flower is *Helenium Bolanderi*.—*J. C. & Co.* *Veratrum nigrum*.—*E. C. C. D.* *Calamintha officinalis*; *C. clinopodium* is not the same as *C. acinos*, perhaps it is mentioned in your book as *Clinopodium vulgare*.—*G. H.* should address the Editor. 1, *Clerodendron foetidum*; 2, *Saponaria officinalis*; 3, *Pellaea flexuosa*.—*H. P.* *Polygonum cuspidatum*.—*Hants.* Your *Rhododendron* has altered its mind and developed a leaf-shoot in place of waiting to produce flowers next spring. Traces of the flowers are visible. No doubt it is due to the wet season.—*A. D. W.* Cornus mas, the Cornelian Cherry.—*Amateur, Pevensey.* *Hypericum Hookerianum*.—*Tyro.* 1, *Smilax aspera*; 2, *Silene Armeria*; 3, *Anagallis arvensis*; 4, *Filago germanica*; 5, *Polypodium pustulatum*; 6, the Pear leaves are affected with the Pear-mite. Sweep up the leaves and burn them.—*G. P.* *Gentiana Amarella* and *Anthyllis vulneraria*, yellow. The insect is *Sirex gigas*.—*D. T.* *Glaucium luteum*—horned Poppy.—*R. L.* *Potentilla fruticosa*.—*F. P.* *Asclepias syriaca*.

RONDELETIA SPECIOSA: *A. J. B.* This plant flowers in the summer and autumn, and requires stove treatment during the greater part of the year. After flowering allow the plant to rest for three or four weeks, cutting back the shoots half way, and generally regulating the strong growths, if there be any, by tying them down rather than by cutting back. Plants which have bloomed early may, after their rest, be either top-dressed, if not very well rooted, or shifted if the latter be the case. Late-flowering plants may be slightly top-dressed, and shifted early in March the following year. During winter watering should be done only when the ball is moderately dry, and no growth should be made during that period. A night temperature of 55° to 60°, ranging 10° in the day, is high enough from

November to the end of January, when that of the day may be slightly increased. A mixture of two-thirds fibry peat, one-third sifted loam, and enough sharp sand to make the mass porous, is suitable. In spring and summer the treatment afforded to the other stove plants will do.

TOMATO DISEASE: *F. C.* is not a very diligent reader of his *Chronicle*, or he would remember that the disease has been described repeatedly. It is, as he says, closely allied to the Potato disease. Burn the affected plants.

TROPÆOLUM LEAVES: *R. H. T.* The appearances point to something being wrong at the root, or to injury by sulphur fumes. We detect neither insect nor fungus.

CATALOGUES RECEIVED.

C. TURNER, Royal Nurseries, Slough—Dutch Bulbs, and Choice Bulbous Roots.

T. GIBBS & Co., Down Street, Piccadilly, London—Dutch and other Bulbs, Seeds, &c.

SMALL & Co., 23, Lime Street, London, E.C.—Dutch Bulbs, Roses, Fruit Trees, &c.

T. KENNEDY & Co., 106, High Street, Dumfries, N.B. Dutch and other Bulbs, &c.

THOMSON, 20, High Street, Birmingham—Bulb and General Catalogue.

MESSRS. J. and R. THYNE, 83, Vincent Street, Glasgow—Dutch Bulbs, Plants for Forcing, &c.

MESSRS. W. DRUMMOND & Sons, 58, Dawson Street, Dublin—Dutch Flower Roots.

MESSRS. JAS. CARTER & Co., 237 and 238, High Holborn, London—Bulbs, Flowering Roots, Roses, &c.

R. CLEAVER, 47, Bore Street, Lichfield—Bulbs, &c.

COMMUNICATIONS RECEIVED.—*E. J. L.*—*S. M.*—*R. S.*—*G. M.*—*W. C.*—*W. C.*—*Thorp Perrow*.—*G. C.*—*Ochletyre*.—*G. L.*—*C. & Co.*—*R. T. C.*—*W. T. T. D.*—*R. A. R. M.*—*C. C.*—*H. H. D.*—*J. W.*—*E. V. B.*—*F. W. B.*—*J. W. C.*—*C.*—*A. H.*—*Regnier*.—*H. M. W.*—*A. L.*—*G. B.*—*H. D.*—*W. K.*—*C. W. D.*—*A. S.*—*Bristol*.—*W. T. B.*—*A. G.*—*F. G.*—*D. V.*—*H. W.*—*Old Crab*.—*E. C.*—*F. C. H.*—*H. J. W.*—*J. D.*—*B. E. J.*—*R. A. R.*—*J. C.*—*J. S.*

Correspondents sending plants or fruits to be named, or asking questions demanding time and research for their solution, must not expect to obtain an answer to their enquiries in the current week.

MARKETS.

COVENT GARDEN, September 13.

BUSINESS without improvement. *James Webber*, Wholesale Apple Market.

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Apples, half-sieve	2 0-4 6	Peaches, dozen	2 0-10 0
Filberts, 100 lb.	80-0 0	Pine-apples, Eng., lb.	2 0-3 0
Grapes, per lb.	0 6-2 0	Plums, half-sieve	2 6-4 8
Lemons, per case	12 0-21 0	— St. Michael, each	2 0-5 0
Melons, each	1 0-3 0		

VEGETABLES.—AVERAGE RETAIL PRICES.

	s. d. s. d.		s. d. s. d.
Artichokes, p. doz.	4 0-...	Mustard and Cress,	
Beans, Kidney, lb.	0 4-...	punnet	0 4-...
Beet, red, per dozen	1 0-2 0	Onions, per bunch	0 5-...
Carrots, per bunch	0 6-...	Parsley, per bunch	0 4-...
Cauliflowers, each	0 4-...	Potatoes, per cwt.	4 0-5 0
Celery, per bundle	1 6-2 6	— Kidney, per cwt.	4 0-5 0
Cucumbers, each	0 6-0 9	Shallots, per lb.	0 6-...
Endive, per dozen	3 0-...	Spinach, per bushel	3 0-...
Green Mint, bunch	0 4-...	Tomatoes, per lb.	0 9-1 0
Herbs, per bunch	0 4-...	Turnips, per bunch,	
Leeks, per bunch	0 6-...	new	0 5-...
Lettuce, per dozen	1 6-...	Veg. Marrows, each	0 2-...
Mushrooms, punnet	1 6-2 6		

POTATOS.—English Myatt's, 2s.; Beauty of Hebron, 2s. to 2s. 6d.; and Regents, 2s. 6d. per bushel.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Aralia Sieboldi, doz.	6 0-18 0	Foliage plants, vari-	
Asters, per dozen	3 0-6 0	ous, each	2 0-10 0
Balsams, per doz.	2 0-4 0	Ficus elastica, each	1 8-7 0
Bouvardias, per dozen	9 0-12 0	Fuchsias, doz.	3 0-6 0
Carnations, per doz.	6 0-18 0	Heliotropes, dozen	3 0-6 0
Chrysanthemums, doz.	4 0-9 0	Hydrangeas, dozen	9 0-18 0
Cockscombs, per doz.	3 0-6 0	Liliums, var., doz.	18 0-30 0
Coleus, dozen	2 0-4 0	Marguerites, doz.	8 0-12 0
Crasula, per doz.	3 0-12 0	Mignonette, 12 pots	3 0-6 0
Cyperus, per dozen	4 0-12 0	Myrtles, per dozen	6 0-12 0
Dracena terminalis,		Palms in var., each	2 6-21 0
per dozen	30 0-60 0	Pelargoniums, doz.	6 0-12 0
— viridis, per doz.	12 0-24 0	— scarlet, dozen	2 0-6 0
Euonymus, in var.,		Scented Geranium,	
per dozen	6 0-18 0	per dozen	3 0-6 0
Evergreens, in var.,		Solanums, dozen	9 0-15 0
per dozen	6 0-24 0	Verbascos, per doz.	4 0-6 0
Ferns, in var., doz.	4 0-18 0		

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Asters, 12 bunches	1 8-4 0	Marguerites, 12 bun.	3 0-8 0
— French, per bun.	1 0-1 6	Mignonette, 12 bun.	1 0-3 0
Bouvardias, per bun.	0 6-1 0	Pansies, 12 bun.	1 0-2 0
Carnations, 12 blms.	1 0-2 0	Pelargoniums, 12 spr.	0 6-1 0
— dozen bunches	4 0-6 0	— scarlet, 12 spr.	0 2-0 4
Chrysanthemums,		Pinks, 12 bun.	3 0-6 0
12 blooms	0 6-3 0	Poppies, 12 bun.	4 0-6 0
— dozen bunches	2 0-6 0	Primulas, double, 12	
Dahlia, doz. bunches	3 0-6 0	— sprays	0 9-1 0
Coronflower, 12 bun.	1 6-3 0	Pyrethrums, 12 bun.	2 0-4 0
Eucharis, per dozen	3 0-6 0	Rhodanthe, 12 bun.	4 0-6 0
Forget-me-nots, 12		Sunflower, doz. bun.	3 0-9 0
bunches	2 0-4 0	Roses, Tea, per doz.	0 6-1 6
Gardenias, 12 blooms	1 6-4 0	— coloured, dozen	2 0-4 0
Gladiolus, doz. sprays	0 6-1 6	— red, per dozen	0 6-1 0
Heliotropes, 12 spr.	0 6-1 0	— 12 bunches	2 0-6 0
Lavender, 12 bun.	3 0-4 6	— Safrano, dozen	0 6-0 9
Lilium longiflorum,		Stephanotis, 12 spr.	2 0-4 0
12 blooms	3 0-5 0	Sweet Peas, 12 bun.	2 0-4 0
— lancifolium, 12 bl.	1 0-3 0	Sweet Sultan, 12 bun.	2 0-4 0
Lapageria, 12 blooms	1 0-2 0	Tuberose, 12 blms.	0 4-0 9

SEEDS.

LONDON: Sept. 12.—Messrs. John Shaw & Sons, seed merchants, of 37, Mark Lane, E.C., report a good speculative business doing in Clover and other seeds, with a further material advance in values. Continental and home accounts of the growing crops continue most unsatisfactory. Trifolium has lately been in diminished request. Winter Tares offer less freely, and are dearer. Sowing Rye keeps steady. There is no change in bird seeds. Much higher prices are asked for blue Peas. Feeding Linseed is firmer.

FRUIT AND VEGETABLES.

SPITALFIELDS: Sept. 12.—Good supplies of fruit, fresh vegetables, &c.; trade heavy. Potato supplies not quite so large owing to harvest operations. Demand better at slightly higher rates. Prices:—Fruit: Damsons, 2s. 6d. to 3s. per half sieve; English Green Gages, 6s. to 7s. per bushel; foreign do., 2s. 9d. to 3s. per half-flat; English Plums, 2s. to 2s. 6d. per half-sieve; foreign do., 1s. 6d. to 2s. per basket; Pears, 3s. 6d. to 4s. 6d. per bushel; Apples, 3s. 6d. to 5s. do.; do., 1s. 6d. to 2s. 9d. per half-bushel; English; Tomatoes, 5s. to 6s. per peck; foreign do., 2s. 6d. to 3s. 3d. per box of about 18 lb. Vegetables: Cabbages, 1s. 6d. to 2s. 6d. per tally; Cauliflowers, 3s. 6d. to 10s. do.; Vegetable Marrows, 2s. 6d. to 4s. do.; Scarlet Runners, 2s. to 3s. 6d. per sieve; do., 4s. 6d. to 6s. per sack; French Beans, 3s. to 4s. 6d. per sieve; Onions, 2s. to 2s. 6d. per bag of about 110 lb.; pickling do., 3s. 6d. to 4s. 6d. per cwt.; English do., 1s. 9d. to 2s. 3d. per dozen bunches; Turnips, 2s. 6d. to 3s. 6d. do.; Carrots, 1s. 9d. to 2s. do.; Beetroots, 2s. to 2s. 6d. do.; Parsley, 1s. 6d. to 2s. do.; Mint, 2s. to 2s. 6d. do.; Endive, 1s. 6d. per dozen; frame Cucumbers, 1s. to 2s. do.; common do., 6d. to 9d. do.; Cos Lettuce, 6d. to 8d. per score of 22.

STRATFORD: Sept. 11.—Supply has been good during the past week, and a fair trade was done at the following prices:—Cabbages, 2s. to 3s. per tally; Turnips, 40s. per ton; Carrots, household, 35s. to 45s. per ton; Mangels, 22s. to 25s. do.; Swedes, 23s. to 24s. do.; Onions, Dutch, 4s. 3d. to 4s. 9d. per bag; Ghent, 2s. 9d. to 3s. do.; Apples, English, 3s. to 7s. per bushel; Watercress, 6d. per dozen; Plums, 2s. 6d. to 4s. per half-sieve; do., 4s. 6d. to 7s. per flat; Pears, 3s. to 3s. 6d. per basket; do., 1s. 6d. to 2s. 3d. per molly; Tomatoes, Jersey, 5d. to 6d. per lb.; do., Bordeaux, 2s. 9d. to 3s. per box; Apples, 8s. to 9s. per barrel; do., 5s. to 6s. 6d. per box.

CORN.

Averages.—Official statement showing the average price of British corn, imperial measure, in the week ended September 8:—Wheat, 37s. 9d.; Barley, 24s. 2d.; Oats, 18s. 10d. For the corresponding week in 1887:—Wheat, 29s. 1d.; Barley, 23s. 10d.; Oats, 14s. 10d.

POTATOS.

BOROUGH AND SPITALFIELDS: Sept. 11.—Supplies fairly adequate, and trade slow:—Regents, 20s. to 30s.; Hebrons, 50s. to 60s.; kidneys, 60s. to 80s.; Early Roses, 60s. to 70s. per ton.

SPITALFIELDS: Sept. 12.—Quotations:—Magnums, 55s. to 70s.; Beauty of Hebron, 55s. to 70s.; Imperators, 65s. to 80s.; Early Rose, 50s. to 60s.; English kidneys, 55s. to 70s.; do. Regents, 50s. to 70s. per ton.

Imports.—The imports into London last week consisted of 101 bags from Hamburg, and 1 bag from Rotterdam.

THE GARDENERS' ORPHAN FUND.

DONATIONS and SUBSCRIPTIONS

WILL BE THANKFULLY RECEIVED BY

A. F. BARRON, Hon. Sec.,

Royal Horticultural Society's Gardens,
Chiswick, London, W.

UNITED HORTICULTURAL BENEFIT and PROVIDENT SOCIETY.

The ANNUAL DINNER of the above Society will be held on THURSDAY, October 11, 1888, at the Cannon Street Hotel, E.C., at 5.30 P.M.

Chairman.—Dr. ROBERT HOGG, F.L.S.
Vice-Chairman.—H. J. VEITCH, Esq., F.L.S.
Tickets, 5s. each, to be obtained of the Secretary, W. COLLINS, 5, Martinhoe Terrace, Balham, S.W.

Royal Parks, &c.—Grass Seeds.

THE COMMISSIONERS of H.M. WORKS, &c., are prepared to receive TENDERS for the supply of GRASS SEEDS for use in the Royal Parks, &c., during the year 1889. Forms of Tender, containing full particulars, may be obtained at this Office any day, excepting Saturday, between the hours of 12 and 3. Tenders are to be delivered before 12 o'clock, noon, on TUESDAY, the 2nd proximo, addressed to "The Secretary, H.M. Office of Works, &c., 12, Whitehall Place, London, S.W.," and endorsed "Tender for Grass Seeds, Royal Parks, &c."

The Commissioners do not bind themselves to accept the lowest or any Tender.

H. M. PRIMROSE, Secretary.
H.M. Office of Works, &c., 12, Whitehall Place, S.W.
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FERNs.—FERNs.—FERNs.—To the Trade.
Thousands of Pteris tremula, ready, for 4s. 10s., 12s., and 14s. per 100; P. cretica 10s. per 100; Gymnogramma peruviana, 20s. per 100; P. cretica albo lineata, 10s. per 100. Other sorts very cheap. Cash with order. Free on Rail.—J. E. SMITH, Fern Nurseries, 140, Loughborough Road, Brixton, S.W.

Lincolnshire is famed for the Growth of all Kinds of Bulbs, and this season they are unusually good.

LILUM CANDIDUM, or the old White Lily, good Bulbs, 1s. per dozen.

Forty of the best kinds of DAFFODILS, including the famed Sir William, all mixed, 1s. 6d. per dozen.

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The most complete and exhaustive Treatise on Grapes and their Culture ever published.

New Edition.

Price 5s., post-free 5s. 6d.

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FOR SALE, owing to want of room, 1 CROTON WEISMANII, 2 MARANTAS, ZEBRINA and PRINCEPS, 1 ANTHURIUM CRYSTALLINUM, 1 DIEFFENBACHIA, in 12 and 14-inch pots, in good condition.

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The unique and very best selected collection in the world—300 varieties of P. arborea; 350 of P. sinensis, including new, rare and very rare varieties; also Japanese and Chinese sorts. Special Collections well selected for Amateurs. Ask for the Descriptive CATALOGUE of Prices, printed in English, to L. PAILET, Nurseryman, Chatenay (Seine), near Paris, France. Established 1827.

NOTE.—Best season to plant P. sinensis, August, September, and October, but Peonies may be planted also up to April.

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TO BE SOLD CHEAP, 24 CHAMÆROPS FORTUNEI and HUMILIS, with good heads; stems, 2 to 5 feet.

Apply to Mr. JAMES, Waddesdon, Aylesbury, Bucks.

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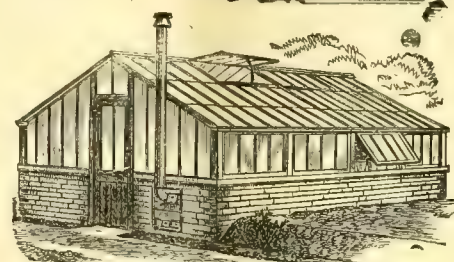
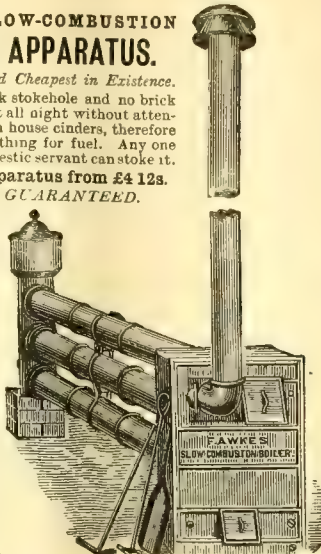
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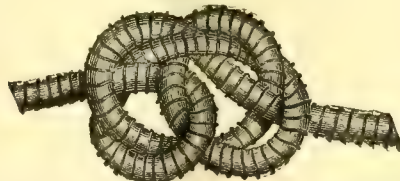
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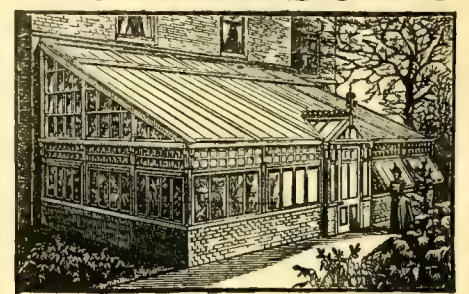


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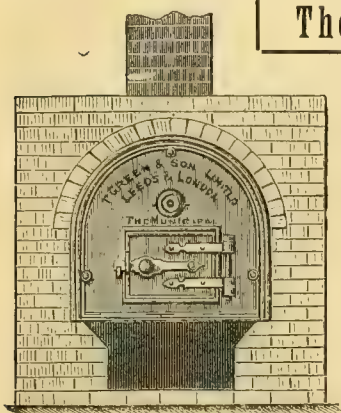
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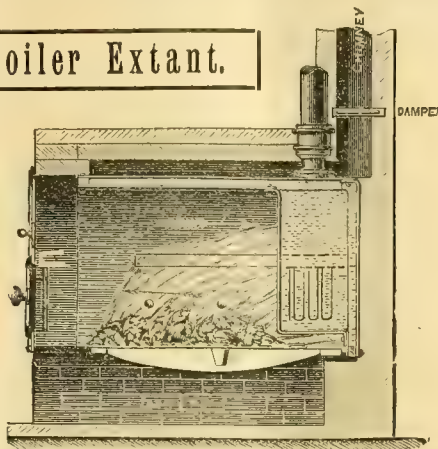
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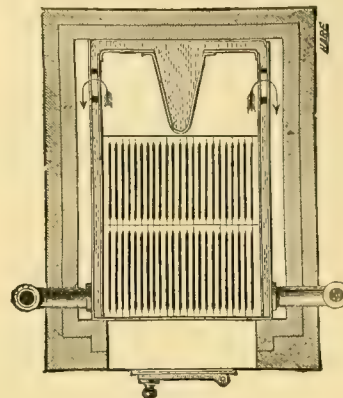
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	MB 4	6 6	„ by 3 0	„ by 3 0	as follows:—	4000	„	60	0	0
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I am, Gentlemen, yours truly,

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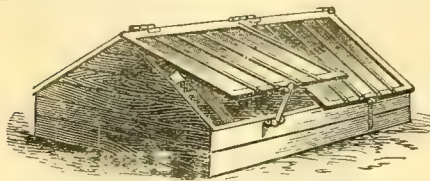
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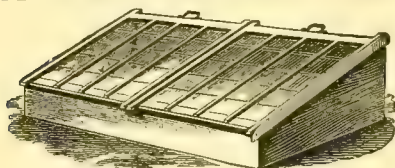
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GARDENING APPOINTMENTS.

Mr. G. ALLEN, late of Ramsbury Manor, has
taken charge of the gardens at Perry Hill,
Taplow, Bucks, the seat of the Hon. Major
NEEDHAM.

Mr. W. W. SIMPSON has been engaged as
Gardener to J. MERCER, Esq., J.P., Alston Hall,
Preston, Lancashire.

Mr. C. A. PEARSE, late Head Gardener to the
Viscountess Dowager DOWNE, Baldersby Park,
Thirsk, Yorkshire, is appointed Head Gardener
to S. K. MAINWARING, Esq., Oteley Park,
Ellesmere, Shropshire.

Mr. W. BRAND, for the last six years Head
Gardener at Oteley Park, Ellesmere, is leaving
that place, and will reside at Seabor House,
Fordham, Soham, Cambridgeshire.

Mr. J. ARNOLD, late Gardener of Mere Old
Hall, Knutsford, Cheshire, has been appointed
as Bailiff and Gardener to Major CORBETT
WINDER, Vaynor Park, Berriew, Montgomery-
shire.

Mr. J. OSMOND, late Gardener to J. F. F.
HORNER, Esq., Mells Park, Frome, Somerset,
has been appointed Gardener to R. LAKE, Esq.,
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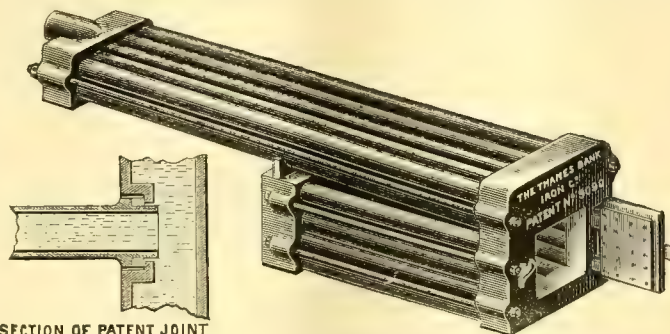
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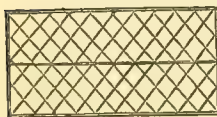
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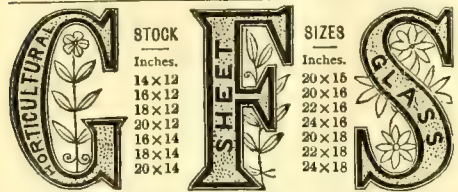
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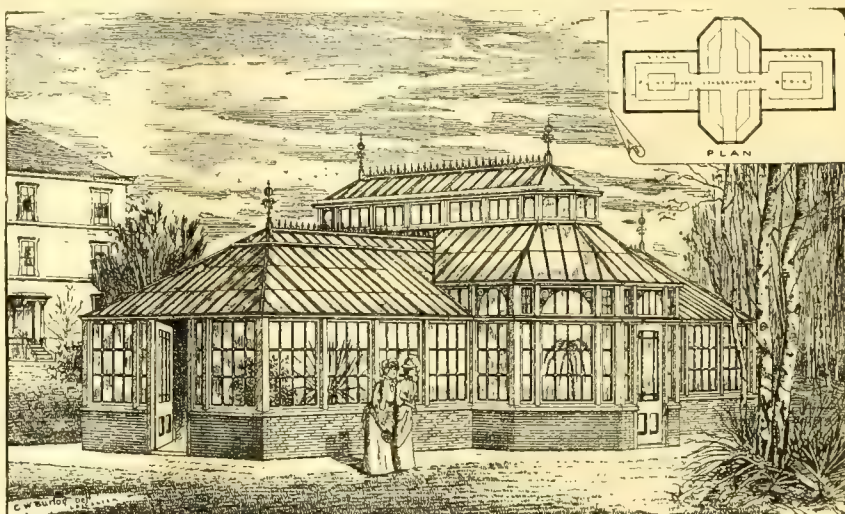
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The GARDENERS' CHRONICLE

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WANTED, TWO Large CAMELLIAS, 4 by 3 feet, 1 imbricata alba and 1 imbricata red; also small GARDENIAS. State price and size to HEAD GARDENER, Clayton W. Mann, Hassocks, Sussex.

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Dutch Bulbs Direct from the Growers.

ANT. ROOZEN and SON'S CATALOGUE for 1888, containing details of their immense Collections of New, Rare, and fine Bulbs and Plants (86 pages in English) is now ready, and will, as usual, be sent post-free, on application to themselves or their Agents.

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W. H. LASCELLES and CO., HORTICULTURAL BUILDERS, 121, BUNHILL ROW, LONDON, E.C. Plans and Estimates Free.

See large Advertisement, September 1, page 233.

SALES BY AUCTION.

Bulbs from Holland.

Sales every MONDAY, WEDNESDAY, and SATURDAY, in Large and Small Lots, to suit all Buyers.

MR. J. C. STEVENS will **SELL** by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., every MONDAY, WEDNESDAY, and SATURDAY, at half-past 12 o'clock precisely each day, first class consignments of HYACINTHS, TULIPS, CROCUSES, and other BULBS, arriving daily from well-known Farms in Holland.

On view morning of Sale, and Catalogues had.

Special Sale of Orchids in Flower and Bud.

MR. J. C. STEVENS begs to announce that his NEXT SALE OF ORCHIDS in FLOWER and BUD will take place at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, October 18, and he will be glad if Gentlemen desirous of ENTERING PLANTS FOR THIS SALE will send particulars for Catalogue as soon as possible.

"The Hall," Dulwich.

(Corner of East Dulwich Grove.)

Ten minutes' walk from Herne Hill Station, London, Chatham, and Dover Railway.

TUESDAY NEXT. (Sale No. 7749.)

MR. J. C. STEVENS will **SELL** by AUCTION, on the Premises, as above, on TUESDAY NEXT, September 25, at half-past 12 o'clock precisely, a small COLLECTION OF STOVE and GREENHOUSE PLANTS, consisting of Palms, Ferns, Tuberous-rooted Begonias, Plants for Table and other Decorative Purposes, Orchids, Camellias, and Azaleas, Geraniums, Chrysanthemums, Cinerarias, &c.; also GREENHOUSE, 24 by 12 feet, HAND and FRAME LIGHTS, various TOOLS, &c.

On view the day prior and morning of Sale, and Catalogues had of the GARDENER on the Premises; and of **MR. J. C. STEVENS**, 38, King Street, Covent Garden, W.C.

Thursday Next. (Sale No. 7751.)

A FINE LOT OF CHOICE ESTABLISHED ORCHIDS, including many rarities, some in Flower and Bud. Also some splendid established plants of LILIU WALLICHIANUM, a grand white Indian Lily.

MR. J. C. STEVENS will include the above in his SALE by AUCTION at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, September 27.

On view morning of Sale, and Catalogues had.

Thursday Next. (Sale No. 7751.)

LILIU NEPALENSE.

CYPRIPEDIUM BELLATULUM.

CYPRIPEDIUM LAWRENCEANUM.

MR. J. C. STEVENS will **SELL** by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, September 27, at half-past 12 o'clock precisely, by order of Messrs. Hugh Low & Co., growing plants of LILIU NEPALENSE, a grand species, to which a First-class Certificate was awarded by the Floral Committee of the Royal Horticultural Society on September 11, and which may be considered one of the very finest and most distinct New Plants of recent introduction. Upwards of a dozen flowers were counted on an old stem in its native habitat, where the temperature falls many degrees below freezing point. It is described in the various Gardening Papers of the 15th inst., and a plant in flower will be on view.

At the same time will be offered 600 CYPRIPEDIUM LAWRENCEANUM, grand plants, in the finest condition, recently imported. The leaves are beautiful in the extreme, and there is every probability of fine varieties being amongst them, as from an importation from same locality, sent by same Collector, Cypridium Hycanum appeared. Fine plants of CYPRIPEDIUM BELLATULUM, amongst them fine specimens; C. SANDERIANUM, C. NIVEUM.

On view morning of Sale, and Catalogues had.

Valuable Established Orchids.

MR. J. C. STEVENS begs to announce that he has received instructions from Robt. Warner, Esq., of Chelmsford, to offer for SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, October 11, at half-past 12 o'clock precisely, a portion of his well-known COLLECTION OF ORCHIDS, comprising many fine specimens of Vandas, Cypridiums, Lelias, Cattleyas, Odontoglossums, Maslevathas, &c.

Further particulars in future Advertisements.

Dutch Bulbs.

Every MONDAY, THURSDAY, and SATURDAY. Great Unreserved Sales.

MESSRS. PROTHEROE AND MORRIS will **SELL** by AUCTION, at the Central Sale Rooms, 67 and 68, Cheapside, London, E.C., every MONDAY, THURSDAY, and SATURDAY, at half-past 11 o'clock precisely, extensive consignments of first-class HYACINTHS, TULIPS, CROCUS, NARCISSUS, and other BULBS, from Holland, lotted to suit the Trade and Private Buyers.

On view morning of Sale, and Catalogues had.

Tuesday Next.

ORCHIDS IN FLOWER.

MESSRS. PROTHEROE AND MORRIS will **SELL** by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on TUESDAY, September 25, at half-past 12 o'clock precisely, 200 lots of ORCHIDS IN FLOWER, from various collections, including Odontoglossum, Oncidium, Lelias, Cattleyas, Cologne Massangensis, with 25 flowers; and an exceptionally fine variety of Vanda Sanderiana, a grand plant, the best variety ever seen; Vanda coccinea, and a fine specimen of Cypridium Spicerianum.

On view morning of Sale, and Catalogues had.

Brunswick Nursery, Tottenham.

IMPORTANT UNRESERVED TRADE SALE OF WINTER FLOWERING HEATHS and GREENHOUSE PLANTS.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. John Maller, to **SELL** by AUCTION, on the Premises, the Brunswick Nursery, Tottenham (close to White Hart Lane Station, Great Eastern Railway), on THURSDAY, September 27, at 12 o'clock punctually, without reserve, the following remarkably well grown STOVE and GREENHOUSE PLANTS:—

5000 Heaths, including Hymenophyllum, gracilis, Wilmoreana, &c.

1000 Genista fragrans

1000 Chrysanthemums in pots, choice varieties

1000 Bouvardias of sorts

3000 Ferns, Adiantum cuneata

Large CAMELLIAS and AZALEAS for cutting; GERANIUM, Improved Queen of Whites, in flower; NEW LANTANAS, COLEUS, &c.

May be viewed any day prior to the Sale. Catalogues may be had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

N.B. The whole of the Stock is in first-rate condition, the ERICAS being especially well set for flower, and an inspection is respectfully invited. The Nurseries are close to the White Hart Lane Station, Great Eastern Railway. Trains from Liverpool Street every half hour.

Friday Next.

MESSRS. PROTHEROE AND MORRIS are

instructed by Mr. F. Sander to **SELL** by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY NEXT, September 28, at half-past 12 o'clock precisely, ODONTOGLOSSUM VEXILLARIUM variety; a

marvellous importation of the above, which has come to hand in excellent condition per steamer Medway. The varieties

COBBIANUM, LEUCOGLOSSUM, and PULCHERRIMUM will be found amongst this consignment. The plants were

found in a new district in Colombia, and were collected at great expense. ONCIDIUM HEMATOCHILUM: a few plants of this rare and superb Oncidium. DENDROBIUM BIGIB-

BUM: a very fine lot of this, the finest of all Australasian Dendrobies; seldom plants can be offered in such fine condition, as it is very rare in its native habitat.

The Sale will also include some fine growing plants, well established, of the lovely new MORMODES RUCCINATOR, carrying flowers of a beautiful golden-yellow; also a new ONCIDIUM from Brazil, which collector describes as the finest ever

seen. A grand lot of ONCIDIUM CRISPUM, the rare O. MARSHALLIANUM, O. CAVENTISHIANUM, O. SARCODES, a fine lot of O. SPHACELATUM MAJUS, the rare O. CURTUM, O. FORBESII, O. MICROPOGON, in fine masses; splendid lot of ODONTOGLOSSUM LUTEOPURPUREUM and

SCERPITRUM, CITROSUM, HASTATUM, ROZZLII, EPIDENDRUM Species from a new district in Brazil; and many other valuable ORCHIDS.

Also PHALENOPSIS BUXSONIANA, PHAUS REGNIERI, and HABENARIA MILITARIS, from Messrs. Seeger & Tropp.

On view morning of Sale, and Catalogues had.

Friday Next.

MESSRS. PROTHEROE AND MORRIS will

include in their SALE, on FRIDAY NEXT, September 28, well established plants of PHALENOPSIS BUXSONIANA, PHAUS REGNIERI, and HABENARIA MILITARIS, from the collection of the late Explorer, Mr. A. Requier, by order of Messrs. Seeger & Tropp.

On view morning of Sale, and Catalogues had.

Kingston-on-Thames.

By order of the Executors of the late Mr. Thomas Jackson, CLEARANCE SALE of the whole of the GREENHOUSE, STOVE, and other PLANTS, a choice COLLECTION of

ESTABLISHED ORCHIDS, large CAMELLIAS, UTENSILS-IN-TRADE, &c., without reserve.

SALE, OCTOBER 1, and two following days, instead of September 25 and 26, as previously advertised.

MESSRS. PROTHEROE AND MORRIS (having sold the Freehold Estate), are instructed to **SELL** by AUCTION, on the Premises, the Kingston Nursery, Kingston-on-Thames, close to the Kingston Railway Station, on MONDAY, October 1, and two following days, without

reserve, at 12 o'clock precisely each day, the whole of the well-grown GREENHOUSE and STOVE PLANTS, including some thousands of Ferns, Geraniums, Fuchsias, 1000 Pot

Roses, 200 large Double White and other Camellias, from 2 to 12 feet, particularly worthy the notice of the Trade; Azalea indica, a large and choice assortment of ESTABLISHED

ORCHIDS, comprising Cattleyas, Vandas, Saccolabiums, Aerides, and Odontoglossums, principally O. Alexandrine, also the LIVE and DEAD STOCK, consisting of 4 Horses, 5 Cows, 2 Exhibition Plant Vans, Utensils-in-Trade, and numerous

other effects.

May be viewed three days prior to the Sale. Catalogues may be had on the Premises; at the various Branch Nurseries, Norbiton and Long Ditton; of G. C. SHERRARD, Esq., Solicitor, 26, Lincoln's Inn Fields, W.C.; and Kingston; and of the Auctioneers, 67 and 68, Cheapside, London, E.C., and Leytonstone, E.

N.B.—The whole of the Valuable Nursery Stock now growing on the Branch Nurseries, will be lotted to suit Large and Small Purchasers, and Sold without reserve, on the respective

Premises, OCTOBER 15 and following days, in the meantime anyone desirous of having either of the productive Nurseries transferred may arrange to do so with the Auctioneers, which would afford them the opportunity of purchasing only what

Stock they require at unreserved Auction Prices.

Sales by Sample.

IMPORTANT TO THE TRADE.

MESSRS. PROTHEROE AND MORRIS desire to announce that their SALES by SAMPLE of NURSERY STOCK and GREENHOUSE PLANTS will commence on TUESDAY, October 9, and be continued every alternate Tuesday.

Central Auction Rooms, 67 and 68, Cheapside, E.C.

Birmingham.

VERTEGANS' NURSERIES.

IMPORTANT SALE of one of the most valuable NURSERY, SEED, and FLORIST'S BUSINESSES in the Provinces. Established upwards of Thirty years.

MESSRS. PROTHEROE AND MORRIS, of London, in conjunction with Mr. W. C. B. CAVE, of Birmingham, are favoured with instructions from the sole proprietor, Mr. R. H. Vertegans (who is retiring from the business), to **SELL** by PUBLIC AUCTION, at the Royal Nurseries, Harborne Road, Edgbaston, on TUESDAY, the 9th day of October next, at 2 o'clock punctually, the various NURSERIES, DWELLINGS, &c., in lots, as under, and including the Leases, Stock, Goodwill, and Possession, as going concerns:—

Lot 1.—The ROYAL NURSERIES, RESIDENCE, and COTTAGE (Hans Niemand & Co.), Harborne Road, Edgbaston.

Lot 2.—The METCHELEY PARK NURSERY and COTTAGE, Edgbaston.

Lot 3.—The SHELLEY NURSERIES and TWO COTTAGES, Great Malvern.

Lot 4.—The CHAD VALLEY NURSERIES and RESIDENCE, Edgbaston, and the BIRMINGHAM MARKET HALL BUSINESS.

Plans and particulars may be had at the several Nurseries; also from Messrs. PROTHEROE AND MORRIS, Auctioneers, 67 and 68, Cheapside, London, E.C.; and from Mr. W. C. B. CAVE, of Birmingham.

Peterborough.

Under a Deed of Assignment.—UNRESERVED CLEARANCE SALE of the whole of the NURSERY STOCK, by order of the Trustees of the Estate of Mr. John House.

MESSRS. PROTHEROE AND MORRIS will **SELL** by AUCTION, on the Premises, the Branch Nursery, Peterborough, on TUESDAY, October 9, without Reserve, the whole of the well-known NURSERY STOCK.

Further particulars will appear next week. Catalogues of the Auctioneers, 67 and 68, Cheapside, E.C.

The Nurseries, Milford, Surrey.

PRELIMINARY NOTICE OF FOUR DAYS' SALE. **MESSRS. PROTHEROE AND MORRIS** are

instructed by Mr. Maurice Young to **SELL** by AUCTION, on the Premises as above, on OCTOBER 10, and three following days, a choice NURSERY STOCK, comprising Evergreens in variety, Conifers, Standard Flowering

Trees, Flowering Shrubs, large deciduous Ornamental Trees, transplanted Forest Trees, Thorns or Quicks for hedges, choice named Rhododendrons, Rhododendron ponticum, Roses, &c.

Further particulars in future Advertisements.

Sunningdale.

Very important UNRESERVED SALE of beautifully grown NURSERY STOCK, a large portion of which is growing on Land recently Sold, and necessitating an immediate Clearance.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. Charles Noble (who has placed in their hands the disposal of his long-established Business and Freehold Estate) to **SELL** by AUCTION, on the Premises, the Sunningdale Nurseries, Bagshot, Surrey, near the Sunningdale Railway Station, on MONDAY, October 22, and five following days, the valuable and remarkably well grown

NURSERY STOCK, extending over about 50 Acres. Fuller particulars will appear.

Catalogues, when ready, had of the Auctioneers, 67 and 68, Cheapside, E.C.

Sunbury, Middlesex. Preliminary Notice.

VALUABLE FREEHOLD NURSERY.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions from the owner to **SELL** by AUCTION, on the Premises, on MONDAY, October 29, the

VALUABLE FREEHOLD NURSERY, known as Osborn's Nursery, Sunbury, comprising 17 Acres of very productive Land, Brick-built Residence, 21 Greenhouses, 2 miles of Hot-water Piping, numerous Pits, Stabling, and other Trade Buildings.

The Estate possesses extensive frontages to the public roads, and these frontages could be utilised for building purposes, without interfering in any way with the carrying on of the present Nursery and Florist's Business.

Particulars and Plans can be had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, E.C.

N.B.—The Extensive STOCK OF STOVE and GREENHOUSE PLANTS and OUTDOOR NURSERY STOCK will be sold by AUCTION, on the Premises, on Monday and Tuesday, October 29 and 30.

Preliminary Notice.

The COLLECTION OF ESTABLISHED ORCHIDS formed by A. S. Hughes, Esq., late of Lee.

MESSRS. PROTHEROE AND MORRIS are instructed to **SELL** the above EARLY IN OCTOBER, at their Central Sale Rooms, 67 and 68, Cheapside, E.C.

Enfield Highway, Middlesex.—Larman's Farm. TO FRUIT GROWERS, MARKET GARDENERS, AND OTHERS.

MESSRS. FULLER, HORSEY, SONS, AND CASSELL are instructed to **SELL** by AUCTION, at the Mart, Tokenhouse Yard, E.C., on WEDNESDAY, October 3, at 2 o'clock precisely (unless previously disposed of by private contract), in one lot, a valuable FREEHOLD PROPERTY, land tax redeemed, 19 acres 1 rood and 30 perches, situate at Enfield Highway, within 1½ mile of Enfield Lock Station and the Great Eastern Railway, with frontages to Bell Lane and the High Road, comprising a Fruit Garden of about 1½ acres, well-stocked with a choice variety of young Fruit Trees, consisting of Pears, Apples, Plums, Currant, Gooseberry, and other

Bushes. Dwelling-house, containing 10 rooms, Dairy, Wash-houses, Coach-house, Stables, Granary, Packing Sheds, and general Farm Buildings.

May be viewed till the Sale, by orders to be had of the Auctioneers. Particulars and Conditions of Sale may be obtained of Messrs. ARKCOLL and COCKELL, Solicitors, 67, Tooley Street, S.E.; at the Mart; and of Messrs. FULLER, HORSEY, SONS, and CASSELL, 11, Billiter Square, London, E.C.

Cheap Bulb Sales.

MESSRS. SMAIL AND CO. will SELL by AUCTION, at 123, Fenchurch Street, City, E.C., on **MONDAY, WEDNESDAY, and FRIDAY NEXT**, September 24, 26, and 28, at 12 o'clock each day, large consignments of First-class **HYACINTHS, TULIPS, CROCUS**, and other **DUTCH BULBS**, specially lotted to suit all Buyers.

Addresses of intending Purchasers Booked for Catalogues of these Weekly Sales.

Fleet Nursery, Hants.

The Nursery is close to Fleet Station, on the London and South-Western Railway, 5 miles from Aldershot, 3 from Farnborough, and 12 from Guildford.

FOUR DAYS' NURSERY SALE.

MR. H. J. E. BRAKE will SELL by AUCTION, at the Fleet Nursery, Fleet, Hants, on **MONDAY, TUESDAY, WEDNESDAY, and THURSDAY**, October 8, 9, 10, and 11, 1888, at 12 o'clock each day, a large quantity of thriving **NURSERY STOCK**, comprising **Abies Douglasii**, **Araucaria imbricata**, **Austrian Pine**, **Arbutus**, **Aucuba japonica**, **Ailanthus glandulosa**, **Berberis Darwini**, **Birch**, and new **Purple-leaved Birch**, **Diota elegantissima**, **Cupressus Lawsoniana**, **Cedrus Deodara**, **Cornus mascula**, **Deutzia crenata**, **R. pl.**, **Golden Hollies**, **Retinospora**, **Juniperus virginiana**, **Rhododendron ponticum**, choice named **Rhododendrons**, **Azalea mollis**, **Kalmia latifolia**, **Spiraea** in variety, **Black Italian Poplars**, **Standard Canadian Poplars**, new **White Poplar**, **Bolleana**, **Mountain Ash**, **Limes**, **Norway Maples**, **Laburnums**, **13,000 Apple**, **Paradise and Pear Stocks**; **Strawberries**, several 100,000 transplanted **Forest Trees**, such as **Ash**, **Birch**, **Beech**, **Alder**, **Austrian Pine**, **Scotch Fir**, **Silver Fir**, **Sycamore**, **Spruce Fir**, **Oaks**, **Prunus myrobolano**, **Quick**; **Standard and Dwarf Roses**, **Gooseberries**, **Black and Red Currants**, **Pears**, **Walnuts**; two **GREENHOUSES** and contents, quantity of **Herbaceous Plants**, &c.; several loads of **BURRS**, suitable for **Rock-work**; a large quantity of **Scotch Fir**, from 2 to 6 feet.

May be viewed, and Catalogues had, at the Nursery, and of the Auctioneer, Lynchford House, Farnborough, Hants.

Whittington Nurseries, near Lichfield.**IMPORTANT SALE OF NURSERY STOCK.**

MESSRS. WINTERTON AND SONS are instructed by Mr. Edward Holmes to submit for **UNRESERVED COMPETITION** at the above well-known Nurseries, on **TUESDAY, WEDNESDAY, and THURSDAY**, October 9, 10, and 11, a large quantity of **FRUIT TREES** of the best sorts, in **Standards, Pyramids, and Dwarfs**; **FOREST TREES**, including **Scotch, Austrian, Larch, and Spruce Firs**; a complete collection of **EVERGREEN, DECIDUOUS, and ORNAMENTAL TREES and SHRUBS**, viz., **Box**, **Laurels**, **Hollies**, **Aucubas**, **Lilacs**, **Spiraea**, **Syringas**, &c.; a grand collection of **Conifers**, in many varieties, suitable for pots and boxes; a quantity of named **Rhododendrons**, **Ghent mollis**, **Azaleas**, and other **American Plants**; **Herbaceous and Rock Plants**, in lots to suit all purchasers.

Particulars in Catalogues to be obtained from the place of Sale, or the Auctioneer, Lichfield and Walton Warren, Barton-on-Trent.

LILIUM NEPALENSE.

CYPRIPEDIUM BELLATULUM.

CYPRIPEDIUM LAWRENCEANUM.

Mr. J. C. STEVENS will SELL by AUCTION,

AT HIS

GREAT ROOMS, 38, KING STREET, COVENT GARDEN, W.C.,

On THURSDAY, September 27,

By order of Messrs. HUGH LOW & Co., growing plants of

LILIUM NEPALENSE—a grand species, to which a First-class Certificate was awarded by the Floral Committee of the Royal Horticultural Society, on September 11, and which may be considered one of the very finest and most distinct New Plants of recent introduction.

Upwards of a dozen flowers were counted on an old stem in its native habitat, where the temperature falls many degrees below freezing point. It is described in the various Gardening Papers of the 15th inst., and a plant in flower will be on view.

At the same time will be offered **600 CYPRIPEDIUM LAWRENCEANUM**—grand plants, in the finest possible condition, recently imported: the leaves are beautiful in the extreme, and there is every probability of fine varieties being amongst them, as from an importation from the same locality, sent home by the same collector, **Cypripedium Heyeanum** appeared. Fine plants of **CYPRIPEDIUM BELLATULUM**, amongst them fine specimens; **C. SANDERIANUM** and **C. NIVEUM**.

On view morning of Sale, and Catalogues had.

WANTED TO RENT, a small **FLORIST'S BUSINESS**, in or near a Town. Full particulars to A., 5, New Cottages, Withycombe, Exmouth.

FOR SALE, a NURSERY, SEED, and CUT FLOWER BUSINESS, situated in a rising town in Yorkshire. The Nursery is 6 acres, and is well stocked with a first-class General Nursery Stock. There are 4 Plant Houses and a number of Pits, all well suited for Market work. The shop trade is mostly cash, and satisfactory reasons will be given or shown why disposing. This is a rare opportunity for a retiring Gardener.—Apply to S., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

To Market Gardeners, Florists, Nurserymen, &c. HAMPTON-ON-THAMES.

FOR SALE, choice **FREEHOLD LAND**, in Acre Plots, suitable for above. Rich Garden Soil with gravel and sand sub-soil. The land is considered by the Trade the finest near London for Grapes and all other Market Products. Apply, **SECRETARY**, Estates Investment and Villa Farm Company, Estate Office, Tangle Park, Hampton-on-Thames.

To Florists, Nurserymen, and Others.

TO BE SOLD, by Tender, the **LEASE and BUSINESS of a FLORIST and SEEDSMAN**, for some years past carried on by Mr. J. C. Hawke, at Newington next Sittingbourne. The Premises include a 6-roomed Dwelling-house, 7 capital Greenhouses, about 50 by 11 feet; and a 2-stall Stable. Held under Lease, of which 17 years is unexpired, at the nominal rental of £18 per annum. Sealed Tenders to be delivered at Mr. HEWETT, Newington, Kent; or to Mr. F. CLEAVER, 48, West Street, Sittingbourne, not later than Tuesday, October 2, and of whom full particulars may be obtained.

FOR SALE, FREEHOLD BUILDING LAND, suitable for Fruit Growing and Garden Purposes, adjoining station at Ashford, Middlesex, near Richmond and Twickenham. 20 ft. frontage, 120 ft. deep; £20 a plot, or 6s. per month. Water, gas, roads made—free conveyance—plans. Mr. FIELD, 3, Bucklersbury, E.C.

TO BE SOLD, or would be **LET**, a **NURSERY**, 2 acres of Ground, Glasshouses, and small comfortable House. Between Putney and Wandsworth. Fifty years' lease at £50 a year. Suitable for a London Seedsman. Apply to Mr. FRED. W. GLAZIER, 1, Park Side, Hyde Park Corner, W.

South of England.

LARGE GARDEN, 20 Acres, with Twenty Greenhouses and Vineries. £7000 has been spent on the property. Seven years' lease. Two Cottages inclusive. £150 a year. ELDRIDGE, Portsmouth.

TO LET, a Small **JOBBER and FLORIST'S NURSERY**, consisting of 4 Houses and several Pits, excellently situated, in most fashionable part of Leicester. An advantageous opportunity for an energetic and enterprising man. Apply, **HARRISON AND SONS**, Royal Midland Seed Establishment, Leicester.

TO LET, VINERY and GLASSHOUSE about 100 yards long, 8 yards wide, 14 feet wide. 150 Vines.—Address, Cliffe Cottage, Idle, near Bradford.

Surrey.

TO BE LET, on moderate terms, about One Acre of **GROUND**, with numerous Glass Houses. Full particulars and terms of Messrs. **PROTHEROE AND MORRIS**, Auctioneers, 67 and 68, Cheapside, E.C.

ORCHIDS.

THE LIVERPOOL HORTICULTURAL CO.

(JOHN COWAN), Limited,

Have just received a fine Importation of

VANDA LAMELLATA BOXALLI

AND
SCHOMBURCKIA THOMSONIANA, New,

and now offered for the first time.

Circular with full particulars of these and other Importations, also copy of their new Illustrated and Descriptive CATALOGUE OF ORCHIDS, will be sent free on application.

THE VINEYARD and NURSERIES, GARSTON, near LIVERPOOL.

THE GARDENERS' ORPHAN FUND.

DONATIONS and SUBSCRIPTIONS

WILL BE THANKFULLY RECEIVED BY

A. F. BARRON, Hon. Sec.,

Royal Horticultural Society's Gardens, Chiswick, London, W.

Royal Parks, &c.—Grass Seeds.

THE COMMISSIONERS of H.M. WORKS, &c., are prepared to receive **TENDERS** for the supply of **GRASS SEEDS** for use in the Royal Parks, &c., during the year 1889. Forms of Tender, containing full particulars, may be obtained at this Office any day, excepting Saturday, between the hours of 12 and 3. Tenders are to be delivered before 12 o'clock, noon, on **TUESDAY**, the 2nd proximo, addressed to "The Secretary, H.M. Office of Works, &c., 12, Whitehall Place, London, S.W.," and endorsed "Tender for Grass Seeds, Royal Parks, &c."

The Commissioners do not bind themselves to accept the lowest or any Tender.

H. W. PRIMROSE, Secretary.
H.M. Office of Works, &c., 12, Whitehall Place, S.W.
September 12.

"EVERGREENS."

Stock quite UNEQUALLED for superior QUALITY.

IMMENSE variety and great extent.

Inspection earnestly invited.

DICKSONS Nurseries, Chester.
(Limited)

TO ORCHID GROWERS.—Live **SPHAGNUM MOSS**, 5s. per sack. Large Rockery **FERNS**, matured roots, including *Lastres rigida*, *montana*, *colina*, *semula*, *erosa*, *dilatata*, *Eliax mas*; *Athyrium*, *Polystichum lobatum*, *angulare*, *aculeatum*, *Robertianum*; *Scolopendrium* Beech, Oak Parsley, &c. *Farsley*, 5s. 6d.; 100, 10s. Botanically named. Carriage paid for Ferns.

JOHN BURNS, Fellside, Kendal.

VALLOTA PURPUREA (Scarborough Lily).

NARCISSUS Incomparabilis plenus.

„ Double White, sweet-scented.

IXIA CRATEROIDES (Crimson).

SEE OUR

Special Wholesale Catalogue of Bulbs,

Containing LIST of all the best varieties of **HYACINTHS, TULIPS, CROCUS, LILiums, DAFFODILS, SNOWDROPS, IRIS**, &c., free on application.

WATKINS & SIMPSON,

SEED and BULB MERCHANTS,
EXETER STREET, STRAND, LONDON, W.C.

PEACH TREES FOR SALE.—Extra size, ranging from 5 to 10 feet high, and as much through. The best sorts represented; 1000 feet of south walling being engaged for their growth. For particulars, apply to R. GILBERT, High Park Gardens, Stamford.

To the Seed Trade.
NEW ZEALAND COCKSFOOT
(DACTYLIS GLOMERATA).
HORNE, SON, AND BRYANT, 59, Mark Lane, London, E.C., are First-hand Sellers of the New Crop. 14 to 18 lb. per Bushel. Samples and Quotations on application.

GARDEN REQUISITES.

COCOA-NUT FIBRE REFUSE.
4d. per bushel; 100 for 25s.; truck (loose, about 2 tons), 40s.; 4-bushel bags, 4d. each.
LIGHT BROWN FIBROUS PEAT, 5s. 6d. per sack; 5 sacks, 25s.; sacks, 4d. each.
BLACK FIBROUS PEAT, 5s. per sack, 5 sacks, 22s.; sacks, 4d. each.
COARSE SILVER SAND, 1s. 9d. per bushel; 15s. per half ton; 26s. per ton, in 2-bushel bags, 4d. each.
YELLOW FIBROUS LOAM, PEAT-MOULD, and LEAF-MOULD, 1s. per bushel.
SPHAGNUM MOSS, 8s. 6d. per sack.
MANURES, GARDEN STICKS, VIRGIN CORK, TOBACCO CLOTH, RUSSIA MATS, &c. Write for Price List.—**H. G. SMYTH, F.R.H.S.**, 21, Goldsmith's Street, Drury Lane (lately called 17A, Coal Yard), W.C.

PEAT FOR ORCHIDS,

CHOICE PLANTS, FERNS, HEATHS, AZALEAS, &c.
EPPS & CO. are now prepared to offer **PEAT**, as above, of first-class quality, at lowest prices. Send for Samples, Price List, and Testimonials. Depot for HORTICULTURAL SUPPLIES, LOAM, SAND, LEAF-MOULD, SPHAGNUM, COCOA FIBRE REFUSE.

PEAT MOSS LITTER.

EPPS & CO., Ringwood, Hants.

GARDEN REQUISITES,

of best quality, as supplied to the Royal Gardens, &c.
BEST COCOA-NUT FIBRE REFUSE, 10 sacks for 10s., 15 for 14s., 20 for 18s., 30 for 25s.; two ton truck, 28s. Free on rail.
RUSSIA MATS, from 12s. to 18s. per dozen.
FINEST ORCHID PEAT, 7s. per sack.
BEST BROWN FIBROUS PEAT, 5s. per sack, 5 for 22s. 6d.
BEST BLACK FIBROUS PEAT, 4s. 6d. per sack, 5 for 20s.
COARSE SILVER SAND, 1s. 6d. per bushel; 14s. 4-ton; **PURE LEAF MOULD**, 3s. per sack. [25s. per ton]
YELLOW FIBROUS LOAM, 3s. per sack.
BEST MUSHROOM SPAWN, 4s. per bushel.
RAFFIA, LABELS, STICKS, from 1 ft. to 5 ft., **BAMBOO CANES**, 34 ft. to 12 ft., **VIRGIN CORK, CHEMICAL MANURES, NETTING, &c.**
SPHAGNUM MOSS, 6s. per sack. **CHARCOAL**, 8s. per sack.
SPECIALITE TOBACCO PAPER and CLOTH, 10d. per lb.; 28 lb. for 21s. Price List free by post.
W. HERBERT AND CO., Hop Exchange Warehouses, South-west Street, London, S.E.

Protect your Fruit by using MADDOCK'S KILL-WASP.

Mr. C. PENNY, Head Gardener to H.R.H. the Prince of Wales, says:—"Your Kill-Wasp is simply marvellous for its quick destruction of this our greatest enemy."

Mr. H. H. WARD, Head Gardener to the Right Hon. the Earl of Radnor:—"I have given it a trial, and found it to be everything you represent it to be. It does its work most effectually."

To be had of all Chemists, price 1s. 6d., or post-free, 1s. 9d., and from the

OLD ENGLISH LAVENDER WATER CO.,

PULBOROUGH, SUSSEX.



GARDEN REQUISITES.

TWO PRIZE MEDALS.

Quality, THE BEST in the Market. (All sacks included.)
PEAT, best brown fibrous ... 6s. per sack, 5 sacks for 22s. 6d.
PEAT, best black fibrous ... 4s. 6d. " 5 sacks for 20s.
PEAT, extra selected Orchid ... 7s. 6d. " 5 sacks for 35s.
LOAM, PREPARED COMPOST ... 1s. per bush., 14s. half-ton, 24s. ton.
LEAF, or PEAT MOULD ... (sacks included).
SILVER SAND, coarse, 1s. 6d. per bush., 14s. half-ton, 24s. ton.
RAFFIA FIERE, best only ... 1s. per lb.
TOBACCO CLOTH, or PAPER ... 1s. lb.; 28 lb., 27s.
SPHAGNUM MOSS, all selected, 3s. per bush., 8s. per sack.
CHUBB'S "PERFECT" FER-
TILIZER (the Best Food for all kinds of Plants, Flowers, Fruits, Vegetables, &c.) ... Tins, 7lb. 14lb. 28lb. 56lb. 1 cwt. 1/3 3/- 5/- 8/- 14/- 22/-
CRUSHED BONES, or Bone Dust 1/2 2/- 3/6 6/- 12/-
VIRGIN CORK (Best Quality only) ... 3/- 5/6 10/6 17/-
RUSSIAN MATS, BAMBOO CANES, PERUVIAN GUANO, NITRATE OF SODA, HORTICULTURAL CHARCOAL, &c.
PEAT MOSS LITTER, cheapest and best Bedding for Horses and Cattle, 2s. per ton. Extra large Sample Bales, 6s. each.
COCOA-NUT FIBRE REFUSE (by Chubb's special process), sacks, 1s. 3d. each; 10 sacks, 11s.; 15 sacks, 15s.; 20 sacks, 18s.; 30 sacks, 25s.; 40 sacks, 30s.; Truck-load, loose, free on rail, 28s. Limited quantities of G., special quality granulated, in sacks only, 2s. each. Terms, strictly Cash with order.

(Bankers, Union Bank of London.)

CHUBB, ROUND & CO.,
WEST FERRY ROAD, MILWALL, LONDON, E.

BULBS FOR Carriage Free. EARLY FORCING

HYACINTHS, Early White Roman, extra fine bulbs, per 100, 15s.; per dozen, 2s.
.. Early White Roman, ordinary size bulbs, per 100, 12s.; per dozen, 1s. 9d.
NARCISSUS, Paper-White, fine bulbs, per 100, 10s. 6d.; per dozen, 1s. 6d.
.. Paper-White, new, large flowered, per 100, 15s.; per dozen, 2s. 6d.
.. Double Roman, very fine, p. 100, 10s. 6d.; p. doz., 1s. 6d.
CHOICE STRAWBERRY PLANTS.—A splendid assortment of prepared Runners, including all the newest and choicest sorts in cultivation. Carriage free. **LAXTON'S NOBLE**, splendid early, per doz., 6s.; per 100, 40s. **KING OF THE EARLIES**, very early, per doz., 1s.; per 100, 7s. 6d. **THE CAPTAIN**, very fine, per dozen, 1s.; per 100, 7s. 6d. **WATERLOO**, splendid dark crimson, per doz., 1s. 6d.; per 100, 10s. **PRESIDENT**, 5s. per 100; **BRITISH QUEEN**, 3s. 6d. per 100; **FROGMORE LATE PINE**, 5s. per 100; **KEEN'S SEEDLING**, 3s. 6d. p. 100; **AUGUSTI NIEAISE**, 3s. 6d. per 100; **JAMES VETCH**, 3s. 6d. per 100; **DR. HOGG**, 5s. p. 100; **ALPHA**, 5s. p. 100. And many others. 100 in 10 choice varieties, our selection, 35s. 100 " 10 " " " " 5s. 6d.

DANIELS' BROS.,

TOWN CLOSE NURSERIES, NORWICH.

"ONLY THE BEST."

CHEAP BULBS FOR FORCING, &c.

ROMAN HYACINTHS ... Per 100—6 d.
DOUBLE ROMAN NARCISSUS ... 8 d.
PAPER WHITE NARCISSUS ... 7 d.
VAN THOL TULIPS ... 4 d.
SECOND-SIZE NAMED HYACINTHS for forcing, our own selection, assorted colours ... 21 d.
UNNAMED HYACINTHS for bedding ... 14 d.
15 per cent. discount, cash with order. Carriage paid. **NAMED HYACINTHS**, best quality, equally cheap.

GARAWAY CO.,

DURHAM DOWN, CLIFTON,

BRISTOL.

STRAWBERRIES.

Strong Roots, 4s. per 100. Plants in small pots, 16s. per 100; ditto in large pots, 25s. per 100. Descriptive LIST free. **RICHARD SMITH AND CO.**, Nurserymen and Seed Merchants, Worcester.

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AND

ORCHID GROWERS,

APPLY TO

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FERNS A SPECIALTY.

The largest, most complete, and profusely **ILLUSTRATED CATALOGUE OF FERNS** ever published, containing over 120 illustrations, and much valuable practical information on the cultivation of Ferns, &c. 1s. 6d. post-free. Smaller Catalogue of over 1300 species and varieties free on application.

W. & J. BIRKENHEAD,

FERN NURSERY, SALE, MANCHESTER.

ROSES IN POTS;

all the best New and Old English and Foreign sorts, from 18s. to 36s. per dozen.

Descriptive List free on application.

RICHARD SMITH & CO.,

Nurserymen and Seed Merchants, WORCESTER.

JERSEY FRUIT TREES AND ROSES.

Carriage Paid. Strong healthy trees, the finest that money can buy. Roses wonderfully cheap. Cordons a spécialité. Before ordering be sure to write for our Illustrated CATALOGUES. **JOSHUA LE CORNU AND SON**, High View Nurseries.

SPECIAL.

HUGH LOW & CO.

Specially call the attention of their friends to the very varied and enormous Stock of both Indoor and Outdoor Plants and Trees growing in their Nurseries at Clapton and Bush Hill Park, earnestly inviting inspection of the same. When time is limited three and a half hours will suffice for a flying visit to both Nurseries, by taking the trains (very frequent) from Liverpool Street Station of Great Eastern Railway to Bush Hill Park Station, returning on same line to Stoke Newington Station, which is ten minutes' walk from Clapton Nursery.

CLAPTON NURSERY, LONDON, E.

Christmas Roses—(the large-flowering variety). **100,000** fine, healthy and strong Plants to select from, all my own growing (not imported), as far as unsold:—
Extra size ... 70s. ... 600s. ... 5000s.
1st ... 60s. ... 500s. ... 4000s.
2nd ... 40s. ... 350s. ... 2500s.

SPIREA JAPONICA, extra strong clumps. **GLADIOLUS BRENCHLEYENSIS**, fine bulbs. For large quantities special prices on application. Cases and packing free. Offered by **HEERMAN BUDDENBORG**, Bulb Grower, Hillegom, near Haarlem, Holland.

Dutch Bulbs.
GLADIOLUS BRENCHLEYENSIS and other sorts. Can be had at moderate prices. Time now for Booking Orders. Also strong Clumps of **LILY OF THE VALLEY** and **SPIREAS**. Apply to **P. VAN TIL, Jz.**, Bulb Grower, Hillegom, near Haarlem, Holland.

BULBS

FOR OUT & INDOOR CULTURE.

Large Collections of all the very Best Varieties of **HYACINTHS, TULIPS, CROCUSES, NARCISSI, LILIES, SNOWDROFS, &c.**

Only the very best kept in stock.

Prices extremely moderate.

Illustrated Descriptive Catalogue (No. 348)
POST FREE ON APPLICATION.

DICKSONS

(Limited)

The Royal Nurseries & Seed Establishments,
Chester.

The only complete Collection of Daffodils existing. **BARR'S NEW DAFFODIL CATALOGUE** for 1888. Now Ready. Free on application.

Containing a full Descriptive List of High-class and Distinct Daffodils only, and also a Descriptive List of Beautiful Hardy Daffodils, at greatly reduced prices. This Catalogue also contains Barr's Specialty Collections of Iris, Lilies, Peonies, Michaelmas Daisies, Plantains, Lilies, Day-Lilies, and a select List of Showy Hardy Herbaceous Plants. **BARR AND SON**, 12 and 13, King Street, Covent Garden, W.C.

B. MALLER AND SONS beg to offer to the Trade a very extensive and unusually well-grown stock of **ERICAS** (Hyemalis and other varieties), **EPACRIS**, **SOLANUMS**, **GENISTAS**, **CYCLAMEN**, **BOUVARDIAS**, **ADI-ANTEUM CUNEATUM**, and other **FERNS**; **GARDENIAS**, **STEPHANOTIS**, **BORONIA MEGASTIGMA**, **FICUS ELASTICA**, **CROTONS**, **GREVILLEAS**, **Tea ROSES**, &c. An inspection invited.

Trade CATALOGUES forwarded on application. The **ANNUAL SALE by AUCTION** will be held on **TUESDAY, September 18**. Burnt Ash Lane Nurseries, Lee, S.E.

STRAWBERRIES A SPECIALTY
SELECT LIST FREE
SAMPLE OF PLANTS 3d.
W. LOVEL & SON, DRIFFIELD.



CUTBUSH'S MILL-TRACK MUSHROOM SPAWN.—Too well known to require description. Price, 6s. per bushel (1s. extra per bushel for package), or 6d. per cake; free by parcel post, 1s.

None genuine unless in sealed packages and printed cultural directions enclosed, with our signature attached. **WM. CUTBUSH AND SON** (Limited), Nurserymen and Seed Merchants, Highgate Nurseries, N.

CARTERS' EARLY BULBS,

To produce beautiful White and Coloured Flowers for Christmas and Easter Decoration.

	PRICE
White Roman Hyacinths ...	Per 100 (p. doz. s. d. s. d.) 17 6 2 6
The Largest Bulbs of the Year	
Double Roman Narcissus ..	10 6 1 6
Paper White Narcissus ..	10 6 1 6
Van Thol Tulips, red and yellow	5 6 0 10
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THE

Gardeners' Chronicle.

SATURDAY, SEPTEMBER 22, 1888.

PLANT-LIFE.

MR. W. T. THISELTON DYER'S address to the Biological Section of the British Association at Bath was devoted to a general review of the condition of Botanical Science. Mr. Dyer first of all alluded to the decadence of systematic botany in this country, and not in this country only but also on the Continent—a fact as lamentable in its way as was the corresponding neglect of physiology in the early half of the century. Allusion was made to the irrational action of the medical authorities who, despite the traditions and practice of thousands of years, have recently excluded, or all but excluded, botany from the curriculum of medical education, and this at the very time when the direct importance of vegetable physiology to medical science generally, and to pathology in particular, has become more obvious than in any former time.

The relations of systematic botany to a natural, that is, to a genealogical as distinguished from an arbitrary classification, and to the geographical distribution of plants and the past history of the world, were then touched on. The latter portion of Mr. Dyer's address was devoted to the discussion of the phenomena of fermentation and its relation to disease, involving, of course, a brief review of the life history and mode of action of bacteria under varying circumstances.

The following condensed extracts will convey some idea of the manner in which the subject was handled by the Director of the Royal Gardens at Kew:—

"It is not so very long ago that at English universities, at least, the pursuit of botany was regarded as an elegant accomplishment than as a serious occupation. This is the more remarkable because at every critical point in the history of botanical science the names of our countrymen will be found to occupy an honourable place in the field of progress and discovery. In the seventeenth century Hooke and Grew laid the foundations of the cell theory, while Millington, by discovering the function of stamens,

completed the theory of the flower. In the following century Morison first raised Ferns from spores, Lindsay detected the Fern prothallus, Ray laid the foundations of a natural classification, Hales discovered root-pressure, and Priestley the absorption of carbon dioxide and the evolution of oxygen by plants. In the early part of the present one we have Knight's discovery of the true cause of geotropism, Daubeny's of the effect upon the processes of plant-life of rays of light of different refrangibility; and finally, the first description of the cell-nucleus by R. Brown. I have singled out these discoveries as striking landmarks, the starting-points of important developments of the subject. It is enough for my purpose to show that we have always had an important school of botany in England, which has contributed at least its share to the general development of the science.

SYSTEMATIC BOTANY.

"As the head of one of the great national establishments of the country devoted to the cultivation of systematic botany, I need hardly apologise for devoting a few words to the present position of that branch of the science. Of its fundamental importance I have myself no manner of doubt. But as my judgment may seem in such a matter not wholly free from bias, I may fortify myself with an opinion which can hardly be minimised in that way. The distinguished chemist, Professor Lothar Meyer, perhaps the most brilliant worker in the field of theoretical chemistry, finds himself, like the systematic botanist, obliged to defend the position of descriptive science. And he draws his strongest argument from biology. 'The physiology of plants and animals,' he tells us, 'requires systematic botany and zoology, together with the anatomy of the two kingdoms: each speculative science requires a rich and well-ordered material, if it is not to lose itself in empty and fruitless fantasies.' No one, of course, supposes that the accumulation of plant specimens in herbaria is the mere outcome of a passion for accumulating. But to do good systematic work requires high qualities of exactitude, patience, and judgment. As I had occasion to show at the Linnean Centenary, the world is hardly sensible of the influence which the study of the subject has had on its affairs. The school of Jeremy Bentham has left an indelible mark on the social and legislative progress of our own time. Mill tells us that 'the proper arrangement of a code of laws depends on the same scientific conditions as the classifications in natural history; nor could there,' he adds, 'be a better preparatory discipline for that important function than the principles of a natural arrangement, not only in the abstract, but in their actual application to the class of phenomena for which they were first elaborated, and which are still the best school for learning their use.' He further tells us that of this Jeremy Bentham was perfectly aware, and that his *Fragment on Government* contains clear and just views on the meaning of a natural arrangement which reflect directly the influence of Linnaeus and Jussieu. Mill himself possessed a competent knowledge of systematic botany, and therefore was well able to judge of its intellectual value. For my part, I do not doubt that precisely the same qualifications of mind which made Jeremy Bentham a great jurist enabled his nephew to attain the eminence he reached as a botanist. As a mere matter of mental gymnastics, taxonomic science will hold its own with any pursuit. And, of course, what I say of botany is no less true of other branches of natural history. Mr. Darwin devoted eight or nine years to the systematic study of the Cirripedia. 'No one,' he himself tells us, 'has a right to examine the question of species who has not minutely described many.' And Mr. Huxley has pointed out, in the admirable memoir of Mr. Darwin which he has prepared for the Royal Society, that the acquirement of an intimate and practical knowledge of the process of species-making... was 'of no less importance to the author of the *Origin of Species* than was the bearing of the Cirripede work upon the principles of a natural classification.'

"At present, undoubtedly, the younger generation of botanists show a disposition to turn aside to those fields in which more brilliant and more immediate result can be attained. Their neglect of systematic botany brings to some extent its own Nemesis. A first principle of systematic botany is that a name should denote a definite and ascertainable species of plant. But in physiological literature you will find

that the importance of this is entirely overlooked. Names are employed which are either not to be found in the books, or they are altogether misapplied. But if proper precautions be taken to ascertain the accurate botanical name of a plant, no botanist throughout the civilised world is at a loss to identify it. But precision in nomenclature is only the necessary apparatus of the subject. The data of systematic botany, when properly discussed, lend themselves to very important generalisations.

GEOGRAPHICAL DISTRIBUTION.

"Perhaps those which are yielded by the study of geographical distribution are of the most general interest. The mantle of vegetation which covers the surface of the earth, if only we could rightly unravel its texture, would tell us a good deal about geological history. The study of geographical distribution, rightly handled, affords an independent line of attack upon the problem of the past distribution of land and sea. Here, however, we are embarrassed by the enormous amount of work which has yet to be accomplished. And unfortunately this is not of a kind which can be indefinitely postponed. The old terrestrial order is fast passing away before our eyes. Everywhere the primitive vegetation is disappearing as more and more of the earth's surface is brought into cultivation, or, at any rate, denuded of its forests. A good deal, however, has been done. We owe to the indomitable industry of Mr. Bentham and of Sir Ferdinand Mueller a comprehensive flora of Australia, the first large area of the earth's surface of which the vegetation has been completely worked out. Sir Joseph Hooker, in his retirement, has pushed on within sight of completion the enormous work of describing so much of the vast Indo-Malayan flora as is comprised within British possessions. To the Dutch botanists we owe a tolerably complete account of the Malayan flora proper. But New Guinea still remains botanically a *terra incognita*, and till within the last year or two the flora of China has been an absolute blank to us. A committee of the British Association has, with the aid of a small grant of money, taken in hand the task of gathering up the scanty data which are available in herbaria and elsewhere. This has stimulated European residents in China to collect more material, and the fine collections which are now being rapidly poured in upon us will, if they do not overwhelm us by their very magnitude, go a long way in supplying data for a tentative discussion of the relations of the Chinese flora to that of the rest of Asia. I do not doubt that this will in turn explain a good deal that is anomalous in the distribution of plants in India. The work of the committee has been practically limited to Central and Eastern China. From the west, in Yunnan, the French botanists have received even more surprising collections, and these supplement our own work in the most fortunate manner. I have only to add for Asia Boissier's *Flora Orientalis*, which practically includes the Mediterranean basin. But I must not omit the invaluable report of Brigade-Surgeon Aitchison on the collections made by him during the Afghan Delimitation Expedition. This has given an important insight into the vegetation of a region which had never previously been adequately examined. Nor must I forget the recent publication of the masterly report by Professor Bayley-Balfour on the plants collected by himself and Schweinfurth in Socotra, an island with which the ancient Egyptians traded, but the singularly anomalous flora of which was almost wholly unknown up to our time. The flora of Africa has been at present but imperfectly worked up, but the materials have been so far discussed as to afford a tolerably correct theory of its relations. The harvest from Mr. Johnston's expedition to Kilima-Njaro was not as rich as might have been hoped. Still it was sufficient to confirm the conclusions at which Sir Joseph Hooker had arrived, on very slender data, as to the relations of the high-level vegetation of Africa generally. The flora of Madagascar, investigated by Mr. Baker, is perhaps at the moment the most interesting problem which Africa presents to the botanists. The flora as a whole presents a large proportion of endemic genera and species, pointing to isolation from a very ancient date. The tropical element is, however, closely allied to that of Tropical Africa and of the Mascarene Islands, and there is a small infusion of Asiatic types which do not extend to Africa. The high-level flora, on the other hand, exhibits an even closer affinity with the temperate flora, the ruins of which are scattered over the mountainous regions of Central Africa, and which

survives in its greatest concentration at the Cape. The American botanists at Harvard are still systematically carrying on the work of Torrey and Gray in the elaboration of the flora of Northern America. The Russians are, on their part, continually adding to our knowledge of the flora of Northern and Central Asia. The whole flora of the north temperate zone can only be regarded substantially as one. The identity diminishes southwards, and increases in the case of the arctic and alpine regions. A collection of plants brought us from high levels in Corea by Mr. James might, as regards a large proportion of the species, have been gathered on one of our own Scotch hills. We owe to the munificence of two English men of science the organisation of an extensive examination of the flora and fauna of Central America and the publication of the results. I am happy to say that the botanical portion, which has been elaborated at Kew, is all but finished. In South America I must content myself with referring to the great *Flora Brasiliensis*, commenced by Martius half a century ago, and still slowly progressing under the editorship of Professor Urban at Berlin. The travels of Mr. Ball in South America have led him to the detection of some very interesting problems. The enormous pluvial denudation of the ancient portions of the continent has led to the gradual blending of the flora of different levels with sufficient slowness to permit of adaptive changes in the process. The tropical flora of Brazil, therefore, presents an admixture of modified temperate types, which gives to the whole a peculiar character not met with to the same degree in the tropics of the whole world. On the other hand, the comparatively recent elevation of the southern portion of the continent accounts, in Mr. Ball's eyes, for the singular poverty of its flora, which we may regard indeed as still in progress of development.

"The botany of the *Challenger* Expedition which was also elaborated at Kew, brought for the first time into one view all the available facts as to the floras of the older oceanic islands. To this was added a discussion of the origin of the more recent floras of the islands of the Western Pacific, based upon material carefully collected by Professor Mosely and supplemented by the notes and specimens accumulated with much judgment by Dr. Guppy. For the first time we were enabled to get some idea how a tropical island was furnished with plants, and to discriminate the littoral element due to the action of oceanic currents from the interior forest, almost wholly due to frugivorous birds. The recent examination of Christmas Island by the English Admiralty has shown the process of island flora-making in another stage. The plants collected by Mr. Lister prove, as might be expected, to be closely allied to those of Java. But the effect of isolation has begun to tell; and I learn from my colleague, Professor Oliver, that the plants from Christmas Island cannot be for the most part exactly matched with their congeners from Java, but yet do not differ sufficiently to be specifically distinguished. We have here, therefore, it appears to me, a manifest case of nascent species.

CLASSIFICATION.

"The central problem of systematic botany is to perfect a natural classification. Such a classification, to be perfect, must be the ultimate generalisation of every scrap of knowledge which we can bring to bear upon the study of plant affinity. In the higher plants experience has shown that we can obtain results which are sufficiently accurate for the present, without carrying our structural analysis very far. Yet even here, the correct relations of the gymnosperms would never have been ascertained without patient and minute microscopic study of the reproductive processes. Upon these, indeed, the correct classification of the vascular cryptogams wholly depends, and generally, as we descend in the scale, external morphology becomes more and more insecure as a guide, and a thorough knowledge of the minute structure and life history of each organism becomes indispensable to anything like a correct determination of its taxonomic position. The marvellous theory of the true nature of lichens would never have been ascertained by the ordinary methods of examination which were held to be sufficient by lichenologists. The final form of every natural classification—for I have no doubt that the general principles I have laid down are equally true in the field of zoology—must be to approximate to the order of descent. For the theory of descent became an irresistible induction as soon as the idea of a natural classification had been firmly grasped. This leads me to

touch on the great theory which we owe to Mr. Darwin. That theory, I need hardly say, was not merely a theory of descent. This had suggested itself to naturalists in the way I have indicated long before. What Mr. Darwin did was to show how by perfectly natural causes the separation of living organisms into races which at once resemble and yet differ from one another so profoundly came about. Heredity explains the resemblance; Mr. Darwin's great discovery was that variation worked upon by natural selection explained the difference. That explanation seems to me to gather strength every day, and to continually reveal itself as a more and more efficient solvent of the problems which present themselves to the student of natural history. At the same time I am far from claiming for it the authority of a scientific creed, or even the degree of certainty which is possessed by some of the laws of astronomy. I only affirm that as a theory it has proved itself a potent and invaluable instrument of research."

(To be continued.)

NEW OR NOTEWORTHY PLANTS.

CATTELEYA KRAMERIANA ×, *hyb. nat. nov.*

IF this is not showy, it is decidedly lovely, notwithstanding its rather narrow, pale rose-coloured sepals and petals, the sepals having a thickened green apex. It is the lip that is so beautiful. The side lacinia is semi-oblong, half-heart-shaped at the base and apex, with a rose-coloured border, and the remainder, excepting the discoidal area, of the lightest purple. Mid-lacinia semi-oblong, emarginate, toothed, wavy, with two discoidal areas of the deepest mauve-purple. The remaining part is white. There are five rough central keels, the outer ones with exsiliant triangles, five to seven in number. All these keels and triangles have a certain hue of brick-red. Column very strong, trigonous, curved, with a three-lobed anther-bed. Mid-lobe pistillar, side lobes with two or three teeth, all deep purple. Broken purple lines on the sides of the column, seven in front under the fovea, partly elevated in keels at the base, whose anterior surface is sulphur-coloured. Anther white. Pollinaria four, regularly Cattleyoid. I have a two-flowered peduncle with a rather thin withered sheath.

Mr. Franz Kramer, the leading gardener of Herr Rücker-Jenisch, at Kleinfloßbek, imported it from Brazil as a hybrid between *Cattleya intermedia* and *Forbesii*. I have been kindly favoured with a stem that is more than a foot in length, the upper part nearly half an inch in diameter. There the longer superior joints are furrowed with blunt ribs. The three very coriaceous leaves are minutely crenulate at the reflexed margin, 6 inches long by 2½ wide. The plant resembles a very tall specimen of *Cattleya intermedia*. The flower resembles the flowers of both species. It is a great satisfaction to dedicate this lovely plant to Mr. Franz Kramer, the persevering and successful head gardener of the park and gardens of Kleinfloßbek, which earned their reputation by the work of Herr Senator Jenisch and his head-gardener, Mr. Kramer, sen. *H. G. Rehb. f.*

MASDEVALLIA PUNCTATA, *Rolfe, n. sp.*

THIS is an interesting novelty, which has been flowering in the Kew collection for the past few weeks, and which belongs to that small group in which the lip and lateral sepals are uppermost, and the odd sepal inferior. It is more nearly allied to *M. swartzii*, *Rehb. f.*, than to any other, having a descending peduncle and a succession of flowers, but only one developed at once. The present species, however, has decidedly larger flowers, which bear a remarkable resemblance to the head of a bison, owing to the shape and curvature of the lateral sepals; also a quite different colour. The ground colour of most of the flower is a light or semi-translucent greenish tint, but heavily spotted with dark purple-brown, these spots being almost or quite suffused towards the base of the flower. The lateral sepals, however, are markedly different, the

ground colour here being opaque yellow-ochre, inclining slightly towards greenish, and densely covered with minute dusky spots. These are far smaller and far more numerous than those on the rest of the flower, besides being quite different in colour, and impart to the flower a very distinct character.

The plant was presented to Kew in the early part of the present year by Messrs. Backhouse & Sons, of York, though I do not know the precise locality from whence it was obtained, and can only surmise that it came from the Andes of, or near, New Grenada. It grows in a dense tuft, about 4 inches high. The leaves are lanceolate, acute, 7–9 lines broad, light green, narrowing into a petiole about 1 inch long. Peduncle slender, descending, about 2½ inches long. Odd sepal ovate, strongly concave, three-keeled, the central one being very prominent, tail about ¼ inch long, and about equalling the limb. Lateral sepals connate, 3 lines, strongly decurving for about 5 lines, then abruptly terminating in slender tails about 1½ lines long. At the point of divergence of the lateral sepals is a very distinct narrow groove dividing the two; here they measure about 2½ lines across, and at the place where they suddenly narrow into the tails, about 1 line. Petals 2–2½ lines long, oblique, narrowed below, acute above, with a pair of nerves somewhat keeled outside; yellow above, spotted, or almost suffused with dark purple below. Lip as in the section generally. Column slender, narrowly winged above, tridenticulate, deep purple-brown, green at extreme apex. Pollen masses two, as in genus. *R. A. Rolfe.*

NURSERY NOTES.

ORCHIDS AT MR. CYPHER'S.

QUITE recently I had an opportunity of taking notes of some of the plants growing in Mr. Cypher's nurseries at Cheltenham, which may, perhaps, interest some at least of your many readers. To be enabled to see growing many fine plants in such unwonted vigour as I saw them is not an unpleasant thing; indeed, the opportunity of taking a walk through this far-famed plant growing establishment is of more than passing interest to me in itself, inasmuch as I am able to remember the spot as a green field, and have watched its continuous development to the present time.

When first it became a nursery a long straight drive ran through it, having borders for specimens on either side of Roses, Conifers, and shrubs, together with some good old-fashioned perennials. All this, however, has departed, but not dispensed with, and plant-houses of all descriptions occupy their place. The Roses and other things are taken across the road to a plot of valuable land of several acres, where they receive greater attention than ever. But this has little to do with Orchids, it may be said; and yet it has a good deal, for the advent of the Orchids was actually the occasion of turning out the other plants, and now the Orchids are an important feature of the nursery. It is a sight worth seeing to look into the Cattleya-house alone, and inspect the fine specimens of this and that rarity which one is not wont to see in such perfection. The early part of September is perhaps not the gayest time for *Lælia* and *Cattleyas*, but still it afforded ample opportunity for speculation on the rich harvest of bloom which will speedily follow. *Lælia anceps* was already showing in numbers, and many fine forms of *Cattleya Gaskelliana* were in bloom. In one pot were two very distinct forms, clearly the result of natural hybridisation. Mr. Cypher informed me that they were potted as received, and it was evident by the manner in which they had grown together that they had shared each other's company from the first; the one is very light, and the other very deeply coloured, the latter being a decided acquisition, consequently they are destined at some time to be parted. *Odontoglossum grande*, always a favourite, was in flower in several houses.

The nursery is famous for *Dendrobies*, and among the more conspicuous plants at the present season may be mentioned *D. Jamesoni*, the continuous flowering *D. Dearei*, whose pure white flowers are remarkable for their durability; *D. Ainsworthii* makes remarkable progress here, and the stout, solid, short-jointed growths form good proof of proper methods of culture. Mr. Cypher has been very fortunate in raising a stock of this hybrid from division of the old pseudobulbs, which he cut into lengths containing a couple of joints, and planted in shallow pans of sphagnum moss, sharp sand, fine charcoal or small crocks, and a little peat. For some time the cuttings are kept moderately cool and are only watered occasionally, and when the joints exhibit signs of activity a warmer temperature and more moisture are accorded them. Established plants delight in a position near the glass, with plenty of heat and moisture while in full growth; the fragrant flowers of this are always welcome in winter time. A fresh importation of *Dendrobium McCarthiae*, made direct from India last winter, has made a good start, and numerous new growths 18 or 20 inches long have been made. *D. Wardianum* showed a great number of growths, some being upwards of 3 feet in length. *Masdevallias* and *Lycastes* are also in large numbers. Among the former *M. Harryana* was conspicuous by reason of its richly coloured flowers.

The latter group will make a fine display at a later date. Among other Orchids in flower were *Cypripedium Lawranceanum* and *C. Parishii*, *Odontoglossum Roezlii*, *Epidendrum prismatocarpum*, *Mormodes luxatum eburneum*, and many more. These, however, are but a few of what may be seen in house after house filled with choice things. Besides Orchids there is a grand collection of Heaths and hard-wooded subjects. *J.*

LETTUCES AT READING.

WHILST Lettuces were this cold season a drug in the market, and of late often absolutely unsaleable at any price, it has been somewhat remarkable that complaints of early "bolting off" to seed have been common; and, though usually esteemed a cool-weather plant, yet it is possible that so much coolness of temperature and soil promoted this rapid bolting. It is by no means improbable also that in some cases seed is saved from stocks which bolt readily, hence the hereditary taint; but there are stocks so good that they cannot be induced to bolt so soon as may be desirable—in fact, some cannot be induced to seed in this country freely from the earliest of spring-sown plants, and those who grow Lettuces for cutting only, and not for seed production, find the long-standing strains to be of great value.

When recently I was permitted to inspect the extensive trial-grounds of Messrs. Sutton & Sons, specially noticeable were the Cos and Cabbage Lettuces, and I must say that several of the strains at Reading were very good, the Cabbage Lettuces especially showing remarkable dimensions, although on ordinary field soil, and at the same time they were as solid and firm as they possibly could be. Of the Cos forms, a huge one, and a very solid-hearting, handsome one, is the Reading Mammoth White. Those familiar with Ivery's Nonsuch, know that it long enjoyed the reputation of being the tallest and finest of all the Cos Lettuces, very distinct in form and leafage, but rarely standing long, and as seldom producing a solid heart. The Mammoth looks as if it were the product of a cross between the Nonsuch and a fine form of Paris White. It is tall, handsome, massive, solid-hearted, and stands well. Without exception it is the finest of all show Lettuces. The Superb White Cos is a grand stock of the Paris White, but having hearts so rounded, solid, and massive, that anyone might almost sit upon them without breaking them. This stands for weeks before bolting to seed. Sutton's Whiteheart is well named, as having huge solid white hearts set in a few deep green leaves, and

is also a splendid summer Lettuce, and Sutton's Winter White, which has proved quite hardy in the trial grounds, should make a first-rate variety for autumn planting, standing in a seedbed for spring planting.

Turning to Cabbage Lettuces, so tempting looking and so sweet and crisp, the little Commodore must stand out as invaluable for close planting on warm borders, and for the earliest use. All the Year Round had soon bolted, whilst the little Commodore was still as hard as a nut. Sutton's Standwell, fitly named, is a very large, solid, white-hearted form, big as skittle-balls and almost as firm. A brown-tinted form is named Brown Standwell, and was even larger than the preceding, and as solid. Sutton's Favourite, a perfect giant amongst Cabbage Lettuces, resembles a white Savoy Cabbage in being curly, yet so very firm and solid; whilst even larger seemed to be Sutton's Giant, purple-tinted, and a grand solid-hearted variety.

These are but a few selections out of a large trial, and illustrate the care and enterprise of high-class seedmen tend to the production of high-class vegetables. *A. D.*

CLEMATIS AT HUNTINGDON.

If one desired to gain anything like an accurate idea of the extent to which the Clematis is grown in the present day, it might be realised by consulting those in the trade who grow largely to supply their brother nurserymen. It appears that certain of the trade make a leading specialty of the Clematis, and by propagating a selection of varieties in large quantities they are able to supply others in the trade as cheaply at least as they could propagate for themselves on a limited scale. One of the firms who produce Clematis to a large extent is that of Messrs. Wood & Ingram, of Huntingdon.

It is probably pretty widely known that Clematis are propagated by grafting upon the roots of some favourite stock, and that this is done mainly in spring. It is work requiring careful manipulation, and also suitable propagating-houses, so that the process may go on rapidly. As to the most suitable stocks for grafting, that is to some extent a matter upon which the trade is apt to maintain a reserve. One firm which grows largely uses two stocks, and it seems some care is necessary, for the Clematis is subject to a disease that it is supposed originates in the stock, and great discrimination is therefore necessary to select these clean and healthy.

Our lists of Clematis are now somewhat extensive—even if they are confined to what may be termed popular leading varieties. Messrs. Wood & Ingram's list comprises some sixty varieties, and of these about twenty may be said to be in the largest demand, and a few popular varieties, such as Jackmanni, have to be produced in extra quantities. Of Jackmanni, Messrs. Wood & Ingram have this season propagated some 5000 plants.

A list of Clematis, which has no classification into sections is at best a bewildering document. Unless one is pretty familiar with the varieties, who is to tell which are the spring bloomers that flower on the old wood of the previous year, and which the summer-blooming types which bloom upon the summer shoots of the same year? The sixty or so varieties grown by Messrs. Wood & Ingram can be divided into five distinct sections—the lanuginosa, the Jackmanni, the florida, the patens, and the viticella. The lanuginosa group has gained in number in recent years by the addition of many fine varieties. They flower upon the wood of the current year, and the successional summer growths should be trained in so as to secure the later crops of blossoms, the habit in the race being to throw out a sprinkling of flowers at intervals till the frosts come to arrest further growth. When they have to cover a limited space or are employed as pyramids the plants should be annually pruned down to about 3 feet from the ground, so that the base may not become naked by being devoid of foliage. Of this section the best varieties are:—Alba magna, white; Blue Gem, pale blue; Enchantress, double, white flushed with rose; Fairy Queen, pale

flesh, with pink bar; Henryi, creamy-white, said to be a very hardy variety; Imperatrice Eugénie, white; Lady Caroline Nevill, French-white, with mauve bars; Lady Rosamond, silvery-grey; lanuginosa and its varieties, candida and nivea; Lawsoniana, rosy-purple—a very vigorous grower; Lord Nevill, bright blue; Louis van Houtte, bluish-purple; Madame van Houtte, white; Mdle. Torriana, bright rose; Mrs. Cholmondeley, lavender, tipped with purple; Mrs. Hope, satiny-mauve; Princess of Wales, deep bluish-mauve; purpurea elegans, deep violet-purple; Robert Hanbury, bluish-lilac; Sir Garnet Wolseley, bluish ground, with plum-red bar; Symeana, delicate lavender-blue; The President, purple, suffused with claret; Venus Victrix, delicate lavender—a double variety; William Kennett, deep lavender; and Willisoni, shaded pale lavender.

For general usefulness, hardiness, floriferousness, and great decorative effect, the Jackmanni section of the Clematis is the most valuable, for the plants in the late summer and autumn months literally become masses of blossoms successively and continuously renewed. They should be pruned back hard in early spring, as well-established plants throw out large numbers of strong leading shoots that bloom with marvellous freedom. The leading varieties, and the most useful of this section are:—ascotensis, azure-blue; Beauty of Worcester, a variety that bears both double and single flowers, the colour a very pleasing bluish-violet, a fine and distinct new variety; Gipsy Queen, rich bright dark velvety-purple—late flowering; Jackmanni, Jackmanni alba, and Jackmanni superba, the flowers of the latter large and very fine in form; Madame Grange, crimson-violet, tinted with red—a fine and distinct variety; President Grévy, bluish-purple; Star of India, reddish-plum; Victoria, deep reddish-mauve; and velutina, dark purple.

The florida section, the forerunner being a Japanese species, is a much smaller group, but one which contains only summer bloomers, flowering from the old or ripened wood; it is therefore obvious that if the plants were pruned back as recommended in the case of the lanuginosa and Jackmanni types, they would not flower, and therefore what is required in the way of pruning is, that the decayed wood be simply thinned out, the ripened shoots made the previous summer being left for flowering. The varieties forming this section are well adapted for planting against conservatory walls, or in corridors, and if on walls it should be where their blooms are sheltered from late spring frosts, which occasionally injure them. The leading varieties are—Belle of Woking, silvery-grey, double; Candidissima flore-pleno, white; Countess of Lovelace, bluish-lilac, double; Duchess of Edinburgh, white, double; Fortunée, white, double; John Gould Veitch, lavender-blue, double; Lucie Lemoine, white, double; Mr. George Jackman, satiny-white; and Proteus, purplish-rose, large and double.

The patens section is represented by a much larger number of varieties, and, like the florida type, flowers from the old or ripened wood, and generally rather earlier in the year, hence they are known as spring bloomers. The most popular varieties appear to be Albert Victor, deep lavender; Duke of Edinburgh, deep violet-purple; Lord Lonsborough, deep mauve; Miss Bateman, white; Miss Crawshaw, Solferino-pink, a very distinct and pleasing variety; Mr. S. C. Baker, French-white with claret bars; Sophia, mauve; and Standishii, violet-blue.

Lastly comes the viticella section, and they are also summer and autumn bloomers, flowering successionally, in profuse masses, on summer shoots, but not so continuously as in the case of the Jackmanni type. Of this there are a few fine varieties, such as Earl of Beaconsfield, rich royal purple; Lady Bovill, greyish blue; and viticella rubra grandiflora, bright claret-red, small-flowered, but very distinct.

Respecting the culture of the Clematis, it can be said it is a very accommodating plant, growing in any good garden soil provided it is enriched. A soddened soil is unsuitable, and that in which the plants are growing should be so open as to allow of

water freely passing away. Chalk or lime mixed with a rich light loam, is found to suit the Clematis well. A good mulching of short manure should be given in spring, and this lightly forked in in autumn. Cow-dung on light, and leaf-mould on heavier soils can be used with great advantage.

A list of twenty fine varieties of the Clematis will be found in the following:—Alba magna (L.), Beauty of Worcester (J.), Belle of Woking (F.), Countess of Lovelace (F.), Duchess of Edinburgh (F.), Enchantress (L.), Fairy Queen (L.), Gipsy Queen (J.) Henryi (L.), Jackmanni superba (J.), lanuginosa (L.), Lawsoniana (L.), Lord Nevill (L.), Madame Grange (J.), Mrs. George Jackman (P.), Princess of Wales (L.), purpurea elegans (L.), Symeana (L.), Venus Victrix (L.), and William Kennett (L.) The letter placed after each name denotes the section to which each variety belongs. *R. D.*

CHIRONIA PEDUNCULARIS.

The Chironias are pretty greenhouse plants, easy to cultivate, free flowering, and they last in flower several months. They are rarely met with in gardens nowadays, having disappeared along with numerous hard-wooded greenhouse plants with which they used to be commonly cultivated. *C. peduncularis* (fig. 42) is one of the best of them. It was cultivated in England many years ago under the name of *Exacum*, to which it bears a close resemblance. It is a native of the Cape, where the genus is abundantly represented, especially near the sea. The species under notice was found by me in abundance on marshy ground, within reach of sea-spray near the port of East London. A few pods of seed were found and brought to Kew in the spring of last year, where the plants have this year been much admired. Several examples were exhibited in the spring at one of the Royal Horticultural Society's meetings, and these same plants remained long in bloom. They are about 2 feet high, freely branched, the leaves bright green, and the flowers a soft rosy-purple. This species is well worth growing for the conservatory and cold greenhouse. It seeds very freely. *W. W.*

GENTIANA ACAULIS AND ITS ALLIES.

UNDER this name may be included several cultivated forms which have been classed and adopted as species by certain botanists. As this confusion may give rise to difficulties (especially among amateurs who may desire to cultivate them), it will not be superfluous to pass them in review.

Those who botanise in our mountains are struck by the difference seen in the leaves and flowers of different plants of the acaulis section. My friend, Mr. Scott Wilson, with whom I botanised on the slopes of Fully, remarked this to me, and said, how greatly the plants around us differed from *G. acaulis* as grown in his father's garden at Weybridge. As I had already read the note by Mr. Perier, of La Battue, on the same subject (*Bulletin de l'Association pour la Protection des Plantes*, No. 2), I decided to work out the matter. Mr. Perier procured some seed for me, and I collected some myself, and was easily convinced that marked differences do exist.

There is evidently one variety of *G. acaulis* which, having been cultivated for so long a time in English and Dutch gardens, has become modified and acclimatised; this is what is called in English gardens the "Gentianella." This plant produces offsets freely; its foliage is more shining, and is harder than in the type. It is really a garden species, without any exact natural counterpart of the Alps, for the most part difficult to cultivate when transplanted from the mountains to the plains. In order to introduce them into gardens recourse must be had to acclimatisation by seed, which are easily procured, but are of slow germination. I have given particulars as to the method of raising them from seed in former numbers of the *Gardeners' Chronicle*.

The different forms of the acaulis group are considered to be species, and consequently the old original type of acaulis only exists in an historical sense. These forms are maintained in the garden here by propagation and by seeds.

Gentiana alpina of the fields, &c., must be excluded from these notes, as I have never been able to obtain seeds of the true form. It is more rare than it is generally thought to be, but I hope to discover it this autumn and collect seeds.

The species I have grown from seed are *Gentiana Clusii*, *G. angustifolia*, and *G. Kochiana*.

erect, of an azure-blue colour with five bright green spots in the throat. It is the most beautiful species, and also the most easy to cultivate. A sowing made in 1886 produced flowers last spring, whereas with other species three or four years elapse before flowering. *G. angustifolia* is a native of the limestone mountains of the La Grande Chartreuse region between Chambéry and Grenoble, and consequently requires a limestone soil.

G. Kochiana has large, very broad leaves, of a moss-green colour, which spread out on the soil. It is the most curious *Gentian*, and its foliage is the richest,

A fifth form of *G. acaulis* has been found in the mountains of Bosnia, and is described by Dr. Günther Ritter von Beck in the *Flora of Bosnia* (Abhandlung des K. K. Natur. Hofmuseums in Wien).

Of all these species it is very certain that *G. angustifolia* is the best to cultivate, being the prettiest, and the one most easily grown (excepting the English *Gentianella*). It frequently flowers again in the autumn, and is covered with its fine bell-shaped flowers in the spring, and does not suffer from our relatively dry atmosphere. *H. Correvon, Jardin Alpin d'Acclimatation à Genève.*

THE CHEMISTRY OF VEGETATION, IN REFERENCE TO THE GROWTH OF THE POTATO.

(Continued from p. 208.)

BOUSSINGAULT.—When once this kind of investigation was fairly "set going" a number of experimenters in different countries took the subject up. By the time Boussingault—who had studied chemistry at a mining school—was led, through his marriage with a sister of M. le Bel, to take up "agricultural chemistry," there was also a large amount of information in the shape of papers communicated to learned societies and journals. On his brother-in-law's estate at Bechelbronn (in Alsace) he commenced a series of analyses of plant composition. One of his earliest inquiries was on the amount of nitrogen present in forage plants, and on the results he obtained he published a paper in 1836.* The following year he was appointed Professor of Agricultural Chemistry at the Conservatoire des Arts et Metiers, and took in hand the question, whether plants obtain their nitrogen from the air? On this he published, in 1838.† With the numerous analyses made at this period by many chemists of the composition of plants, and the chemical constitution of vegetable acids, we are at present but little concerned.

PAYEN.

It should be noticed, however, that in 1836 and 1837 Payen wrote papers on starch (*amidon*) in the *Annales de Chimie et de Physique*,‡ and made careful analyses of starch obtained from different plants. Chemistry in its application to the Arts and to manufactures and to pharmacy, went steadily on, and the philosophic explanations of chemical actions was the subject of frequent thought by philosophic minds. It is, however, only in so far as their "principles" bear on the present subject that they need here be referred to.

Alongside of the ever widening attention to analyses and to the physics of chemistry a new branch of research, which has proved of such fascinating interest to many, was springing into existence.

Here it is necessary to look back somewhat in time from the date of Boussingault's paper just mentioned.

Priestley had, as far back as 1779, written:—"I have been so happy as by accident to have hit upon a method of restoring air which has been injured by the burning of candles, and to have discovered at least one of the restoratives for this purpose—it is vegetation." [A plate showing his simple method of observation is given with his paper.]

INGENHOUSZ, SENÉBIER.

But it was Ingenhousz, of Breda, then living in London, who at the same time (1779) first clearly defined the relation of the plant to the atmosphere, and showed that the absorption of the carbonic acid by the plant was dependent on the influence of the light of the sun, and not of the heat. Senébiér, of Geneva, also in 1779 took the subject up, and in 1782 gave his first important paper.

In 1792 he published in the *Journal de Physique* his memoir "On the great probability that carbonic acid gas is decomposed by plants in the process of vegetation." Continuing his researches, he in 1802 pub-



FIG. 42.—CHIRONIA PEDUNCULARIS: GREENHOUSE PLANT: FLOWERS PURPLE. (SEE P. 324.)

G. Clusii is a relatively scarce species, a native of the Jura chain and of the limestone Alps (altitude 1500—2000 metres = 5000 to 6000 feet). The leaves are shining, thick, leathery, lanceolate, and very pointed. The teeth of the calyx are separated by an acute sinus (interspace). The flower is of a beautiful deep blue colour, and has no green markings in the interior. This species lives and flowers well in our garden here, but makes few runners, and takes a long time to increase the size of the tuft. It does not flower again in autumn.

G. angustifolia is truly the most beautiful species of the genus. It has oblong, sometimes very elongated leaves, straight and narrowed towards the base. The divisions of the calyx are abruptly acuminate and contracted towards the base. The flower is large,

but its violet-blue flowers are not so beautiful as some others. There are five dark green spots in the throat. It is essentially a native of the Valais, and occurs in all pasturages between 2500 and 3000 metres elevation. It shuns lime, and belongs to the granitic flora. It is acclimatised here, but does not flower well.

G. alpina is one of the prettiest and most interesting species, but, unfortunately, it is rare and of difficult cultivation. The foliage is glaucous, and forms an incurved imbricated rosette, whence springs one little flower of an azure-blue colour. Its habitat is at once that of *G. acaulis* and of *G. verna*. It produces runners freely. *G. alpina* is only found on primitive rocks at an elevation of 2500—3000 metres, and is only to be seen on the Alps.

* *Ann. de Chimie et de Physique*, vol. lxxiii., p. 235.

† *Id.*, vol. lxxvii., p. 5.

‡ *Id.*, vols. lxi. and lxx.

lished at Geneva his Physico-Chemical Memoirs "On the Influence of Solar Light in the Three Kingdoms of Nature, especially the Vegetable." In this he showed that carbonic acid was essential to the production of oxygen by sunlight. He also gave results of the examination of the action of different rays on germinating plants, and said he found that the size and extent to which the leaves grew was proportional to the intensity of illumination; that red rays had more effect than violet or blue; and that the green of leaves depended on the quality of the ray. Two years later he gave the results obtained by having separated out the green colouring matter of leaves (chlorophyll—*χλωρὺς*, green; *φύλλον*, leaf) by solution in spirits of wine, and examined the action of light on this tincture. He examined it also in ether and essential oils. He further examined the action of light on the coloration of fruit and flowers. Here was a new line of research opened up, which, however, lay dormant for about forty years, though when resumed it led to important results, and is now actively pursued with the aid of delicate apparatus of recent construction.

DE SAUSSURE.

Following the more strictly chemical side of Sené- bier's work, Nicolas de Saussure (son of the famous "alpine" H. B. de Saussure) took up, among his many investigations, the question of quantities of oxygen, carbonic acid, &c., involved in such changes as Sené bier had demonstrated. He introduced new methods* for determining the amount of oxygen present in gaseous mixtures. He clearly proved that plants put to grow in an atmosphere freed from carbonic acid do not increase the amount of their carbon. He found they cannot decompose carbonic oxide. Here was established clearly the fact that the source of carbon in plants is the carbonic acid of the atmosphere. How they obtain it, the conditions under which they obtain it, and what particular parts of the plants are concerned in the process, remained for investigation at a future period.

The actual composition of plants, roots, seeds, fruits, juices, and of vegetable products used as foods, drugs, and in arts and manufactures, was being actively prosecuted, and this was being done by many chemists in many lands.

Meanwhile the explanation of chemical changes, and of the constitution of compounds that chemists obtained from many sources and examined, was receiving attention from deeply-thinking minds. The composition of an immensely greater number of compounds than De Morveau and Lavoisier were acquainted with when their "system" and "nomenclature" (mentioned above) was devised, had become known. Their proposed definition, for example, of an "acid" was found to be too narrow. To the word "radical," which combines with an "acid" to form a "salt," it was found needful to extend a wider meaning, as there were found so many "compound radicals."†

One most important piece of work, celebrated from the discussions it raised, especially with Berzelius, was that by Liebig and Wöhler on the radical of benzoic acid. They showed that it contained a radical (C_6H_5O) common also to oil of bitter Almonds and other compounds.‡ To this they gave the name Benzo-yl. Here was introduced into

chemical nomenclature the termination yl, now so much employed. At the top of p. 262 they say they take the termination from *ωλγ*—matter. [The Germans equally use their own word "stoff," our "stuff," as in *wasserstoff* (hydrogen), &c., but not for radicals.] Following this kind of nomenclature we have hydrox-yl (HO), Meth-yl, Eth-yl, &c.*

The recognition of organic radicals was a very important step. While it gradually led to a change in nomenclature to the puzzle of those who did not closely follow chemical work, it opened up fresh subjects for enquiry. For a long time it was debated whether organic compounds obey the same laws as inorganic. No one now doubts that they do, but it is fully recognised they are far more complicated. *W. S. M.*

(To be continued.)

ORCHID NOTES AND GLEANINGS.

CYCNOCHES CHLOROCHILON.

A FIGURE of this Orchid appeared in the last volume of the *Gardeners' Chronicle*, at p. 145, showing a plant with an erect spike of two flowers, this being, so far as I have seen, about the usual number. A plant is now flowering at Kew which shows the variable character of the species—a character, however, common to the whole genus. It bears two pendent spikes of flowers, one with eleven and the other with eight; the flowers are much smaller than those in the above quoted figure. The sepals and petals are yellowish-green; the lip is creamy-white, with a dark olive-green blotch in the centre; and the column is about 1 inch long, with an inflated apex, where the pollen masses are inserted. The stem-like pseudobulbs are 12 inches high, with lanceolate, plaited leaves from 6 to 12 inches long. *W. B.*

BULBOPHYLLUM UMBELLATUM.

As none of the popular works on Orchids make any mention of this species, it is probably but little known under cultivation. It is figured in the *Botanical Magazine*, where it is said to have flowered at Kew in 1846; it has now appeared again, and proves to be an extremely pretty little Orchid—certainly not to be beaten by any other *Bulbophyllum*. The flowers are produced in a verticil at the top of a slender scape 6 inches high, each flower being about three-quarters of an inch across. The lower sepals are pale yellow, spotted with reddish-purple, and have the margins recurved; the upper sepal and the two petals (which are about one-third the size) are of a brighter yellow, thickly dotted with crimson spots. The purple lip is small, and is articulated in the manner characteristic of the genus. The species is a native of Northern India, and therefore requires cool-house treatment. It thrives well potted in peat-fibre and sphagnum.

CATASETUM RUSSELLIANUM.

No doubt the time will arrive when *Catasetums* will be amongst the most popular of Orchids, for the interest of Orchid cultivators is happily no longer restricted to those subjects which have merely bright colour to commend them. Certainly no genus of Orchids shows the marvellous structure and arrangements to secure fertilisation by insect agency in a clearer or better fashion than do *Catasetums*. The power certain kinds have of swiftly ejecting the pollen masses, when either of the horns attached to the column are touched, is in itself one of the most interesting phenomena in the floral world. Neither are they destitute of beauty; few Orchids, indeed,

produce a finer effect than *C. Bungerothii*, a recent introduction with large beautiful white flowers. It has been well figured and frequently mentioned in these columns. *C. Russellianum* is one of the older but still desirable species, having been introduced from Guatemala in 1838. It has pendent spikes of from twelve to eighteen flowers, produced from the base of the ovate pseudobulbs. The flowers are 3 inches across the sepals, these and the petals being pale green marked with lines of a deeper shade; the lip is similar in colour, and is slipper-shaped and somewhat inflated; at the sides and front the margin projects forward and is fringed. A plant with thirteen flowers is blooming now at Kew. Like the other species it enjoys abundance of warmth, moisture and especially light during the growing period, and a prolonged period of rest afterwards. *W. B.*

CATTLEYA LODDIGESII, Lindl.

This, the first *Cattleya* ever introduced into European gardens, is a fine autumn flowering plant, and may just now be seen in perfection in various collections. It was originally received from Rio de Janeiro by the Messrs. Loddiges, of Hackney, early in the present century, and may be found figured in their *Botanical Cabinet*, t. 337, under the name of *Epidendrum violaceum*. Lindley founded the genus *Cattleya*, on *C. labiata*, about the year 1822, at which time he added *Epidendrum violaceum* as a second species, under the name *Cattleya Loddigesii*. It is a rather widely diffused plant, and, according to the Messrs. Veitch, is spread over Southern Brazil from the Organ Mountains to the Rio de la Plata, from the Atlantic Ocean almost to the River Uruguay, growing in a great variety of situations, sometimes on trees, sometimes on bare rocks, both in shade and in full exposure to all weathers—circumstances which more or less influence the habit of the plant, and the size and colour of the flowers. No special treatment is required for its successful cultivation beyond that necessary for other ordinary species of the genus. *R. A. R.*

CATTLEYA AUREA MARMORATA.

There is now in the gardens of Lord Rothschild at Tring Park a most remarkable and exquisitely beautiful *Cattleya* of the *C. Dowiana aurea* class, which came in an importation received by Messrs. Shuttleworth, Carder & Co., Park Road, Clapham. It appears to be a natural hybrid between *C. aurea* and *C. gigas*, and those who know the superb *C. Hardyana* can picture this fine form by imagining a flower intermediate between it and *C. aurea*. The variety *marmorata* has large flowers, the ground colour of the sepals being yellow, the sepals slightly, and the beautifully crimped petals heavily, marbled with dark rose colour. The finely-expanded labellum is violet-crimson on the front portion, and golden-yellow veined with purple on the basal half. The whole lip has a purple margin. In point of beauty and fragrance it is equal to the best *Cattleya*; and Mr. Hill is hopeful that similar forms will appear among the other plants received from the same importer. *Cattleyas* are well grown by Mr. Hill, and these newcomers could not get into better hands. When in an article on large-flowered *Cattleyas* in the *Gardeners' Chronicle*, p. 404, September 29, 1883, I predicted the coming of these intermediate forms between *C. aurea* and *C. gigas*, the present magnificent variety is just the plant I had in my mind. *James O'Brien.*

CYPRIPEDIUM MITEAUANUM, Lindenia, t. 146.

Leaves oblong, green, with dark spots, peduncles rufous, hairy; flowers $4\frac{1}{2}$ inches across, upper sepal broadly ovate, acute, white, with numerous purple stripes; petals linear oblong, red-violet, with tufts of dark hairs on the edge; lip reddish-brown, shining.

FRUIT AND VEGETABLE EXHIBITION AT BARNET.—An exhibition of the above on a large scale is being organised by Mr. John Munro, formerly of Potter's Bar, to take place at New Barnet at the end of September or the beginning of October. A great deal of local support is being promised, and a schedule of prizes will shortly be issued.

* He used sulphide of potassium and phosphorus as agents in analysis.

† Much of the work that Lavoisier and his friends did in classification and nomenclature cannot even now be overlooked without the chance of missing the meaning of words we still use, such as "acid," "salt," "base or radical." For the son of a cultivator, on the modern side of his school, here is a holiday amusement. "Le mot acide sera le nom générique; chaque acide sera ensuite différencié dans la langue comme il est dans la nature par le nom de sa base ou de son radical." This is on p. 58 of vol. i. of the four volume edition mentioned. The context will supply the explanations. A sister or cousin who carried off a French prize last half may perhaps help. How plants obtain their carbon was worked out while carbon dioxide was still known by Lavoisier's name "l'acide carbonique," and oxygen was called "l'air embaumé respirable," "l'air pur," or "l'air vital." So, historically, the question of nomenclature is not altogether unimportant.

‡ Untersuchungen über die Natur der Benzoesäure. *Ann. Chem. Phys.*, vol. 13, 1832, p. 244.

* In floriculture "fancy names" are used which have no meaning. It may be well to mention that names used by chemists have a definite meaning which refers to the composition of the compound named.

Lothar Meyer has said, "chemical symbols and formula which a few years ago received such prominence, are now regarded with indifference, since what was formerly expressed symbolically and indistinctly, or even without proof or clearness, by their aid can now be expressed in clear words with fixed meaning." But query? Do all chemists conform to this fixed meaning?

CULTURAL MEMORANDA.

WALLFLOWERS.

Of the plants raised from seed—sown in boxes placed in heat, and the seedlings subsequently pricked out, 6 inches apart, on a few inches of good soil, placed above a thin layer of short dung, resting on a hard soil or cinder bottom, in a sunny aspect—some of the bushiest should now be lifted with nice balls of soil, and be potted into 6-inch pots. After watering them, stand on a bed of coal-ashes, cover with a frame, and shade from sunshine until the roots have pushed into the fresh soil, when free ventilation must be afforded them, watering when necessary, and giving weak liquid manure two or three times a week after the plants are well rooted. A portion of the Wallflower plants thus grown should be put into a greenhouse, or, better still, a pit, about the end of November, where a temperature of from 40° to 50° is maintained, and where the plants can have a position near to the glass. The presence of this familiar and deliciously-scented harbinger of spring in the dwelling or conservatory in mid-winter is always appreciated. Belvoir Castle, of a soft yellow colour, and Harbinger, a dark brown one, are desirable varieties.

VIOLETS.

No time should be lost in lifting Violet plants which were planted out in the spring, and planting them with suitable balls at 12 inches apart, in frames from which frost can be kept out. The leaves should be but a few inches from the glass, and the roots before planting shortened back a little—those protruding through the balls of earth—before planting, and the soil should be made firm in planting. The runners must also be pinched back to the crowns, and afterwards be kept persistently pinched off during the next six months to favour the production of blooms. After planting, water the bed to settle the soil, and shade from sunshine for a few days.

RICHARDIA ÆTHIOPICA.

These should now be lifted with a mass of soil and roots in proportion to the size of the pot into which it is intended to pot them, using a mixture of four parts of good loam and one of leaf-mould and short dung. The pots should be well crocked, and the soil worked in amongst the roots. A large proportion of my plants are potted into 12-inch and 9-inch pots, the remainder being put in 7-inch and 6-inch pots, for arranging on the side stages of conservatory and various other purposes. After potting stand the plants under a south wall, or where they will not sustain injury from a few degrees of frost and where they can be shaded from sunshine until the roots have pushed into the fresh soil, when full exposure is best for them. The plants, when placed in position, should be watered to settle the soil about the roots, and in due time they should receive copious supplies of tepid liquid manure, to enable them to develop large flower-spikes. The plants should be housed before they are likely to get injured by frost; it will not be safe to subject them to more than 3°.

EUPATORIUMS, BOUVARDIAS, AND SALVIAS.

Where these are grown in the open ground they should be taken up now and potted, employing a compost of three parts of fibry loam and one of leaf-soil, with a sprinkling of sharp sand added, afterwards putting the plants in a pit, where they can be kept close and shaded for a few days, until re-established, when full exposure is best. After the Bouvardias have got well established they should have a minimum temperature of from 55° to 60°, according as the weather is cold or mild, with a proportionately high day temperature—say, from 70° to 75°. Should aphids put in an appearance on the plants, fumigate a couple of evenings in succession with tobacco-paper, following this with a liberal use of soft-water and the syringe, and free ventilation

for a few days, weather permitting. The Eupatoriums and Salvias should be put into the greenhouse, or anywhere out of the reach of frost, where they can have abundance of light and air for the time being. *H. W. Ward.*

CROCOSMA AUREA.

This is a useful plant to grow either for the greenhouse or for cutting purposes, as it affords a shade of colour seldom met with in anything else, and the lightness of its tall spikes and flowers makes it an admirable flower for vases. When required for the last-named purpose, it is best to grow it outdoors, for though not quite hardy, it is sufficiently so to stand in certain situations, the most suitable being in a border under a sunny wall, where, with only slight protection during winter the bulbs will escape injury, and come up very strong in the spring. To help to ensure this, it is a good plan to drain before planting, and to prepare the soil, as the Tritonia, as it is generally called, will not bear excessive wet when at rest, and likes a free sandy loam, in which it sends out its creeping roots, and it then spreads with great freedom.

When grown in pots the bulbs should be potted in 6 or 8-inch pots, and placed from six to nine in a pot, covering them to a depth of 2 inches. The pots may be stood in a cold frame and left till the leaves show, when water should be afforded in gradually increasing quantity, and at the end of May, or before, they may be plunged in the open ground and there left till they began to show bloom. Treated in this way they are not subject to red-spider, as is the case when grown under glass, and which soon spoils the foliage. *J. S.*

RUDBECKIAS.

There are several varieties of these, but there is only one of high merit, and that is *R. Newmanni*, which deserves a place in any collection of herbaceous plants, as not only is it exceedingly showy when it blooms, but it comes into flower late, and will stand any amount of rain or bad weather without looking any the worse. The habit of *R. Newmanni* is dwarf and spreading, and the plant has large rough leaves, the flower-stems being branching, and rising to a height of from 1 to 2 feet, and these are terminated by large bright yellow blooms, with a conspicuous black cone or disc in the centre. The readiest way to propagate this Rudbeckia is by division, and this may be effected late in the autumn or spring, at either of which seasons the plant may be cut through with a sharp spade, and the side portions taken away and replanted at once. Like most herbaceous subjects it is fond of good soil and plenty of depth, but plants of it will be found to do very well under adverse conditions, as it is tenacious of life, and only suffers where it cannot get the requisite moisture. *J. S.*

TREES AND SHRUBS.

CONIFERS.

From the plantations at Ochertyre, near Crief, Mr. Croucher sends us a hamper of branches of Conifers, showing their vigorous growth and suitability for the climate of Perthshire. Among them are unusually fine specimens of *Abies* (*Picea* of gardens) *cephalonica* with foliage of great size and substance and of pale green color. The young cones are of an exquisite light-brown colour shot with pink. In the South this tree is often spring-tender; perhaps in the North it does not start into growth so soon, and hence escapes injury; at any rate, the specimens from Ochertyre seem to indicate that the tree would not only be ornamental but valuable for timber.

Abies grandis is remarkable for the very rich deep black-green of its foliage, and for its greenish-brown cones.

The Douglas Fir is represented by two forms, the one known as *Stairii* and another of similar character, but which is even more remarkable in the pale yellowish tinge of the foliage than *Stairii*.

Abies Lowii, *alias* *Parsonsiana*, &c., is sent to show the great difference between it and the true *A. concolor*, which latter has long leaves, equal in length, alike in colour on both surfaces, stouter branches, larger buds, and other characteristics pointed out to us and recorded in these columns by Mr. Barron. These differences in extreme cases are sufficient to warrant a distinct name, but in looking through seed-beds or nursery rows we have always found so many intermediate forms as to be puzzled to give a name to any particular specimen.

Picea Engelmanni is represented by some finely-grown shoots of a pale fawn colour, the slender bluish leaves all appressed, and (when stroked the right way) soft to the touch. The light-brown buds are ovoid-conic, and not resinous. In the South this tree grows slowly, and seems tender, while its near ally, *P. pungens*, (often called *Parryana* or *commutata*) is much more robust. The green form is very handsome, but the blue form, *pungens glauca* (*alias* *Parryana glauca*) is decidedly the most beautiful of its race, and keeps its colour throughout the year.

Picea excelsa aurea, like the form called *finlandensis*, is remarkable for the very deep orange colour of the two or three-year-old shoots, the shoots of the year being of a pale fawn colour deepening in time into the rich colour just mentioned.

P. ajanensis is sent under the name *Alcockiana*, seeds of the two having been originally inadvertently gathered or mixed under the same name. What is now recognised as *ajanensis*, is a flat-leaved Spruce with the young shoots fawn coloured, those of the two and three years pale orange; the leaves are appressed, and more or less parallel with the branches on the upper surface spreading beneath. In this species the upper leaf-surface is silvery white, the lower deep green. The female cones in spring are erect, of a lovely tint of carmine. As they ripen they lose their brilliant colour, and occupy the ends of the branches, either standing out horizontally, or being more or less deflected. This is one of the most beautiful Conifers in cultivation, and the rapidity and vigour of its growth, as shown in the specimen before us, seem to indicate it as of great value for timber also.

P. Menziesii is a better known tree of similar character, but with more spreading, 4-sided sharply-pointed leaves, the cones more slender, and its scales more gradually pointed and concave at the back.

Tsuga Mertensiana, *alias* *Albertiana*, is remarkable for its very graceful pendulous branches, with silvery leaves and small cones like Hops.

THE SEED TRADE.

THE FOREIGN GRASS AND CLOVER CROPS.—Advices from Darmstadt, the head-quarters of German Grass and Clover seed growing, state that the crops are later this year than for many years past, the retarding season having been felt as much there as in our own country. Heavy and uninterrupted rains have caused the delay; in the early part of the season and up to the middle of June there was a great lack of moisture, and the drought prevented development. The season has proved quite the reverse of last year, when the spring was very wet, followed by a summer of distressing drought.

The earlier crops are somewhat inferior in quantity and quality to those of last year, the grain lighter in weight and lacking colour. Careful cleaning has improved the samples, and they are scarcely less inferior to the best produce of former seasons.

The crop of *Dactylis glomerata* (Rough Cocksfoot-grass) is a short one; the quality of American seed bad, that of New Zealand in every respect superior to last season's, as well as larger. The earliest shipments are decidedly good; later ones are said to be certain to be lighter and inferior in quality. The crop of *Alopecurus pratensis* (Meadow Foxtail-grass) amounts to about the same quantity as last year; the seeds will be heavier, and show good growing qualities. From some districts poor samples have come, and it is advised that the lighter seeds

be avoided, especially as the bulks have at times a better and more attractive appearance than the heavy samples. Of *Festuca pratensis* (Meadow Fescue-grass) the quantities harvested this season are reported to be much below those formerly brought to market, and this applies to home-grown as well as to the American seeds. In both countries the low prices which ruled did not pay the growers, in consequence the greater part of the seed growing districts have been ploughed up to substitute other produce. The crops of *Festuca ovina* (Sheep's Fescue) and *F. duriuscula* (Tall Sheep's Fescue), are decidedly smaller than usual; while the quantity of *F. ovina tenuifolia* (Narrow-leaved Fescue) harvested is so very small that the ordinary English demand alone cannot nearly be supplied. *F. elatior* (Tall Fescue) has been harvested in Germany in small quantities, but the quality is very good; the value is to some extent discounted from the fact that the New Zealand crops are heavier than heretofore, but the seeds are wanting in quality, and appear to be much affected with ergot—a disease to which Rye is subject, but which is not at all uncommon among other grasses. The quotations for this grass are lower than heretofore, and a large demand is anticipated.

Poa pratensis (Smooth-stalked Meadow-grass) has been harvested in good condition and in fair quantities, so there will be no lack of suitable seed. *P. nemoralis* (Wood Meadow-grass) is, on the other hand, again very scarce; and desirable, true and un-mixed samples are seldom to be met with. *P. trivialis* (Rough-stalked Meadow-grass) will be about the same as last year, and fine true seed can be offered at reasonable prices. The demand for this grass is increasing yearly.

Of *Anthoxanthum odoratum* (Sweet Vernal-grass) the crop of true genuine seeds will be of the same limited quantity as last year.

Cynosurus cristatus (Crested Dogtail-grass) will be about the same yield as last year, but the seed will be lighter in weight and darker in colour.

Phleum pratense (Timothy-grass) will be a good yield.

Clover seeds have sustained serious damage by the heavy rains, but *Minette White* and *Alsike Clovers* have suffered most. What little has been harvested is of poor colour; and a good sample is scarcely to be met with. It is yet too early to form a definite opinion as to the yields of *Lucerne* and red Clover seeds; but, in consequence of the incessant rains the plants show great rankness of vegetation, without, however, apparent formation of flowers. So it is feared a bad harvest of these will have to be recorded also.

OPUNTIA FRUITS.

OUR illustration shows an example of independence and self-containedness not very rare among plants, and especially among Cactaceæ. The illustration (fig. 43) is taken from a specimen exhibited by Mr. D. Morris before the Scientific Committee in the course of the summer, and shows how, from a fruit containing seeds in the interior, roots were produced below, and young shoots from the upper part after the fall of the corolla and stamens. One single joint or internode in this case thus suffices to form an entire plant equipped at all points. The following extract from Masters' *Vegetable Teratology* may be of interest in this connection:—

"The fruits of *Opuntia Salmiana*, *O. fragilis*, *O. monacantha*, and of some species of *Echinocactus*, have been observed to form small fruit-like branches around their summits. M. Napoléon Doumet describes the fruit as ripening as usual, but as being destitute of seeds in the interior [seeds were abundant in Mr. Morris's specimen]; after a little while the fruit begins to wither, and then a circle of small buds, like those of the stem, may be seen at the top of the fruit, each bud springing from the axil of a little tuft of wool and spines found on the fruit. These little buds elongate into long shoots, produce flowers

the following year, which flowers exhibit the same peculiarity. Gasparini and Tenore are said to have recorded the same fact as long since as 1832. The specimen from which the figure was taken produced its fruits in the Royal Gardens at Kew, and is now preserved in the museum of that establishment. The adventitious growth in three cases appears to arise from the tufts of spines, which, it has been suggested, are the homologues of the sepals. There can, how-

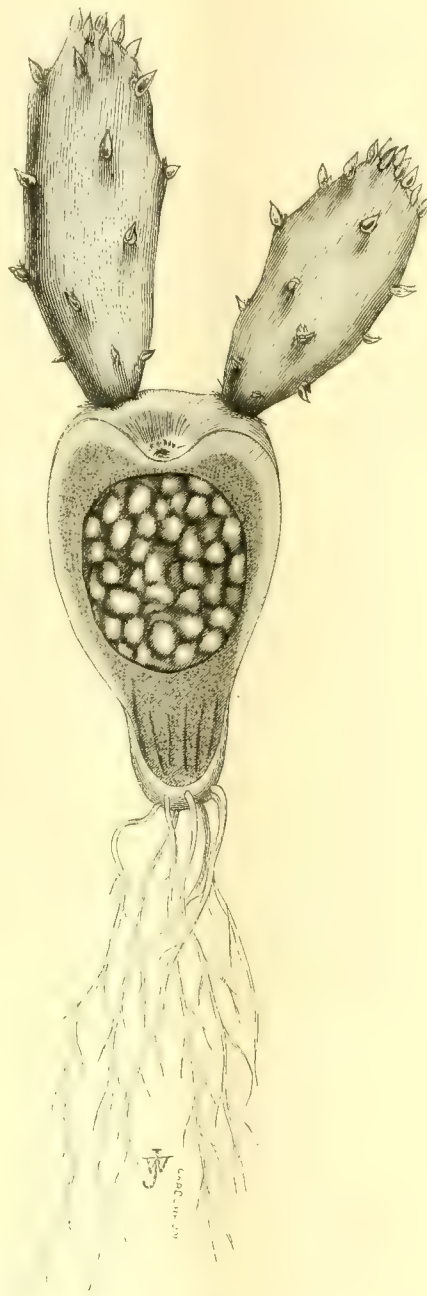


FIG. 43.—FRUIT OF OPUNTIA CUT OPEN (SEE TEXT).

ever, be little doubt the outer and lower portion of the fruit of *Opuntia* and its allies is a dilatation of the flower-stalk."

TRADE NOTICE.

MR. GEORGE BOND has been appointed Manager to the nursery and seed business at the Calne Nurseries, Wilts, in succession to Mr. R. Brown.

NOVELTIES.

THE following new introductions appear in the Catalogue of L'Horticulture Internationale of Brussels:—

- ACALYPHA TRIUMPHANS.—Stove foliage plant.
- AGLAONEMA NEBULOSUM, N. E. Brown.—Stove foliage plant, Aroid.
- ALOCASIA GIGAS.—Stove Aroid.
- ALOCASIA LINDENI.—A New Guinea Aroid, with handsome foliage, having ivory-colored petioles and yellowish veins.
- ALOCASIA LUCIANI X.—A cross between *A. Thibautiana* and *A. Putzeyi*.
- ALOCASIA MARGARITE.—Stove Aroid, with fine foliage.
- ALOCASIA VILLENEUVEI.—Stove Aroid, with fine foliage.
- BULBOPHYLLUM GRANDIFLORUM.—Extraordinary Orchid.
- COLOCASIA DEVANSAYANA.—Stove Aroid, fine foliage.
- CRINUM MASSAIANUM.—A Tropical African species, with white flowers striped with crimson.
- DENDROBIUM STRELOCERAS, var. ROSSIANA.—Differs from the type in its white flowers.
- DIANTHERA BULLATA.—Acanthaceous stove plant, with fine foliage.
- GALEANDRA D'ESCRAGNOLLEANA.—Brazilian Orchid, segments yellow, lip yellow, spotted with rose.
- KENTIA ELEGANTISSIMA.—Elegant stove Palm.
- LABISIA ALATA.—Ornamental stove shrub.
- LABISIA POTHOINA.—Ornamental stove shrub, allied to *Ardisia*.
- ODONTOGLOSSUM BODDERTIANUM.—Segments yellow, spotted with brown; lip white, spotted with purple.
- PAPHINIA LINDENIANA.—Stove Orchid.
- PHRYNIUM VARIEGATUM.—Stove foliage plant.
- PIPER RUBRO-VENOSUM.—Stove climber; leaves green, marked beneath with rose-coloured nerves.
- RODRIGUESIA BUNGEROTHII.—Stove Orchid.
- SCHIZOCASIA REGNIERI.—A Siamese Aroid, with ornamental foliage.

SHRUBLAND PARK.

[SEE SUPPLEMENTARY SHEET.]

SIR GEORGE BROKE MIDDLETON was a man of note, who had done good service to his country, a man who well earned the respect and confidence he won, but it is questionable whether, to the mind of the ordinary gardener, Shrubland is not more intimately associated with the names of Donald Beaton and T. Blair than with that of the former proprietor of this noble estate. And this is not the only paradox about Shrubland. In a county not particularly renowned for picturesque beauty, Shrubland offers views of hill and dale, wood and water, which of their kind, cannot be surpassed anywhere. The park is extensive, the Spruces and Scotch Firs effective. The mansion is a noble structure, reconstructed by Sir Charles Barry, and the differences in level demand the introduction of terraces and steps which add great dignity to the mansion. What those terraces were twenty years ago is detailed at great length in our volumes for 1867 and 1868. At that time they formed one of the finest examples of architectural gardening to be found in the country. Looking through the record it seems as though the style of gardening then adopted, appropriate as it was in kind, was overdone in degree, and this has led to its abandonment or modification. How it looks now, when a different but hardly so appropriate a system is adopted, we are not in a position to state, our visit having been paid in spring. The two views we now give show what a fine feature a long, well-proportioned, straight grass walk may become edged by lofty *Arbor-vitæ* and Cedars, which give the necessary variation in outline, while the contrast between the sombre Yews and the unfettered flowing festoons of the Roses is delightful. It forms no part of our purpose to attempt to describe Shrubland—descrip-

tions of lovely landscapes are seldom lovely themselves, and rarely convey any idea to those who have not seen them. The gardens, too, have been shorn of much of their former magnificence, but the exquisite landscape views remain, and it would be a great oversight to omit mention, even in ever so cursory a notice, of the grandest Sweet Chestnuts to be seen in the country—such boles! such a world of knots and cracks! such spiral furrows ploughed in their bark! What the age of these veterans may be we cannot say. A thousand years is attributed to them, but only vaguely. Probably they are some few centuries short of the assigned age; but, in any case, on looking at these noble survivors of bygone ages, the thought that Chestnut-wood might, after all, have been used for building purposes in England in those days, would arise, and so the glory of the trees became associated in one's mind with the marvels of architectural beauty and with the records of history in a manner as suggestive as it was interesting. One of these giants measures 46 feet in circumference at the base.

One of the finest modern developments of Shrubland is the planting both sides of a ravine with hardy Bamboos intermixed with *Dracænas*, *Cannas*, *Maize*, *Funkias*, and other bold and graceful plants. This bids fair to form one of the most beautiful features of the place, and owing to its situation possesses that highest form of beauty—beauty of appropriateness. Shrubland is also one of those places that has a somewhat out-of-the-way interest—an interest that would not be felt but by a naturalist, for here it was that a Barrington Peach produced on one branch a Peach and a Nectarine: a "sport," says the gardener—a dissolution of partnership, a separation of heretofore mixed elements, says the botanist. But how? Why? Why was the phenomenon not repeated? If one lived as long as those Chestnuts, time would not suffice for the explanation of the mysteries of vegetable life!

PLANTS AND THEIR CULTURE.

CYCLAMEN PERSICUM.—In raising plants of *C. persicum* and its varieties, to bloom within fifteen months from the time of sowing, the best practice is to sow the seed in the autumn, soon after it is ripe, in pans or boxes which have been well soaked in water and properly crocked, and filled with light loam and leaf-mould, or peat with sand in about equal proportions. Sow thinly, and fairly well cover them, gently pressing them into the soil; the pans should afterwards be very lightly watered, and stood or plunged in some moisture-holding material near the glass, in a temperature of about 60°, special care being taken to prevent the soil getting in the least dry, covering with a piece of glass; but they germinate more freely, if kept sufficiently moist, without such covering. As soon as the young plants have developed a true leaf, they should be pricked off into larger pans or boxes, still using a compost similar to that employed in the seed pan. Return them to the same temperature, but when they have made another leaf the temperature may be allowed to fall a few degrees, and when they have made a nice crown of leaves they should be potted off singly, using pots suited to the size of the plants. At this and subsequent pottings use a rougher turfy compost, one half of it being loam, with plenty of sharp sand, and if a little quantity of some prepared fertiliser be well incorporated the compost will be improved. The potting should be done firmly, leaving the crown of the corm level with the soil. From what has been said it will be evident that low-roofed structures are best suited for these plants; indeed, excellent results may be had with frames even in winter, provided they have sufficient hot-water piping to prevent the temperature falling below 45°, but with a low temperature considerable care must be exercised in watering and in maintaining the proper amount of atmospheric moisture. Should either be in excess damping-off will occur. When coming into flower a mild, airy atmosphere is indispensable to prevent spotting by damp. If the stock is got up annually from seed (which is preferable to keeping old plants) the first named temperature must be maintained, otherwise little progress will be made. Any plants intended to flower this

season, and which are not yet in their flowering pots, should be pushed on with all diligence. The Cyclamen is very subject to insect pests, and which, if they once obtain a footing, and measures are not speedily taken against them, quickly spoil the plants. As a preventive thorough syringing during growth is most advisable, and when that may not be done there is no more effective plan than to sponge and wash them in a weak solution of some kind of insecticide. Having recently experimented with insecticides I have obtained good results from the soluble paraffin prepared by the Agri-Horticultural Co., of Glasgow, but others are equally good, especially tobacco-juice when of certain strength,—but this article varies considerably. If fumigation is resorted to it must be carefully done, as the leaves are easily injured. *F. Ross, Pendell Court.*

THE HARDY FRUIT GARDEN.

As the ingathering of Apples and Pears will soon begin the fruit-rooms should be put in good order at once, whitewashing the walls and ceilings and cleaning the shelves, but not using much water, as it will soak into the wood; and, unless the shelves can be thoroughly dried, their surface soon becomes covered with a white mould, which is very injurious to fruit, especially Apples. If water be used it should be during the summer season. It is always a good plan to have the fruit-room for Apples and that for Pears quite apart, for all that Apples require is merely to have the frost kept from them, whereas Pears, generally speaking, require a room where a little artificial heat may be applied, so that the average temperature can be kept at about 45°. In these gardens there are two such rooms; that for Pears has a 3-inch flow and return hot-water pipe running through it, with a valve placed in an adjoining shed, so that the heat can be regulated to a nicety; the Apple-room is unheated: it occupies a northern position, and the walls are 9 inches thick. In addition to the ordinary entrance door we have another, which fits in tightly in the same frame, so that there is a space of 6 inches clear between the first and second door. By using this door, closing the ventilators, and putting a shutter over the window we are enabled to keep out frost, and the Apples keep in a sound and plump condition until the season is very far advanced, or Apples come again. When speaking of Pears requiring a warmer temperature than Apples in which to ripen, I may mention the following few varieties that are really better flavoured when ripened in the cooler temperature of the Apple-room, viz., *Seckle*, *Maréchal de la Cour*, *Dana's Hovey*, *Althorpe Crassane*, and *Beurré Hardy*. Fine weather having now set in advantage should be taken of it to give all fruit quarters a good hoeing, and the weeds should be raked off, for they will take root again if left on the ground. All fruit trees on walls, as well as pyramid and bush trees, should be looked over for the last time, and the young growths stopped back closely to assist the fruiting spurs to plump up their buds. *A. Ward, Stoke Edith Park.*

FRUITS UNDER GLASS.

PEACHES.—The wood on the earliest trees will now be well matured, and ready to drop; and a few Larch twigs may be drawn lightly up the shoots to detach any of the ripier leaves, so as to allow of the sun having free play upon the shoots. If the sashes of a house have been removed, they should now be replaced, but the fullest ventilation should be afforded, and the sashes closed only during heavy rain. In houses where the roof is not portable, attention must be given to watering the borders, even if the foliage is falling, as the roots are still active and the buds in need of nutriment. Now is the time to prevent bud dropping by keeping the borders in a state of medium moisture. Where the trees are old and have carried a full crop of fruit, an occasional application of liquid manure will prove very beneficial. Trees from which the fruit has recently been picked, should have all the superfluous shoots removed. The present is a good time to attend to the borders, if the trees are not in a satisfactory condition. Hazel loam of good quality with an addition of old mortar rubbish will be found a suitable soil for the successful cultivation of the Peach. Where the soil is of a tenacious nature a large

addition of charred garden rubbish, brickbats broken to the size of pigeon eggs, together with the finer particles, and a liberal admixture of mortar rubbish will be requisite to keep the soil from running together. It may not be necessary to wholly lift the trees, but if the roots have made their way through the drainage, they must be brought to within a short distance of the surface. Trees in late houses will require some slight assistance of fire-heat to maintain a sufficiently buoyant atmosphere, and plenty of ventilation. Expose every fruit to the sun as much as possible; look sharply after blue-bottle flies and wasps, taking steps to trap or exclude them from the house.

Figs.—The earliest trees will now have mostly shed their leaves; they should, however, be frequently syringed, and have occasional applications of manure-water. Trees which are finishing their crops should be afforded a genial dry atmosphere, so that the proper flavour may be imparted to the fruits. The syringe must not be used so freely as formerly, and where the fruit is nearing maturity water should not touch it. Let the fruit be quite ripe before gathering; they require at this season of the year a much longer time to finish than during the summer months. It is not too late to remove all spray growth from trees which have just finished their second crop, and if the trees are clean, the use of the syringe may be largely dispensed with, and a nice warm atmosphere maintained by fire-heat and sun-heat, with abundance of air, until the foliage falls naturally. Remove all fruits which are visible. Trees, walls, trellises, borders, and glass in the early house should now be thoroughly cleansed, and any necessary painting done. *W. M. Baillie, Luton Hoo.*

THE KITCHEN GARDEN.

CARROTS.—Where soils are cold and wet, these roots should now be taken up and stored, any excess of moisture at this season causing them to split, especially if it occur after a period of fine weather. In sandy soils, such as the Carrot delights in, the short-rooted varieties may be pulled up by hand, but in others it is best to remove some of the soil away from them with a fork previous to doing so. The tops should be cut carefully so as not to injure the crown, and any soil adhering to them should be cleaned off; they will then be ready for storing. I find that the roots keep the freshest when they are put up in ridge-shaped heaps in any cool position outdoors. These should be about 3 feet wide at the base and 2½ feet high. The roots should be carefully handled so as not to bruise them, and packed in layers with the crowns outwards. Enough straw should then be drawn straight, and laid over the sides of the heap to prevent the soil from touching them, and bunches of straw fixed for ventilators along the top of the ridge about 4 feet apart. The sides should then be covered over with 6 inches in thickness of soil. In this way Carrots will keep good until late in the spring.

Beet should be carefully lifted and stored in a manner similar to the Carrots before severe frost is expected, this being the most tender root the kitchen gardener has to deal with. Great care is required in storing this vegetable so as not to break or bruise the roots in any way; and the tops should not be cut but twisted off with the hand.

Cauliflowers.—A piece of ground in a sheltered and warm position should now be prepared for planting these under hand-lights, by digging in a plentiful supply of manure, preferably that from the cowyard, and working the soil down well with the spade as the work proceeds. *W. H. Divers, Ketton Hall, Stamford.*

GREEN PEAS.—The district round Maldon, in Essex, is famous for its green Peas, and a month back the Great Eastern was running three trains a day loaded with green Peas only. This summer the crop has been heavier than ever; and one single day, August 4, saw the biggest consignment on record, amounting to 578 tons, all of which were safely delivered by 7 o'clock the following morning. It shows the extraordinary character of the present summer that the entire month of August last year only accounted for 16 tons, while August, 1884, and August, 1885, had only a total of 10 tons between them. *Murray's Magazine, September.*

Advertisers are specially requested to note, that, under no circumstances whatever, can any particular position in the paper be guaranteed for advertisements occupying less space than an entire column.

GARDENERS' CHRONICLE OFFICE TELEGRAMS.
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Post-office Orders and Postal Orders should be made payable at the Post Office,
No. 42, DRURY LANE.

APPOINTMENTS FOR THE ENSUING WEEK.

MEETINGS.

TUESDAY, SEPT. 25 { Royal Horticultural Society: Fruit and Floral Committees.

SALES.

MONDAY, SEPT. 24 { Dutch Bulbs, at Stevens' Rooms.
 Dutch Bulbs, at Protheroe & Morris' Rooms.
 Dutch Bulbs, at 123, Fenchurch Street, by Messrs. Smail & Co.

TUESDAY, SEPT. 25 { Greenhouse Plants, at The Hall, Dulwich, by Stevens.
 Orchids in Flower, at Protheroe & Morris' Rooms.

WEDNESDAY, SEPT. 26 { Dutch Bulbs, at Stevens' Rooms.
 Dutch Bulbs, at 123, Fenchurch Street, by Messrs. Smail & Co.
 Orchids, Lilies, &c., at Stevens' Rooms.

THURSDAY, SEPT. 27 { Dutch Bulbs, at Protheroe & Morris' Rooms.
 Greenhouse Plants, at the Brunswick Nursery, Tottenham, by Protheroe & Morris.

FRIDAY, SEPT. 28 { Imported Orchids, at Protheroe & Morris' Rooms.
 Dutch Bulbs, at 123, Fenchurch Street, by Messrs. Smail & Co.

SATURDAY, SEPT. 29 { Dutch Bulbs, at Stevens' Rooms.
 Dutch Bulbs, at Protheroe & Morris' Rooms.

Botany and Horticulture. THE address delivered before the Biological Section of the British Association by the Director of the Royal Gardens, Kew, will be read with interest by many classes of readers. As was befitting a botanist holding such a position, Mr. DYER alluded in his address to many departments of his subject. By so doing, he did much to enlighten the general public, who look upon botany as an agreeable recreation, barring the hard names! Mr. DYER, at any rate, takes a juster and more comprehensive view of his subject, and displayed it before his audience as forming one department of biology, and one which, while in no degree inferior to its sister science, zoology, forms the appropriate introduction to its study. Mr. DYER's address was comprehensive, but it was long—we do not say too long, although its length forbids us from inserting more than a moiety, and compels us to leave out the portions relating to fermentation, not by any means as the least important, but as the part which, under existing circumstances, has the least direct interest to our readers.

Mr. DYER did not wholly ignore horticulture, nor, considering the wide scope of his address and the limited time at his disposal, could he have consistently devoted much more space than he did to its claims as a part of biological science. We hope, however, the opportunity will come for the Director of Kew to stand forth, as he is so well fitted to do, and enforce upon the botanists and physiologists the supreme importance of horticulture as a branch of biological science. That the public should look on horticulture simply as a means of supplying their requirements, æsthetic or material, is intelli-

gible enough; that commercial men should regard it as a means of making money is equally legitimate. To their honour be it spoken, many of them do not regard this as their only object. Scientific botany would be very materially weakened by the abstention of the importers, the raisers, and the professional growers of plants, whether new or old.

The importers furnish the means to the botanist of vastly increasing his knowledge of certain groups. Our knowledge of Orchids, for instance, without their aid, would not now be so very much greater than it was in the time of LINNÆUS. Whole districts would be even now botanically unknown were it not for the labours of the collectors sent out by our plant merchants.

The raisers of new plants, those who develop existing materials into entirely new combinations, by hybridisation, or by cross-breeding, or even by selection only, contribute still more remarkably to biological science. They even create new types of structure. Look at the tuberous Begonias, for instance—a quarter of a century ago no such thing existed, now they form a distinct type. It will be said that they do not exist in Nature—perhaps not, but in any case do they not afford an illustration of the way in which new types may have originated, or do originate, in Nature?—do they not furnish a very plausible explanation of the way in which natural variations have been brought about? The *Gentiana acaulis* alluded to by M. CORREVON in a preceding column affords another illustration of a variety that is constant under many variations of soil and circumstance, which has been so for many years, but which has no exact counterpart in Nature. Consider also the "sports" with which the gardener has so much to do; the word is unfortunate, it is true, but its meaning is sufficiently well known. Do not these productions throw material light upon the nature and range of variation in plants?

Look back to the interesting statement that Mr. NOBLE placed on record in our columns a week or two since as to the history and peculiarities of the white variety of JACKMAN'S Clematis, and see whether that does not illustrate the cause of variation in a remarkable degree. Look, too, at the persistent efforts of the seedsmen and raisers to secure a new Pea, or a Strawberry, or what not, that shall be earlier or later, even but by a few days—which shall be suited to this, that, and the other climate and soil—and see how constant and continuous is the progress of modification they effect. We may smile sometimes at the eagerness with which a plant that flowers a day or two earlier than another is brought under notice and its qualities extolled; the change is sometimes almost imperceptible, and the advantage as infinitesimal; but look back a generation, or even ten years, and see then how much has been effected by the slow but constant accumulation of progressive modifications. If man can do so much in his brief span, what may not be done in Nature?—what must not have been done in the countless ages that have rolled over our globe?

And from an opposite point of view, how much has been effected in the way of fixity by the labours of the gardener? We must not pursue the subject here, but we may urge that if the fixity of Egyptian plants, as illustrated in the tombs and mummy-cases of the Nile Valley, be adduced as an illustration of permanence of character, dependent on the existence of like conditions, surely, the labour of the gardener who, in a degree at least, secures a corresponding

amount of fixity under far more unfavourable conditions, is worthy of recognition at the hands of the representatives of science. The great naturalist of our century—DARWIN—did recognise our work. His works, his arguments, are, to a very large extent, based upon the observations of the gardeners as recorded in the horticultural Press. But the botanists, and especially the rising school, seem disposed to ignore the vast body of evidence collected for them by the gardener, and which it is their business to collate and render available. The British Association should offer a means of checking this one-sided specialism.

And then take the grower: what chemist, what physicist but would rejoice if he could have the handling of so vast a mass of evidence as those that present themselves to the grower? Of course, in the garden, still less in the field, there cannot be the precision that there is in the laboratory. It is impossible to eliminate conflicting elements; it is not within our power to isolate plants as the chemist isolates the substance he wishes to investigate; but nevertheless the gardener can do and does much to lift the plant out of the struggle for existence, and to study it as it grows apart from hostile or competing influences.

The immense field for his studies compensates in some degree for the inevitable want of precision. The plant grower, in fact, is every day of his life performing or watching experiments of the utmost importance as regards plant-life. One great advantage of this lies in the fact that, in prosecuting his business, he is engaged in no mere barren brain-twisting, but he is contributing materially to the solution of the problems of life and to the welfare of his fellows, while the keener his investigation, the greater the profit to himself; so that, both from the higher point of view of the advancement of science, and the more selfish standpoint of self-interest, the plant grower is doing excellent work.

The inter-relations between vegetable physiology and practical culture are indeed numerous and weighty beyond computation; and it is time, and more than time, that the professors and representatives of horticulture should assert their claim for consideration, if not among the pure sciences, at least among those applied sciences which gave so distinguished a representative this year to the British Association in its President, Sir FREDERICK BRAMWELL.

KEW "BULLETIN."—The last published number (September) contains further details as to the fruit supplies of various colonies. Dominica is the nearest available fruit-producing island to the United States and Canada, and also to Great Britain. The geographical and climatal conditions of Dominica are, says Dr. NICHOLS, admirably adapted to the culture of tropical and sub-tropical fruit. The total value of the fruit exported from Dominica between the years 1881 and 1887, inclusive, was over £46,000. Dr. NICHOLS gives a list of fruits cultivated in the island in question, and other lists are given from Montserrat, St. Christopher, Nevis; the Virgin Islands and Bermuda. A short notice is added on the indiarubber trade in Upper Burmah. The caoutchouc, in this case, is furnished by *Ficus elastica*.

"BENTHAM AND HOOKER."—M. DURAND has rendered a public service, by compiling a full list of the genera of flowering plants with their synonyms, as published in BENTHAM and HOOKER'S *Genera Plantarum*, and by incorporating the names of the genera since published up to the end of the year 1887, and by making a few changes in order to satisfy the law of priority. The genera are arranged under the natural



THE PHOTO SPRAGUE & CO. MARTINE LANE, LONDON, ST. LOUIS, MO.

VIEWS IN SHRUBLAND PARK, IPSWICH.

orders, with indications of the number of species and their geographical distribution, and in large genera of the sections into which they are subdivided. The appendix of genera of doubtful position occupies five pages—a small proportion as compared with other works. Lastly, a full alphabetical index is given, occupying no fewer than 213 pages—double column, small type. If this is creditable to the industry of the compiler, what must we say of the labours of the original authors, whose task occupied some quarter of a century? That a few errors should have crept into so vast a publication is, of course, inevitable. One such we may point out:—*Scaphespermum*, Mart., has no connection whatever with *Scaphopetalum*, Mast. (see p. 686), but it would take a very large number of similar errors to detract from the feeling of obligation which M. DURAND has laid upon all working botanists. The tabular summary works out thus:—Orders, 210; genera, 8417; species, (estimate) 100,220. It will be remembered that BENTHAM and HOOKER represent the synthetic school. If the orders and genera were computed by the analytical or “splitter” school, orders and genera would be considerably increased, while the number of species would probably be doubled.

HORTICULTURAL EXCURSIONS.—The projected excursion of Belgian horticulturists to the Channel Islands has been postponed till next year, on account of the bad weather. For similar reasons the excursion of the Horticultural Club had to be abandoned.

VICTORIA PARK.—Notwithstanding the unfavourableness of the weather, this park is still looking bright with summer flowers. Pelargoniums, Violas, Verbenas, have been very fine, but care is taken to plant only such varieties as are least affected by bad weather. Amongst the first-named may be mentioned Henry Jacoby and Bonfire. Viola Blue Boy is sometimes employed in combination with Flower of the Day Pelargonium, and whether the latter flowers or not, the effect is very nice. Mr. GIBSON affects much simplicity in planting his beds of flowering plants, and with very good results. Seldom has a bed more than four different kinds of plants, and the majority have fewer than that. Golden Feather, *Echeveria secunda glauca*, *Mesembryanthemum cordifolium variegatum*, Robert Fish Pelargonium retain their place as edging plants. A charming bed was composed of Fuchsia Golden Treasure, autumn-struck, and *Coleus Verschaffeltii*; but generally the plants of the latter species have grown badly. As pink-coloured zonal Pelargoniums Cleopatra and Mrs. Gibbons are the best this year. The carpet-beds in the scroll garden, which are prettily designed, look clean and bright, the wet weather apparently not having caused the plants to suffer much, but there is a suspicion of dullness of colour in the Alternantheras. It may interest our readers to know that of *Echeveria secunda glauca* 45,000 are bedded out; and of the pretty grey-leaved plant, *Brachyphyllum bracteosum*, more than 2000. Sub-tropical plants of most kinds have made good growth, and are quite sightly. *Lilium auratum* is largely employed, mostly to give brightness to masses of dark shrubs, or to fill the prominent angles of beds, or to stand at the junctions of walks. The Hollies—a prominent feature in this park—bristle with robust shoots and foliage, but some of them sadly stand in need of more space to develop themselves; and the turf is generally in capital trim. From what has been said it will appear that the inhabitants of the much decayed Bethnal Green and Hackney districts have a beautiful and well decorated park in which to disport themselves every day of the week.

“CHAMBRE SYNDICALE” OF GHENT.—At the meeting held on the 10th inst. awards were made as follows:—

First-class Certificates.—To *Cypripedium* species (niveum and Stonei), and to *C. Harrisianum* superbum, from MM. J. Vervae & Co.; to *Odontoglossum grande superbum*, from M. James Bray;

to *Dracæna Norwoodiensi*, from M. Desmet-Duvivier; to *Maranta inconfusa*, from M. Alexis Dallière; to *Trichopilia* species, from MM. Vervae & Co.; and to new *Coleus* (seedlings of 1888) M. Paul Dutrie, Madame C. van Geert, Mlle. Rosa Rooses, Comte de Grünne, Etoile de Gand, Souvenir de Jersey, and Souvenir de Guernsey, from M. Edouard Pynaert.

Commendations.—To *Cypripedium javanico-superbians*; and to *Lilium auratum superbum*, from M. Bernard Spaë. And a Cultural Certificate to *Adiantum Weigandi*, from M. Liévin Spaë.

IRIS RETICULATA.—Growers have been sadly plagued with a disease in the bulbs of this lovely spring-flowering Iris. At first fungi were supposed to be the culprits, but the bulbs have been repeatedly examined at our request by the most competent mycologists of all schools without definite result. A letter from Mr. THOMSON, of Ipswich, put us on the track of mites, such as those so injurious to Eucharis and other bulbs. Mr. THOMSON detected some of these creatures, and this induced us to consult the highest authority in this department of zoology, Mr. A. D. MICHAEL, a member of the Scientific Committee. That gentleman, whose skill and knowledge of his subject is only rivalled by his willingness to oblige, sends us the following communication, which puts an end to the doubt as to the cause of the disease in question:—

“I took an early opportunity of examining the bulbs, they had, however, become so dry that all life was extinct in them, except the Acari; they had survived in the deeper parts of the bulbs, and were numerous, and in all stages of development. They are our old friend, or rather enemy, the Rhizoglyphus, but not the same species as I found on the Eucharis bulbs, &c.—that was *R. Robini*, this is *R. Dujardini*. I cannot of course say whether any of the other creatures mentioned by Mr. Thomson may be responsible for part of the damage, but I think I may say pretty confidently that the Rhizoglyphus is sufficient to account for it without assistance. The typical species of that genus (of which this is one) are true bulb and tuber eating creatures, and in my opinion are the causers, not followers, of decay. They attack sound healthy bulbs and destroy them, sometimes, when they are in sufficient numbers, by simply eating them up; at other times, when they are less numerous, either by eating essential parts of the bulb, or by making large wounds, and thus admitting water, fungus, &c. I should think the best way of preventing this evil would be, where possible, to dust the bulbs well with powdered sulphur before planting them, supposing that this would not injure the bulb, and I imagine it would not; sulphur mixed with soap and washed on is very good, but I do not know whether this might be injurious to the bulb—[probably not, used with care]. I fear that, for some years past, these Acari have been imported with foreign bulbs in great numbers, and that the injury caused by them is likely to increase instead of diminishing. I think it probable that either the Acari or their eggs are on the bulbs in most cases before they are planted. If one of your correspondents liked to send me a few bulbs before planting, I would look them over and see if I could trace any Rhizoglyphus; if I could not they might be planted separately in some place where no other bulbs had been grown; it would be interesting and probably useful to see whether they were attacked by the disease. It is clear that infected bulbs would be likely to communicate the Acarus to sound bulbs, whether of the same kind or not, and the Acari would be likely to remain for some little time in the soil the bulbs had been grown in. *Albert Michael.*”

THE COLD STORAGE OF FRUIT.—Mr. J. WRIGHT, of the *Journal of Horticulture*, reports as follows:—“At the last meeting of the committee, held on the 13th inst., JOHN LEE, Esq., presiding, examples previously placed in the chill room were examined. The temperature of this room ranges about 35°. Figs, quite ripe when placed in store on

August 30, had kept surprisingly well; the dark coloured fruits appeared quite unaltered, but two of the lighter coloured were spoilt. Plums, stored at the same time, were as good as ever. Of a dozen outdoor Peaches, eight were in good condition, two fair, and two spoiled. Peaches and Nectarines grown under glass, from Messrs. RIVERS & SONS, also Oullin's Golden Gage, placed in store at the same time (the 30th ult.) were in fine condition. Peaches from Messrs. CHEAL & SONS, stored on August 31, were in good condition, but a Melon put in with them was spoiled. Bradshaw Plums from Chiswick, placed in store at the same time, were unaltered, but Tomatos, except a few yellow fruits, were spoiled. This is the second failure with Tomatos, which do not appear to be able to endure the cold. Many of the Cherries—a bad sample, stored wet on August 8—were still sound, and it was thought that those which failed were crushed or injured at the outset. It is the opinion of the committee that for keeping purposes the fruit must be sound. Some of the Cherries (red) in the freezing-room (temperature 21°) were quite hard, others (black) were yielding to the touch but frozen inside. Some Cherries taken from the chill room a fortnight ago and steadily thawed were good and well flavoured the following day after a cool sojourn of twenty-three days, and there are doubtless others that have now been in the chamber forty days equally good. Can any northern friends oblige by posting a few Gooseberries and Currants to Mr. D. TALLERMAN, Cold Storage Co., Leadenhall Market, 794, Gracechurch Street, London? They will be gladly accepted and fairly tried. The fruit should not be over-ripe, and care should be taken to pack them so as to arrive without being bruised. Peaches are best enclosed in tissue paper before being packed in boxes with wadding. All fruit is best stored in closed boxes as if for transit, as when exposed Cherries at least lose their bright fresh colour, and it would probably be the same with other fruits.

IXORAS AT GUNNERSBURY PARK.—A house of these is just now a remarkably attractive feature at Gunnersbury Park. The centre stage of a large house is filled with fine young bushy plants of *Ixoras*, mainly of coccinea, with a few of *Morsei*, *Westii*, and *Williamsii*. The plants are from two to five years old, and are blooming with great freedom. From these plants Mr. ROBERTS has been cutting freely since April, and the plants break into growth at various points below where the flowers were cut away.

THE ROTHESAY CLIMATE.—While the country generally, says the *Scotsman*, of September 18, “has been complaining of the lack of sunshine, Rothesay, ‘the Brighton of Scotland,’ would almost appear to have had more than its share. A few days since Mr. PHILIP, of the Glenburn Hydropathic, showed in Edinburgh two beautifully ripe Figs—one weighing 2½ oz.—which had grown in the open air on a standard tree with a southern exposure at the Hydropathic. The Passion flower is just bursting into bloom, also in the open air.”

MUTINUS BAMBUSINUS.—Under this name Dr. M. C. COOKE describes and figures, in the last number of *Grevillea* a fungus of striking appearance but filthy odour, allied to our common Stinkhorn (*Phallus impudicus*). The singular thing about the Mutinus is that it is a tropical species, native of Java, where it grows at the base of Bamboo clumps, and yet that it made its appearance in Mr. NOBLE's nursery at Sunningdale amongst some young Plum trees.

BRAMBLES.—Mr. VERTEGANS sends us flowers of the double rose-coloured Bramble, evidently a variety of *R. discolor*, and which is very beautiful and effective in wilderness walks and similar situations. The double white is even more floriferous, and looks like a form of *R. corylifolius*. Some years since we gave illustrations of these hardy and beautiful shrubs, which we were glad to find attracted as much attention at the time as the representations

of the most costly Orchid. Rose Queen has small rose-coloured flowers, succeeded by rose-coloured berries. Golden Queen Raspberry is a free white fruiting variety of good flavour. Rosa Pissardi, also sent by Mr. VERTEGANS, is a very free-flowering, single-flowered Rose, somewhat in the way of *Felicité Perpetuel*, and of which we may have more to say on another occasion.

TULIPS.—We learn from the *Kelso Chronicle* that in view of the imminent revival of the florists' Tulip Messrs. STUART & MEIN have just completed the purchase of the famous collection of Mr. DAVID BARBER, Stanton-le-Dale. The collection contains several thousand bulbs of the best varieties in existence, many of them never having been offered for sale to the public. Mr. BARBER, who has several times won the Champion Cup and other prizes open to all England, is one of the last of his generation of enthusiastic Tulip growers. He is upwards of seventy-three years of age, and for a period of upwards of forty-three years he has gathered together and grown his favourites. It is satisfactory to record that this famous collection has come to Scotland, and we are sure that nothing will be left unaccomplished that skill and enterprise can do to make the collection equally famous in that country.

TOMATO AND POTATO DISEASES.—One form of Tomato disease is known to be identical with that of the Potato, and in the South of France sulphate of copper is in general use among the large growers of Tomatos. The success of their treatment induced M. PRILLIEUX to try the effect on Potatoes, leaving others side by side untreated. An early variety was seen to be affected on August 5, and at once treated with a solution of sulphate of copper of the following strength:—6 parts of sulphate of copper, 6 of lime, 100 of water. This liquid was applied to both sides of the foliage and to the haulm with great care with a spray pump. Ten days later (August 16) the tubers were lifted, with the following result:—

	Number of Tubers.		
	Healthy.	Diseased.	Percentage of diseased.
Nine plants sprayed...	115	...	...
Six plants not sprayed...	53	17	32·07

This experiment should be repeated another season at Chiswick and elsewhere. It is hardly likely that with the necessarily rough-and-ready procedures of the grower on a large scale the same good results will be obtained as by M. PRILLIEUX experimenting on a small scale with scientific precision; but supposing only half as good a result were obtained, the advantage would be great. The record of M. PRILLIEUX's experiments was presented to the Paris Academy of Sciences, and published in the *Comptes Rendus*, August 28.

CHISWICK GARDENERS' MUTUAL IMPROVEMENT ASSOCIATION.—This body of young gardeners of the Chiswick district, being desirous of affording tangible assistance to the Gardeners' Orphan Fund, proposes to hold, on October 17, a *soirée* for gardeners and others interested in gardening, at the Chiswick Vestry Hall. The *soirée* will comprise music, reciting, and exhibition of objects of interest. Tickets of admission, 1s. each, may be obtained on application to the Secretary, Mr. J. BARRY, or at Messrs. PLATRIER & SONS, Post Office, Chiswick. The *soirée* will commence at 7·30 P.M., precisely.

MEXICAN BROOM-ROOT OR WHISK AND IXTLE FIBRE.—This material, which was referred to in the *Gardeners' Chronicle*, vol. ii., 3rd series, p. 104, as being probably furnished by a species of *Bouteloua*, but which has since been proved, in the *Kew Bulletin* for December last, to be produced by *Epicampes macroura*, Benth., is said, in a report on the trade of Vera Cruz for 1887, to have fallen off considerably

in the quantity exported, the value of which was £58,632, in 1886, and £45,122, in 1887. "This decrease," it is said, "may be accounted for by the crude process at present employed of preparing the root for the market, which is not only expensive, but has the disadvantage of injuring the fibre, so that it reaches the market shorter and less wiry than it should, but the employment of machinery for preparing this *raiz de zacaton* promises to become general, and then the quality of it will be higher and the price probably lower, so that it will no doubt regain and increase its market." In the same report from which the above is taken, the export of Ixtle fibre (*Agave heteracantha*) is stated to have become nominal, though it promised to assume important dimensions. The cause of this falling-off is similar in this case to that of the Broom-root. It is intended to introduce the preparation of this fibre into a new penitentiary, which is to be fitted up with adequate plant and machinery, and this it is thought will be the means of making the Ixtle fibre become a profitable industry, and so confident is the State Government of the value of Ixtle that they are about to offer a premium of 3000 dollars for the best machine for rendering it marketable.

PUBLICATIONS RECEIVED.—*Annual Report of the National Chrysanthemum Society.*—*Agricultural Statistics, Ireland, Acreage under Crop, and Number and Description of Live Stock.*—*Report on Macwarrihalli (Forsteronia gracilis), a new Indianur Plant in British Guiana.* By G. S. JENMAN, Botanic Garden, Georgetown, Demerara. — *Report on the Botanic Garden, Georgetown.* By G. S. JENMAN.

SCOTLAND.

A R D G O W A N.

THIS the princely seat of Sir Michael Shaw Stewart, Bart., is situate about 15 miles from Bridge Street Station, Glasgow. Inverkip is the nearest railway station, and a brief walk through the village of that name brings the visitor to the entrance gates on that side the park of Ardgowan. The park is of large extent and well wooded, the planting having been done with rare skill in the development of the beautifully undulated surface. The object of my visit being to inspect the famous gardens, and my time limited, I had little opportunity for observing the beauties of the park itself. It was impossible, however, even in the rapid run over the limited portion of the place which was traversed in reaching the different points of gardening interest to omit noting the magnificent landscape around, views of which are commanded from the higher ground within the park. The site of the mansion has been admirably chosen in relation to the surrounding scenery. Views of the beautiful scenes of this lovely part of the Clyde are obtained from many points from the top of a lofty tower on the shoreward side of the lawn; additional range and variety of feature increase the admiration of the spectator.

The lawn surrounding the mansion is perhaps the most perfect in all respects I have ever seen. It is of considerable extent, and furnished with choice Rhododendrons and ornamental deciduous flowering evergreen trees and shrubs. A charmingly reposeful place it is as viewed from the windows of the mansion, and from the terrace which extends along the front of the latter. On this terrace a pretty geometric garden is laid out, and among the plants employed, I noticed an almost lost old favourite in *Pelargonium Tom Thumb*, which has this season beaten the newer varieties in floriferousness, and certainly has never been surpassed in the brilliant tone of scarlet its flowers possess. Mr. Lunt stated that it is the best bedding *Pelargonium* for the district. Among the shrubs trained on the lower part of the house is a fine healthy plant of the Myrtle, which was reared from a slip drawn from the marriage bouquet of the

present Baronet. It has been several times cut down by frost in exceptionally severe winters, even though it is carefully protected, but it always starts bravely away again from the roots. A handsome conservatory is well filled with the usual kinds of flowering plants, some luxuriant tree Ferns, Palms, and climbers.

THE KITCHEN GARDEN,

in which are the extensive ranges of fruit and plant-houses, lies in an admirably sheltered space to the south-west of the mansion, and at a considerably lower level than the latter. Shelter from the north is perfect, and the exposure to the south equally so. It is a walled parallelogram, and its greatest length ranges east and west. The vineries and houses for Peaches, Figs, and plants, are built against the north wall, are lean-tos of ample dimensions, and well constructed. Evidence of Mr. Lunt's skill as a cultivator confronts in every department, but in fruit culture he is in the front rank. Such Muscats, such Black Hamburgs, Lady Downe's, Madresfield Court, Mrs. Pince, and Black Frontignan!—these are all the varieties grown—are worth a long journey to see. The Vines are twenty-three or twenty-four years old, and were planted by Mr. Lunt. The borders are of pure loam, without any admixture of other material.

Given good loam and perfect drainage, which latter was Mr. Lunt's first consideration in making his borders twenty-four years ago, and there appears to be little reason for all the fussy dicta that have been insisted upon on the subject of making Vine borders during the last quarter of a century. The broad, massive, leathery leaves on these Vines, and the magnificent clusters of plump, luscious berries, point a lesson, if not a moral, on the subject. The black Frontignan is a favourite with Lady Shaw Stewart, and a Vine of the variety is grown in each house.

Peaches and Nectarines.—Of these there are found a limited number of varieties, which are well chosen. Sea Eagle was the only variety of Peach bearing at the time of my visit, and its fruits were plentiful and good. One tree of Royal George, occupying a space of 25 or 30 feet by 18 feet, is furnished with fruiting branches in every part, and it is without exception one of the best examples of tree management that has come under my notice. It is twenty-four years since it was planted by Mr. Lunt, and he only has attended to its pruning.

Figs are much liked and are largely grown. One house, 84 feet long, is entirely filled by two magnificent old trees of Brown Turkey. Their age is not known, but they were old when Mr. Lunt's predecessor took charge of Ardgowan Gardens, thirty-six years before his superannuation twenty-five years ago. The second crop was just coming to an end, but there were some good fruit still remaining.

In one of the Peach-houses my attention was drawn to a large plant on the wall at the back of the house of *Lapageria rosea*, with a history. It is one of many seedlings raised twenty-five years ago by Mr. Collinson, the then gardener at Eaton Hall, Chester, who was the first to flower and fruit the plant in this country. It is a very large plant, which covers a large space and is blooming freely.

Of plant-houses or convertible pits there are several ranges consisting of four divisions, each 36 feet long—excellent samples of what such houses should be. At present some of them are filled with healthy plants of *Azalea indica*, *Calanthe Veitchii* and *C. vestita*, both well done, the former species having pseudobulbs of great size; another division is occupied with cool Orchids and Ferns, some are filled with Melons, Cucumbers, others with Tomatos, the three latter being grown in pots, and very successfully. McIndoe's Best of All and William Tillery are the only two kinds of Melons grown. Large numbers of decorative plants are grown, and flowering plants for cutting in winter, these being much wanted for that purpose. Strawberries in pots throughout winter and spring are a specialty for which two of these large span-roofed pits are set apart.

The hardy fruit crops are short this season, but vegetables have been and are good.

No one visiting Ardgowan we feel sure will be disappointed. It is under competent management, and is a place of large extent, whose proprietor takes a pride and pleasure in having everything maintained in first-rate order. S.

GRAPE GROWING FOR MARKET, IN BELGIUM.

Any horticulturist who may chance to visit the beautiful capital of Belgium should not miss seeing the immense vineries at the village of Hoeilaert. This village is situated about 8 miles south-east from Brussels, and is easily reached. You take the train from the "Station de Luxembourg" for a small station called Gronendael, which journey occupies only from ten to fifteen minutes. The remainder of the journey can easily be made on foot, and the walk between the latter station and Hoeilaert is exceedingly pleasant, the road running for the greater part of the way through a beautiful forest of Beeches, which throw their branches across the roadway, making an agreeable shade. The country here is, I think, the prettiest in the environs of Brussels being gently undulating and finely wooded. In passing from Brussels to Gronendael you see a neat village which is known by the name of "La petite Suisse" from its fancied resemblance in miniature to a Swiss hamlet.

The village of Hoeilaert is also prettily situated, and, as an example of a Flemish village, is worth a visit even without the attractions of the vineries. When the village is reached it is a most interesting and curious sight to look round upon the immense ranges of glass, with the sun's rays reflected in dazzling gleams from their glittering surfaces.

In this country we are accustomed to see glass structures situated in enclosed areas, but at Hoeilaert they are simply built in the open fields, without walls or fences round them, the situations being chosen more with regard to the suitability of the soil than anything else. You can walk off the public highway across a field and straight into a vinery, without having to pass any barriers whatever.

In 1865 the Brothers Sohie started the first Vine-growing establishment in Hoeilaert, and now there are no fewer than sixty following in their footsteps, the system of culture employed, and the style of house being, as a rule, similar with all. The usual form of house is a span-roof, in the Dutch style. Almost the only exception to this are the original ranges built by the Brothers Sohie, which, being on a somewhat steep slope, are half-spans, which form of house accommodates itself much better than a full span to the fall of the ground, the ranges rising one above the other, like a series of terraces.

In the establishment which I looked over there was one block of twenty-four houses, each house 75 feet long, 30 feet broad, and 10 feet high. A second block, separated from the former by a roadway, was composed of ten houses of the same dimensions, and there were in addition three or four detached houses, placed at right angles to the main blocks, for the culture of Peaches, &c.

There is a wood framework, which forms the skeleton of the house and supports the iron astragals and glass. The astragals are of light T-iron, and are carried right over the ridge from wall to wall in one piece. Ventilation is obtained by sashes hinged to the ridge-piece, these being lifted by a simple iron rod. In each house there is a large circular concrete tank into which is carried the water off the roofs.

The heating apparatus is of the most primitive and simple description, being composed of flues of large glazed drain-pipes, placed on the ground, the chimney or chimneys also of pipes generally passing through the glass in the centre of each house. I certainly did not admire the system of heating, it seemed so clumsy, there being in the large houses four furnaces, two at either end, which must entail enormous labour and trouble, when one thinks of the very great number of fires required in a large block.

A little more ingenuity might also be exercised with regard to the positions of the chimneys, as I could not but think that a more suitable place might be got for them than the exceedingly makeshift-looking expedient of pushing them right through the

centres of the roofs. As yet no one seems to have tried to step from the beaten track and make a new departure on the system of heating, as in all the establishments it is the same.

The vineries, however, are well built and substantial, being put up on the simplest and least expensive way consistent with efficiency. Very little attention is given towards keeping them tidy, which detracts considerably from their appearance. No time seems to be available for tidying up, economy in this as in all the other details being rigorously practised. The Vines are planted in four lines, at about 3 feet between the plants. Heavy cropping is the rule, the bunches averaging about $\frac{1}{2}$ lb. in weight. The berries are well coloured.

Until quite recently, the chief, indeed the only variety grown, was the Black Frankenthal, but now some of the new houses are being planted with Black Hamburgh, Black Alicante, &c.

In some cases the Vines have been planted in position two years before the vineries they were destined to fill were erected, the houses being built over them—rather a change from the usual process.

In a pamphlet published in the beginning of the present year by M. Ch. Joly, of Paris—*La Culture de la Vigne sous Verre*—a description is given of the vineries at Hoeilaert and of the famous establishment of the Messrs. Thomson at Clovenfords, near Galashiels. The vineries at Hoeilaert, like those at Clovenfords, are certainly very important commercial establishments, but there is little or no similarity between them with regard to the system of culture, or to the construction of the houses.

Any one who visited first the vineries at Clovenfords, and afterwards compared this magnificent establishment with the vineries at Hoeilaert would get a very great surprise. At Clovenfords one sees large and handsome houses heated with hot-water on the most approved principle, the whole culture of the Vines being of the highest excellence, and the result being Grapes which for size of bunch and finish compare favourably with the highest class Grapes from any private establishment.

At Hoeilaert, on the contrary, you have a different state of matters—rough houses and a very rough-and-ready system of culture, with a result of small bunches and berries. In truth, the Belgian establishments should not be named vineries, as we understand the term, but a vineyard under glass. When I visited Hoeilaert, at the end of May, a large part of the Grapes were rapidly colouring, a second series were just set, and a third showing the bunches. These Grapes are sent to many of the large cities, the principal being London, Paris, Brussels, Berlin, and Amsterdam.

In addition to the Vines, Peaches are also grown to some extent, the chief varieties being Madeleine Rouge. Strawberries form another auxiliary product, considerable quantities of these being grown, some in pots and others planted out in beds on the inside vinery borders. The chief Strawberry grown is Marguerite Lebreton. *James Wilson, Jun., Greenside Nursery, St. Andrews, N.B.* [A vinery constructed and heated as above described was figured at p. 275 of our issue for March 3 last. Ed.]

VEGETABLES.

CHOU DE BURGHLEY.

MUCH has been said and written for and against this; but those who have done the latter little know how useful and valuable it is, as those who have condemned or found fault with it must, I think, have had it in use at the wrong time, if that be possible, for during late autumn and in winter Cabbages and Savoys are quite out of it, and will not compare with Chou de Burghley in any way for delicacy of flavour, and for the seasons mentioned I am of opinion that it ought to quite take their place. Again, if we turn to the spring, we all know that Cabbages cannot be had fit to cut very early, but with Chou de Burghley

sown towards the end of July, or before, and planted out in good soil as soon as the plants are fit and large enough, they are ahead of Cabbage, and no epicure can find fault with them if properly cooked, as they eat like the tender heart-leaves of a Broccoli or Cauliflower, and nothing else on this head need be said in their favour. Here we have them in all the different stages, and shall not be without a supply from the end of October till April or May, when Chou de Burghley will be succeeded by Ellam's, Veitch's, and Etampes Cabbages, which are my favourites, as they are early and quite large enough. *J. Sheppard.*

THE BULB GARDEN.

BLIND NARCISSUS POETICUS.

I HAVE followed the correspondence on this subject with considerable interest, as the opinions expressed vary so greatly. The theory about shallow planting I do not consider to be tenable, as the growth of the bulbs I have in my garden disproves it. I referred a few weeks ago to the fact that the bulbs in my brother's garden on a similar soil, and only a few yards away, though taken from my stock, always go blind, whilst I have hardly an instance of such failure. If shallow planting were the cause of the mischief, the condition would be reversed, as mine are the shallower of the two; indeed, during the winter I had serious fears that their being so near the surface—some barely covered with soil—would be detrimental to their growth and flowering this season. The result proves that practically it has had no such effect. The border where I flower my bulbs has full exposure to the north-east winds, and is rarely protected by snow, owing to the wind sweeping through an adjacent gateway, and it does not get the early morning sun, as on the south-east it is flanked by a low Laurel hedge, from 2 to 3 feet high, so that during the winter and early spring it gets no sunshine until 10 or 11 o'clock. On the other hand the non-flowering bulbs in my brother's garden have exposure to the sun during the early morning, and also through most of the day, and are sheltered from the north and east by walls. I am unable to hazard an opinion as to the real cause of this blindness, but am satisfied that the shallow planting and frost theory is not the true solution. *D. J. Yeo.*

LILIUM CANDIDUM.

This Lily in many places refuses to grow, or is at best difficult to keep, as not only do some soils seem to disagree with it, but the plants are subject to a kind of fungus, and this, when it attacks them, soon sweeps them all off. Of remedies to stop or cure it there appear to be none known at present,—at least I have not heard or read of any—but if there are, those who have knowledge of them would do a good service to many by stating them, as it is a real loss to any garden to be without such an old favourite. [Try sulphate of copper.] Here, and in this district, no one has the least trouble with it, as not only does it succeed well in our borders, but it may be seen in those of almost every cottager, and in some in such strength and luxuriance that the stems run up to a height of 5 or 6 feet, and bear a great number of flowers. As to the bulbs, it seems to be a struggle with them as to which shall keep possession of the ground, for so thick and crowded do they become that they lift and push one another out, and it is quite common to see many lying bare on the surface if the clumps are not frequently divided and replanted, and in doing this it is always advisable to give them a fresh place or new soil.

The land about here is light and sharp, and as the bottom is gravelly or sandy, it drains quickly, and this may be the whole secret of the success of this Lily, as most bulbs that remain continually in the earth need dryness when at rest, and Lilies, perhaps more than others, require that condition, as they have so much surface exposed owing to their numerous scales, and moisture is very apt to lodge between

these and cause them to rot. If, in cases where it is difficult to keep them, the bulbs were taken up for the winter, they would most likely succeed *J. S.*

USEFUL INVENTIONS.

MESSRS. CHEAL & SON, Lowfield Nurseries, Crawley, have lately introduced a novel flower-holder, which is very suitable for use in staging flowers at exhibitions. Fig 44 is an illustration of a frame which is constructed to carry ten blooms, the stalks of which are pushed through the loop, and led down the centre stem to the water-tube in the box; another form is made with the water-tube joined on, and the frame may be then used for hanging on walls, &c., for decoration. Visitors to the more recent meetings of the Royal Horticultural Society at Westminster will remember having seen these frames used for Dahlias, in which way the single varieties are displayed to advantage.

FRUIT REGISTER.

LE LECHER PEAR.

THIS is a seedling between Williams' Bon Chrétien and Bergamotte Fortunée, raised by M. A. Lesueur, of Ypres, and recommended in the *Bulletin d'Arboriculture* as one of the best winter Pears. The fruit is large, pyriform, yellow, spotted with drab spots; stalk short, eye shallow, flesh white, juicy, sugary brisk, and perfumed, free from concretions. Season, from January to March. The Pear is sent out by MM. Transon, of Orleans.

STRAWBERRIES.

M. Burvenich describes and figures in the *Bulletin d'Arboriculture* for September some new Strawberries. 1, Cerberus, is a seedling from Sir Joseph Paxton, and produces Cockscomb-like three-lobed fruit; 2, Madame Frederick Burvenich, a conical fruit, of fine appearance; 3, Jean Marie de Smet, a seedling from Louis Vilmorin, and a large Cockscomb variety. All three are recommended by a highly competent and judicious authority, M. Burvenich.

PENTAPERA SICULA.

It seems rather surprising that Messrs. Bentham and Hooker should have retained this genus as separate from Erica, when the only difference appears to be that the parts of the flower in true Heaths are in fours, while in this Sicilian representative they are in fives. *P. sicula*, a native, as its name implies, of Sicily, is a low-growing shrub, with fine hoary leaves, and pale pink flowers of a globose form. The plant is very rare in gardens, though figured long ago in Link and Otto's *Icones*, i., t. 19. Our illustration (fig. 45) was taken from a plant in the Royal Gardens, Kew.

THE FLOWER GARDEN.

MIXED BORDERS.—At this time of the year these require to be looked over frequently, if they are to present a well-kept appearance. Work of a routine character in them will consist of keeping down weeds and in cutting off dead stems and leaves from plants that have flowered, in clearing away hardy annuals as they go out of bloom, except where seed is desired. See that all flowering plants of *Chrysanthemums*, *Michaelmas Daisies*, *Pyrethrum uliginosum*, *Helianthemums*, and others, are kept securely fastened. Where the re-arranging of borders will be carried out during the ensuing autumn and spring, the present is an opportune time for taking notes of height, colour, habit of each species, putting these particulars on a label. Likewise transplant seedling Foxgloves.

Common Shrubs.—The propagating of many of these may now be proceeded with, in the case of *Aucubas* by cuttings, *Rhododendrons* by layering.

Choose a well-drained border for cuttings, and a light sandy compost should, if possible, be used about the cuttings. After putting them in, press them down quite firmly. Conifers, and many evergreen subjects, are best rooted in sandy soils on a shady border under hand-lights, or in pots in cold frames. The planting season is fast approaching, and where much work is contemplated, the requisite materials must be got in without delay. If peat or loam comes from a distance, push forward the cartage of it while the roads are in good order. Let the nurseryman have orders for the delivery of planting stuff, or, what is better, go to the nursery and make your own choice, in which case select young free-growing shapely plants in preference to old ones, which rarely do well.

Carnations and Picotees.—Those that were layered early are now rooted, and should be cut off and planted either in narrow beds or in borders, using a compost of fibrous loam and leaf-mould about the plants. The soil round about the roots should be made quite firm in planting. For late layers a fortnight or three weeks hence will be early enough in most parts of the country. Nothing is gained by planting with few roots. *J. Horsfield, Heytesbury.*

HOME CORRESPONDENCE.

NATIONAL FRUIT-GROWERS' ASSOCIATION.—I imagine that the correspondent whose interesting letter is quoted in the article on p. 270 of the issue of

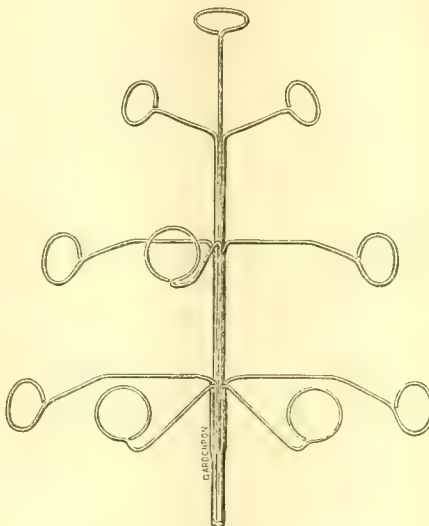


FIG. 44.—CHEAL'S CUT-FLOWER HOLDER.

September 8 last has not read his *Chronicle* of late days very carefully. This will be seen on comparing his remarks with the matter of two articles on pp. 61 and 186, where the whole subject under consideration seems very fairly considered. Perhaps your correspondent will kindly refer to the articles in question: what appears to be original in his letter is the project of a society under the above title. But why a fresh society, when we have, or are in process of receiving, a rejuvenated Royal Horticultural Society? There seems to be a great desire to break up the bundle of wood into distinct sticks; but surely this is wrong. Perhaps the old Society is greatly to blame for the weakness of the central point of attraction—certainly some sign ought to be given during the coming autumn and winter by which the degree of vitality in it could be measured. All local societies—fruit, vegetable and flower—should be gathered under its maternal wing, and some kind of union effected between this great organisation and the great representatives of arboriculture and agriculture. But I need not repeat what has already been published in your columns in the pages above noted. It is pleasant to note that English resources and requirements are receiving, at last, fitting consideration. *Old Crab.*

THE JARDIN DES PLANTES.—The paragraph on "Origin of Botanic Gardens" (*Gardeners' Chronicle*,

p. 243) should have had "in Paris" added to it, since it is a little misleading as it stands. The Oxford garden was made about the same time as the Jardin des Plantes, but there were at least four other botanical gardens established on the Continent at an earlier date, viz., Padua, 1545; Montpellier, 1558; Leyden, 1577; and Leipsic, 1580. Our own John Gerard and Jean Robin were contemporary proprietors of private botanic gardens, and Robin paid Gerard a visit in London prior to the publication of the *Herbal* in 1597, in which he tells us Robinus sent him the pale double Daffodil (= *N. eystettensis*) "from Orleans and other parts of France"—a statement quoted by John Parkinson in his *Paradisus* of 1629. This has long been popularly known as "Queen Anne's Daffodil," and seeing that Robin introduced it to England, it seems very probable that he or his contemporaries so named it after Queen Anne of Austria, the Queen of Louis XIII. *F. W. B.*

NEW VARIETIES OF CABBAGE.—I beg to thank "A. D." for his reply to my query, regarding Little Gem Cabbage, and at the same time assure him I had my seed of that variety direct from Sutton & Sons. I certainly only grew a limited quantity—about 150 plants of each variety—but I think it would be easier to detect any variation in that quantity than if the plot had been larger, as the soil would be more uniform in quality. The seed of Little Pixie was not, however, from that firm, and in that probably lies the difference, if Little Gem is a selection from Little Pixie, as selections cannot well be made without deterioration of stock. I have known Little Pixie about twenty years, and I think I can detect a little difference in what I grow now to what it was then, in that the heads appear to be broader at the base, and not quite of the same green colour, but the main characteristics are the same, viz., its extreme earliness, compactness, and mild flavour. I think if "A. D." were a practical gardener he would hardly be surprised to find one variety of vegetable, under two names in the same catalogue, as, I am sorry to say, it is often the case, now selections have become so popular with our great seedsmen. I fear the great advance in garden produce spoken of by "A. D." is rather chimerical, as I fail to see, in looking over collections of vegetables at our shows, any very great advance on what these were twenty years ago. I certainly was struck with some New Intermediate Carrots I saw at Shrewsbury the other day, but they were very much like Long Red Surrey; but perhaps the difference was so infinitesimal I could not discern it. In conclusion, selections are, as a rule, very good; but when sent out as a distinct variety they soon revert to the old type in the hands of other seedsmen, hence so many synonyms and so much disappointment. *John Wilkes, Creswell Hall Gardens, Stafford.*

EARLY SPRING FLOWERING CROCUSES.—Amidst a great wealth of early spring flowering plants in the hardy flower garden, the numerous species of Crocuses now in cultivation hold a foremost place. We usually grow a group of some forty species and varieties under glass, not forcing them in any way, and they are certainly very charming. Whether cultivated in pots, so that they can be placed in a cold pit or frame, or planted out to be protected by some temporary glass appliance, they are worth all the care that may be required to maintain them in vigorous health. If planted out it is worth while to make the soil suitable for them. A mixture of loam, decayed manure, leaf-mould and sand suits them admirably. Plant them about 2 inches deep. They are all hardy enough, but should be protected in some way. *J. Douglas.*

TRITOMA UVARIA are now in full bloom here, and many plants have sixty fine spikes, which make very grand display. The plants stand in the clumps of *Rhododendrons*, on the edge of a lawn. The mixture of peat and leaf-mould of the beds suits them well, and they stand the weather without any protecting. I also plant *Anemone japonica*, the red and the white varieties, and varieties of *Gladiolus*, amongst the *Rhododendrons*—an arrangement which has a pleasing effect when the *Rhododendrons* are out of flower. *W. Smyth, Basing Park, Alton.*

CRACKING OF BLACK DAMASCUS GRAPE.—After promise of a good crop of Black Damascus Grapes, I find the berries, just half coloured, cracking in such numbers that the crop is practically spoilt. I believe this Grape has a bad reputation for cracking, but is there any one fault of cultivation to

which it is attributed, or is there any means of lessening the loss? *W. T. B.*

DEATH OF TREES.—All round this neighbourhood, and in my own garden, there has been a curious fatality among Mountain Ash trees of from five to twenty years planting; the trees after setting the berries have in a few days withered up entirely, while like neighbouring trees are in full health. This fatality has extended to the Silver Birches, also causing serious gaps in rows of trees. Have you any similar complaints from any other quarters [yes], and what can account for it in any way? *W. T. B.* [We shall be glad of further information. *Ed.*]

LONG-LIVED CUCUMBERS.—Whilst at Belton Park, Grantham, recently, I was somewhat surprised to see a fine house of Cucumbers planted last August bearing fruit as freely as any spring-planted one could do. This is by no means a common occurrence;

allowed to become stagnant by overwatering, failure is inevitable, while if kept too dry the result is equally bad. *C. Collins.*

TEA ROSE HOMER.—There are few Tree Roses so hardy and enduring as this, for, without the slightest protection, it stands year after year, and does not suffer from frost except that, now and then, during severe winters, a few of the soft shoots killed get back at the tips. We have a plant here in the school garden that has stood out for over ten years, and which is a large bush, standing from 6 to 7 feet high, and as much through. This plant never has any other pruning than what it gets from having some of its flowers cut, and the quantity of these it annually bears is surprising. Many of the blooms were deformed. This is characteristic of Homer, but as every one knows, who is acquainted with this useful old Rose, the half-expanded blooms, when they are perfect,

A LARGE IRISH YEW TRANSPLANTED.—I have succeeded in removing at Little Kimble, Buckinghamshire, a specimen of the above species about 50 feet in height, and 24 paces in circumference. The diameter of the stem at the ground level is 2 feet 9 inches. Another tree which I have also transplanted is an Arbor-vitæ whose stem is 2 feet in diameter. The Yew it is calculated is about 300 years old. *J. Robinson, St. Mary's Square, Aylesbury.* [Will our correspondent kindly say where these trees are to be seen? *Ed.*]

THE "WEATHER PLANT."—When scanning the columns of a daily paper lately, my eye chanced to alight on the following interesting paragraph:—

"THE WEATHER PLANT.—That remarkable specimen of the vegetable world, the 'weather plant,' continues, says a Vienna correspondent, to excite considerable interest there. Men of science who, on its first discovery, were unwilling to express an opinion on its prognosticating virtues, now agree, after extensive experiments, that the shrub is, in truth prophetic. Thirty-two thousand trials made during the last three years tend to prove its infallibility. The plant itself is a Legume, commonly called the 'Paternoster Pea,' but known in botany as the '*Abrus pergrinus*.' It is a native of Corsica and Tunis. Its leaf and twig strongly resemble those of the Acacia. The more delicate leaves of its upper branches foretell the state of the weather forty-eight hours in advance, while its lower and hardier leaves indicate all atmospheric changes three days beforehand. The indications consist in a change in the position of the leaves and in the rise and fall of the twigs and branchlets."

This paragraph seems to have created a desire on the part of some people to possess such a wonderful plant, as numerous applications for seeds of *Abrus pergrinus* have been made to Kew. There can be no doubt but that the correspondent of the paper mistook the word "*precatorius*" for "*peregrinus*," and adopted the latter word on the probability of its being the correct one. In the *Gartenflora* for September 1, 1888, there is an article bearing on this subject, entitled, "*Abrus precatorius, eine Wetterpflanze*," of which I have made the following translation:—"In the spring catalogue of a firm now established at Prague is the figure of a plant of the Mimosa tribe, known as the 'weather plant,' and offered at a high price. This plant not only foretells the state of the weather two days beforehand in its immediate vicinity, but also for some miles round, and is even able to predict the approach of earthquakes. A young man named J. Novak, in a country nursery in Bohemia, received the seeds, he said, from a sailor. In the summer he took a plant to Vienna, but not being able to find a place where he might leave it for observation, took it back with him. At the last meeting of the Imperial Horticultural Society, he exhibited it, when the Emperor saw it, and purchased two plants. Later on, it was shown at a trades' exhibition, when its properties and peculiarities, confirmed by some burgomasters and similar officials, were commended to the public. A good plant, capable of indicating all kinds of weather and temperature, was priced at 140 marks (nearly £7), including the case in which it was grown, and a pamphlet containing instructions worth about 10 kreuzer (about 1½d.), at 1 gulden (about 1s. 8d.). No one there knew what the plant was. And what was it after all? Simply nothing but an old acquaintance in the form of *Abrus precatorius*, the movements of whose leaves at morning, noon, and night, have been known for a century, and whose seeds scarcely cost a farthing, but are sold by the firm for 5 florins each. We do not at all doubt that the heat of the atmosphere and moisture may exercise an influence on the leaf movements of this plant, but to try and interpret such minute changes into weather predictions is probably only on a level with the slight botanical knowledge with which the discoverer of this little deception is endowed. Gardeners here can obtain a plant for about 50 kreuzer (less than 1s.), but will consider it a treasure scarcely worth possessing, as it requires great heat for its cultivation. Besides, the plant has become remarkable quite recently, as it increases the number of poisonous Leguminosæ already known. Its brilliant shining scarlet seeds with black spots, which are used for necklaces and rosaries, contain a virulent poison, which one understands is used for killing in India." *J. Weathers, Royal Gardens, Kew.*

WRINKLED PEAS.—It seems very probable that the cold wet weather in addition to materially inducing much of the later bloom on wrinkled Marrow



FIG. 45.—PENTAPERA SICULA: FLOWERS PALE PINK. (SEE P. 334.)

in fact, gardeners often find a difficulty in keeping Cucumber plants in healthy condition throughout the winter. The plants referred to grew in a border 3 feet wide, 12 or 15 feet long, and about 2 feet deep; thus it is obvious that winter Cucumbers are not always best when their roots are cramped for room—notwithstanding that such is the method usually adopted. They were, I was informed, raised from seed sown in the usual manner about the end of July last year, and planted in the borders, which were well drained, towards the end of August. No extra attention has been bestowed on them beyond an occasional top-dressing with good loam and manure, and a good soaking with liquid manure when making growth and in full bearing. Undoubtedly the secret of such an achievement as this is in keeping the plant healthy, and this can only be done by a free use of the syringe and judicious use of the watering-pot. During the winter the greatest attention must be paid to the latter point, for if the growth be

are most charming. It is, I think, a great mistake, where numbers of flowers are required, to prune in the way many do, and especially so with Teas, as when plants are left to themselves they soon form fine heads and a rich harvest of bloom. *J. S.*

ASPARAGUS TENUISSIMUS.—I noticed that Mr. Smee has sent you a spray with flowers, and you add that you do not remember to have seen it in flower before. I should like to state that I have a plant which has bloomed two or three times a year for several seasons past, and is now in bloom. It has produced seed, and I have been successful in rearing plants from it which are now about 1 foot high, very bushy, and make nice plants for the table. The parent plant is growing on a trellis, 3 feet wide by 4 feet high; in habit it is very thick, and sends out young shoots, some of which are now about 8 feet long, although it is in a cool conservatory. *E. Chadwick, Hanger Hill House, Ealing, W.*

Peas will also cause many of the Peas in the pods to crack owing to such excessive moisture and lack of ripening heat. As the seed crop will certainly be a moderate one, and the elimination of the split Peas later may reduce that crop, 30 per cent., would it not be well ere such hand-picking takes place, were the germinating properties of these split or cracked Peas tested, as it would be a misfortune, if so much good seed should be rejected simply because skins were split. In addition to the troubles stated new growth is being made by Peas also, so that the prospects of harvesting the crop readily, seems very remote. One market grower for him, as his breadths have held out to the very last, indeed Runner Beans are finding late Peas still formidable competitors in the market. However the Beans are not so very abundant yet, but because of the cool temperature bloom is setting very profusely, and the crop should be a heavy one later. With respect to the question as to which is the earliest Pea, it seems probable, judging by the recent trial at Chiswick, that Mr. Laxton will settle that point by the introduction of his new early wrinkled variety Gradus; which, of some 3 feet in height, a good cropper, and of superior quality, seems to be quite as early as the old early rounds—whether it may prove hardy enough for field sowing in large breadths remains to be seen, but only very hardy Peas will pay to sow in the fields in February, and so far none seem better than a good stock of Sangster's No. 1. A. D.

THE HEDGEHOGS CRY (p. 189).—Mr. F. W. Burbidge writes, "Pretty and harmless little animals," &c. I demur to the term harmless. This year a French partridge made its nest in a bed of outdoor Hyacinths in my garden; eighteen eggs were laid; the bird sat on them; one morning fourteen of the eggs were gone, the shells scattered about over a space of several yards. The next morning the other four eggs had been destroyed. I had some blackbird's eggs put into the nest, round which several rat-traps were placed. A large hedgehog was detained by them during the next night. In a field about 1½ mile off four partridges' nests were destroyed this year, and from the manner in which the egg-shells were scattered about it is nearly certain that hedgehogs were the culprits. As several of them had been killed by a fox terrier in the spring, it is clear that they were plentiful in the neighbourhood; I therefore demur to their being harmless animals. The author of *English Birds* says:—"A duck laid eggs under a lot of brushwood, some were taken, contents eaten, and shells found some yards off the nest. I set a steel trap. About 11 P.M. I heard a sharp cry—went to see; found a hedgehog in trap; killed it; set it up again—soon another hedgehog was caught. Again, on another occasion my man told me of a pheasant's nest being visited by something; went to see for myself. Three eggs only left out of many. I took these three eggs home, and made a small puncture in each, and inserted some strychnine in each, sealed up the holes with sealing-wax, placed them in nest, and waited for morning, when behold a large hedgehog lay dead close by the nest—two of the eggs had been eaten." Robert Warner.

—I once heard the cry of a hedgehog under the circumstances related below. I had been disturbed several nights by hearing a great commotion among the fowls, but on getting up could find no apparent cause for their alarm. However, on counting the young chicken (there were several broods in the yard), one or two were missing on each occasion, and others had been bitten by some creature on the head or neck. No trace of the missing ones could be found. I attributed the mischief to rats, and accordingly placed three traps, carefully concealed, in front of one of the hen-coops, blocking the chickens in so that they could not stray into the traps. I was awakened in the night by hearing some loud screams, apparently proceeding from some creature in an agony of terror and rage. It was different from the cry of any other animal I have ever heard, and I know not how to describe it, except as a shrill scream. On hastening to my traps, where the sound proceeded from, I found in it a fine hedgehog, caught by its leg, and screaming horribly. Need I say I soon put it out of its misery. I lost no more chickens after the death of the little animal, so am forced to the conclusion that the hedgehog was the robber. Can any of your readers inform me if there are other instances of hedgehogs attacking fowls? W. H. W.

STOCKS FOR APPLES.—Whenever the programme for the ensuing Apple and Pear Congress is arranged, it is to be hoped that some capable authority

will have undertaken to deal with the interesting topic of stocks for Apples. Prior to the introduction of the Paradise, Doucin, and similar French stocks our Apples had to be worked upon such stocks as locality placed at the nurseryman's disposal, and all were of the class now termed free. This term, not so many years since, would, if then applied to stocks, have needed some explanation, because then the dwarfing—and by some termed "cramping"—stocks were unknown. With the introduction of the French Doucin and Paradise came the need for defining terms, and the old Crab, or Apple stock, was termed free in contradistinction to the dwarfing stock, which certainly does contract to some considerable extent the ordinary growth of Apples. But of late we have heard more of the English or broad-leaved Paradise, a variety of stock, by-the-by, which seems to have an anomalous designation, as reputedly the chief bulk of the stocks seems to come from the Continent. However, we have over and over again been told by eminent growers that the French Paradise shows a tendency to cramp or contract the tree; it bears unduly, and that whilst later producing smaller fruits, the tree has its life contracted also; hence the greater value of the English Paradise stock, as that, whilst ensuring absolute fruitfulness, also restricted growth within due bounds, yet not such as to prevent robust growth and longevity. The present season has certainly been a remarkable one, and not least amongst its sins is the very wide contraction of our Apple crop; indeed, the average crop of the present season seems to be one of the lowest for several years. When, therefore, we find comparative sterility in Apples all around, and yet see in the Royal Horticultural Gardens at Chiswick on dwarf trees what can but be regarded as a capital crop of fruits, it is difficult to avoid inquiry as to what special conditions affect these trees so favourably. The sorts are many, and representative of both dessert and kitchen kinds, curiously enough, they are all worked on the deprecatd French Paradise, as well as on the Doucin stocks. Pity it is that the Congress referred to was not just now, or at least early next month, to be held, as the Apple crops on these bush trees would serve admirably to the reader of a paper on Apple stocks the wherewith to point a moral and to adorn a tale. In how many gardens this year where the cultivation bestowed is greater than can be afforded at almost impoverished Chiswick, may there be seen numerous bush Apple trees worked on the English Paradise, and on which trees there is but a miserable crop indeed? The season past or present may be to blame, but it is very evident that what has affected injuriously the favoured stock has been good for the comparatively rejected stock; thus showing that, even in the matter of Apple stocks, every dog has his day, and certainly at Chiswick a capital day has this cramping French Paradise proved to be. It will be well also if, in dealing with the subject of stocks, some very satisfactory information for the enlightenment of sceptical gardeners be afforded as to the methods of propagation adopted, so as insure correctness and uniformity. A tradition seems to exist in some quarters that after all the broad-leaved Paradise, so-called, is a myth, and that the stocks so named are simply the pip-seedlings of dwarf-habited free-fruited Apples. It will be wise that the reader of a paper on this subject, should take his hearers into his confidence fully, and whilst striving to disabuse them of wrong notions, also make clear not only what various stocks really are, but how increased or propagated. Possibly he may go a little farther and deal with the question as to what kinds of Apples may prosper or generally thrive best upon the English or the French Paradise, or the Doucin; also as to the best stock for espaliers and cordons, although it is very evident that for dwarfing stocks the bush or semi-pyramid will ever be the favourite form of tree produced on them. There can be no doubt but the future of Apple cultivation in this country is largely bound up with the nature, not only of the stock upon which worked, but also with dwarf or bush trees, and the example referred to and now so noticeable at Chiswick evidences that fact in a practical degree. A. D.

DAFFODILS AND MANURES.—In the very interesting and instructive article by Mr. F. W. Burbidge in a recent issue there are some observations which appear to require an answer from myself. Mr. Burbidge seems to have become impressed with the idea that I regard the "mother, or breeder-roots," as the producers of the finest flowers, but the contrary is both my experience and belief. I believe in the "solid, well-

ripened globular bulbs" to produce the best blooms, such as the sample of Tenby Daffodils which I presented at the office of this paper a week or two back, and which were noticed by the Editor. The bulbs in question, though a very good sample, were not excessively large, but were noteworthy on account of their solidity and fine form; and I maintain that, if you get weight in medium-sized bulbs—say from 1½ to 1¾ inch diameter, and weighing from 1½ to 2 oz., regardless of how that weight and solidity are produced (i.e., with or without manures), you will be sure of fine flowers as the result. In "rich meadow loam" manure is quite unnecessary, for in such you have a most suitable soil for the free growth of the majority of Daffodils, and, indeed, many other things besides. Perhaps Mr. Burbidge will have a better idea of the hungry state of my soil when I say that three or four years ago even strong growing herbaceous perennials did little more than exist in it, and this notwithstanding that it had been trenched throughout, and from this fact I could only draw one conclusion, which was, that it needed well working and enriching. I quite endorse Mr. Burbidge respecting the growing of Daffodils on suitable soil without manure. But if any one, amateur or nurseryman alike, has to deal with a soil hungry and impoverished he must manure it to bring it into suitable condition, and by doing so it does not follow that he has done wrong, or that the bulbs have imbibed the greater part of the strength of the manure, since the soil itself is continually extracting from the same source. For various crops here, apart from bulbous plants, I have manured heavily, and at the end of a year not a vestige of manure could be seen. Much of my bulb land is in excellent condition now, and will grow bulbs well without adding fresh manure at present; but it cannot be expected to yield a good crop year by year unless stimulants be given in some form or other. In conclusion, I may say I should be very pleased to exchange samples of Tenby Daffodils with Mr. Burbidge, and see the difference arising from bulbs grown under totally different conditions, though I would prefer bulbs of as nearly equal size and weight as was possible. E. Jenkins, Waterloo Villa, Hampton.

SOCIETIES.

BRIGHTON AND SUSSEX.

SEPTEMBER 12 AND 13.—As in former years, the exhibition was held in the Royal Pavilion and on the eastern lawn adjoining. The competition in the plant classes was perceptibly less than usual, but nevertheless some noteworthy examples were staged, especially in the classes for flowering plants.

For six stove and greenhouse specimens in bloom, Messrs. Knight & Co., nurserymen, Hastings, staged an even, fresh, and freely flowered set, *Lapageria alba*, of large dimensions; *Erica Aitoniana* Turnbulli, very fine and densely covered with bloom; *E. cerinthoides coronata*, likewise in capital condition; and a good example of *Allamanda nobilis*; Mr. Meachen, gr. to Mrs. Armstrong, Woodsele, Brighton, being 2nd to the above with *Pimelea decussata* of huge size, and *Allamanda Hendersoni*, freely flowered, amongst others.

In a small class for four plants, Mr. Townshend, The Den, Dyke Road, was awarded 1st prize, *Ixora Williamsii* and *Azalea Narcissiflora*, being capital examples of medium size; Mr. Meache again taking 2nd place; and the premier position with *Allamanda nobilis* as a specimen plant.

An excellent set of six *Ericas* were shown by Messrs. Knight & Co., such as it is a treat to see nowadays when the best of the hard-wooded kinds are rarely met with; *E. ampullacea* Scottiana, *E. retorta* major, *E. Marnockiana*, *E. Macnabiana*, *E. cerinthoides coronata*, and *E. tricolor* vera were the sorts here shown.

Groups of miscellaneous plants arranged for effect were attractive features at each end of the marquee, Mr. Turner, gr. to Major Way, Wick Hall, Hove, being an easy 1st, with suitable subjects arranged in a light and informal manner; Mr. Meachen was 2nd, and Messrs. Stringer & Co., Hove, 3rd, both of whose groups showed the common error of overcrowding.

A group of Ferns arranged for effect, to which was worthily awarded the 1st prize in its class, was sent from the nurseries of Mr. W. Miles, West Brighton, and contained, among other good things, a first-rate specimen of *Nephrolepis davallioides* furcans. Zonal Pelargoniums, smaller than usual but in capital condition, were shown by Messrs. Meachen and Towns-

hend, to whom were awarded the 1st and 2nd prizes respectively for six as well as four specimens.

Fine-foliage plants came from Mr. Curry, gr. to Colonel Pepper, Milford Hall, Salisbury, whose set of twelve contained a fine example of *Croton* Countess; and in a smaller class was a well-grown plant of *Chamaerops humilis*, from Mr. Meachen.

A few Orchids were shown, the best four coming from Mr. Moody, gr. to T. D. Goodman, Esq., Horsham, who had *Dendrobium formosum giganteum* in full vigour, bearing a terminal panicle of ten blooms; *Calanthe veratrifolia*, with several spikes, very fresh, and two others.

In the *Cut Flower* classes the prominent features were the Dahlias, the Roses, and the herbaceous flowers; these constituted almost a show in themselves. Messrs. Keynes & Co., Salisbury, were awarded 1sts for forty-eight and twenty-four show and fancies, as well as for Cactus or decorative varieties. Messrs. Cheal & Sons, Crawley, were 2nd for forty-eight varieties, and in a similar position with the Cactus or decorative kinds, but came strongly to the front with twenty-four singles and twelve pompons. The foregoing classes were of the highest merit. Mr. Vincent, of Keymer, showed well in the smaller classes for amateurs.

Roses were shown in good form, and there was no lack of competitors. Messrs. Perkins & Son, Coventry, being 1st for forty-eight varieties, with bright flowers of good size and condition; Messrs. G. Paul & Son taking 2nd place; the order of the awards being reversed for twenty-four varieties from the same exhibitors. Mr. Campbell, of Bath; Mr. Slaughter, of Steyning; and Mr. Harris, of Horsham, all showed well in these and smaller classes.

Hardy herbaceous flowers were a most attractive feature, being shown in large numbers and in the best possible condition. Messrs. G. Paul & Son securing the 1st prize with thirty-six vars. which it would have been hard to beat. Large collections were also shown by Messrs. Cheal & Son, and Messrs. Woollard.

Gladioli came from Messrs. Kelway & Son, Langport; and twenty-four vars. of stove and greenhouse cut flowers from Messrs. Knight, to both of whom 1st prizes were deservedly awarded.

Messrs. Perkins were strong in bouquets and a wreath, securing a 1st in each instance.

Fruits.—For twelve dishes, Mr. Ward, Longford Castle Gardens, Salisbury, was 1st, with a thoroughly representative and meritorious collection; his best dishes were Gros Maroc and Muscat of Alexandria Grapes, Bleaheim Orange and Hero of Lockinge Melons, both grand fruits, the former weighing 7 lb.; and a good dish of Castle Kennedy Figs. Mr. Goldsmith, Kelsey Manor Gardens, Beckenham, was a good 2nd, being strong in Grapes, and he had an excellent dish of Clapp's Favourite Pears.

Mr. Richards, Somerly Gardens, Ringwood, and Mr. Ward each scored a 1st in two classes for Pine-apples with fine fruits.

Three fine bunches of Madresfield Court Grapes easily secured the 1st prize for Mr. Ward; and three of Black Hamburg, from Mr. Godlee, Burgess Hill, were deservedly 1st in their class.

In two classes for white Grapes, Muscat of Alexandria were shown in fine condition by Mr. Goldsmith and Mr. Baker, Ottershaw Park, Chertsey, each securing a 1st.

The best Peaches, including a very fine dish of Sea Eagle, came from Mr. Lucas, Warnham Court Gardens, Horsham, who was also 1st for a single dish of Nectarines, with Pine-apple in good condition; whilst for a couple of dishes Mr. Goldsmith was to the front. The last-named was 1st for dessert Pears, with a bright dish of Clapp's Favourite. In another class for Pears, Williams' Bon Chrétien were the best, coming from Mr. Holman, gr. to Viscount Gage, Firlie Park.

Plums were best seen in Jefferson, from Mr. Lucas and Mr. Holman, each of whom took 1st in two classes; with Green Gages Mr. Ward won with a dish of extra size and quality.

First prizes for Figs were awarded to Mr. Gatehouse, Dover, and Mr. Butler, Lancing, each exhibitor putting up fine fruits of Brown Turkey.

Morello Cherries were a strong class, the best dish coming from Mr. Duncan.

Two 1st prizes for culinary Apples were awarded to Mr. Gilmour, Seacox Heath, Hawkhurst, in two classes for extra fine fruits of Pott's Seedling and the Queen.

First prizes for vegetables were awarded to Mr. Goldsmith for six kinds; and to Mr. Goring, of Worth, Sussex, for a collection not limited to any number; the latter exhibitor might take a hint from

the former, and show, on a future occasion, produce of smaller selection with advantage.

Miscellaneous exhibits were a most attractive feature, especially so was the large group of tastefully arranged decorative plants, with conspicuous examples of brightly coloured *Crotons* and herbaceous cut flowers of the choicest kinds, with fine selections also taken from the stove and greenhouse, these with cut *Roses* and *Gladioli* came from Messrs. Wm. Balchin & Sons, and did them great credit. Mr. George Miles staged another excellent group, among which was the early-flowering *Chrysanthemum* Mrs. Durrell, in excellent condition. A large collection of herbaceous cut flowers, consisting of nearly one hundred varieties, from Mr. Clark, of Dover, were a most instructive feature; so also were the fifty-five dishes of Apples, Pears, and Plums, from Messrs. Cheal & Son. Three Vines in pots, with numbers of bunches on each, were shown in most creditable condition by Mr. Jenner, Toronto Terrace, Brighton, an amateur cultivator.

DAHLIA AND HOLLYHOCK SHOW AT NEWPORT, ISLE OF WIGHT.

SEPTEMBER 12.—A praiseworthy attempt is being made in the island to revive the growing of the Hollyhock—a flower once seen in almost every garden, but one which has of late years almost died out owing to the disease which attacks it. The recently formed Isle of Wight Dahlia and Hollyhock Society, which has been established to give impetus to the cultivation of the flower, held its first show in the Borough Hall, Newport, on the above date, and was well patronised by the public. The show itself was a creditable one generally, the hall presenting a pretty appearance. Among other exhibits was a collection of pot plants, tastefully arranged in the rear of the exhibits. Mr. Cave, nurseryman, and Mr. T. W. Gould, both of Newport, sent two stands each of Dahlias, not for competition. Amongst other flowers shown, but not for competition, were French Marigolds, Zinnias, and Asters, by Mr. Blake, Arreton; and a lovely box of *Roses* and two *Gladioli* by Mr. G. Williams, of Gatcombe, whose *Roses* especially were greatly admired. There was not much competition in some classes, and in these only one prize was awarded; in others, on the contrary, the competition was much better, especially in those for Asters. Hollyhocks, which should have been the chief of the exhibits, were not shown in large numbers, but Dahlias more largely by nurserymen, gardeners, amateurs, and cottagers; and as a new start in the island the show was a matter for congratulation, much of its success being due to the exertions of Dr. J. Groves, M.D., the Honorary Secretary.

GRANTHAM HORTICULTURAL.

THIS Society held its seventeenth annual show on Thursday, September 13, in the Exchange Hall. Considering the beautiful and summer-like weather which prevailed on that day, it appeared somewhat out of place to see a goodly array of exhibits within massive stone walls. This step was taken with a good intention, on account of the unsettled state of the weather. The entries were many, and the exhibits on the whole excellent, but the attendance was thin. The centre of the hall was set apart for groups of miscellaneous plants, and other exhibits occupied the space at the sides. Vegetables were good, the Potatoes particularly, the prizes for which were keenly contested. Fruit was also abundantly shown in collections, also as single dishes. Single specimens of specimen plants were not prominent as a feature, although the various groups contained some fairly grown ones. Cut flowers were good.

Group of Plants (open class).—Irrespective of several "not for competition" groups these, as mentioned above, were fairly good, the 1st prize being awarded to J. R. Boyall, Esq., Castlegate House, Grantham, for an artistically-arranged group of miscellaneous flowering and foliage plants. Closely following this was a smaller, though none the less attractive, group, shown by Mr. G. Martin, Spittlegate Nursery, to which the 2nd prize was awarded; the 3rd award was carried off by Mr. S. J. T. Barrett, Redcliffe. Various other plants in different classes were shown, the most noteworthy being six *Caladiums*, distinct, shown by Messrs. Barrett, Redcliffe; six *Coleus*, H. Escritt, Grantham; six fine tuberous *Begonias*, G. H. Sage, Buckminster; while the best table plants were shown by G. H. Sage and G. Martin.

Cut Flowers.—These were exceptionally good,

especially a collection of double and single Dahlias shown by Messrs. W. & J. Brown, Stamford Nurseries, among the doubles. The same firm also gained a similar honour for a smaller collection of Dahlias. For a splendid collection of hardy and half-hardy cut flowers, G. H. Sage, Buckminster, was deservedly awarded the 1st prize, the 2nd being taken by Messrs. Brown.

Roses also for the time of year were excellent, in fact a "not for competition" collection, shown by Messrs. Burch, Peterborough, gained the admiration of all. Among others were some splendid blooms of W. A. Richardson, The Bride, Grace Darling, Niphetos, Sunset, and Madame de Watteville. The same firm likewise exhibited a box of twelve distinct *Roses* for which they were awarded the 1st prize, the 2nd being awarded to G. H. Sage.

For a vase or epergne of fruit or flowers W. & J. Brown came 1st, closely followed by J. Patman.

Fruit.—In single dishes, Mr. J. Crawford, Codrington Hall, was awarded 1st prize for a creditable collection of Grapes, Melons, Pine-apple, Peaches and Nectarines. This was followed by similar collections shown by Mr. T. Hare, Wellingore, and Mr. J. H. Escritt, Grantham, for which the awards were given in the order named. For three bunches of black Grapes the prizes were awarded, in the order of their names, to J. R. Boyall and H. Escritt respectively. Three white ditto, J. Crawford and T. Hare.

Six Nectarines.—J. Crawford.

Six Peaches.—G. H. Sage, 1st; J. Patman, 2nd.

Melons.—1st, Mr. J. Patman.

Apples were good, the principal exhibits being six varieties (dessert), 1st, Mr. G. Martin; six varieties (kitchen), 1st, Mr. H. Escritt.

Pears were also fairly good, the best dishes being staged by G. Martin.

Plums, however, brought forth the keenest competition among the fruit, some splendid dishes being staged by Messrs. G. H. Sage, J. Crawford, and J. Hare, for which prizes were awarded respectively.

Vegetables.—For the best collection of Potatoes.—1st, Mr. Johnson, with some splendid tubers, prominent among which were International Kidney, Sutton's Abundance, and Future Fame. The 2nd collection, exhibited by Mr. J. Woodward, was also noteworthy, and comprised some fine specimens of Beauty of Hebron, White Elephant, &c. Several good collections of vegetables were also staged, the best being Mr. W. Hubbard's. Tomatoes and Peas also, considering the season, were good, some fine dishes of the latter being shown by Messrs. Johnson, Sage, and Woodward.

A point worth recording is the distribution by the Society, free of cost, of fruit trees and seeds, which takes place at stated intervals during the year.

THE CRYPTOGRAMIC SOCIETY OF SCOTLAND.

THIS Society held its fourteenth annual conference at Inverary on the 12th and 13th inst. under the presidency of the Duke of Argyll. The meeting was a most successful and enjoyable one; and the exquisite scenery of Inverary was seen to the best advantage from perfection of weather. The members had the pleasure of welcoming Mr. William Phillips, Shrewsbury, and Dr. Carlyle, Carlisle. A spacious pavilion near the Castle, originally erected for the home-coming of the Marquis and (Princess Louise) Marchioness of Lorne, was kindly granted for the meetings of the Society. A large collection of fungi, gathered in the neighbourhood by the Duke's instructions, was laid out for examination; and a fine collection of lichens, also gathered in the neighbourhood by Dr. Macmillan of Greenock, Vice-President, was exhibited. In addition, contributions were received from Colonel Harrington Stuart of Torrance, Mr. Heron, Mount Stuart, Bute; Mr. Thorburn, Castle Semple, and Mr. J. Proctor, Glenfinnart, Ardentinn. The cryptogamic flora of Inverary is rich, and during the short excursions which time permitted, many species of interest, especially among lichens and fungi, were gathered. It may be mentioned that on a single Ash tree, within 8 feet from the ground, Mr. Phillips gathered fifteen distinct species of lichen. The forenoon of the 12th was spent in examining the collections in the pavilion. The species were named, and specimens of edible and poisonous fungi were set apart. As the results will be published elsewhere it is unnecessary to specify the varieties which were discovered. After entertaining the members at luncheon, the Duke conducted them to his museum, which contains many fine geological and archæo-

logical specimens. In the evening, after the transaction of the business of the Society, the noble President gave an interesting and suggestive address on the "Cryptogamic Flora" to the members and a large assemblage of the public, after which various papers of interest were submitted. After an excursion on the 13th the annual dinner concluded the conference.

Many of the trees in the Castle park attracted special attention. The following measurements of trunks will serve to indicate their age and beauty:—Scotch Fir, at 2 feet from the ground, 15 feet, and at 4 feet, 13 feet 8 inches in circumference; Silver Fir, at 2½ feet from the ground, 15 feet in circumference; Spanish Chestnut, at 3 feet from the ground, 20 feet 6 inches, and at 5 feet, 19 feet 8 inches in circumference. The height of the trunk to the first branches being 15 feet. In the garden, which was kindly shown by Mr. George Taylor, there is a specimen of *Arbor-vitæ* which covers an area of 225 feet in circumference. Its age is unknown, but it must have been among the first specimens introduced into Britain.

The warmest thanks of the members are due to the Duke of Argyll for the great kindness with which he received the Society. The next annual conference will be held at Crieff, Perthshire. *J. Stevenson, Glamis, Forfarshire.*

LAW NOTES.

AN INTERESTING SEED DISPUTE.

In the City of London Court on Friday, September 14 last, before Mr. E. T. E. Besley, Deputy Judge, the case of *Witherdon v. Allen* was heard, which raised a question of importance to gardeners, &c.

The action was brought by the plaintiff, Mr. Isaac Witherdon, of Old Corn Exchange, E.C., to recover the sum of £6 5s. 6d., the price of seed supplied to the defendant, Mr. Robert Allen, of Ruxley, Footscray, Kent. Mr. Passmore appeared for the plaintiff, and Mr. Vennell for the defendant. A counterclaim for £50 for damage was set up. The defendant did not dispute the fact that the seed was delivered, and he practically admitted the claim subject to the counterclaim. The seed was supplied in August and September, 1884, and in February, 1885, six months afterwards the defendant wrote and complained of the seed, and said he was dissatisfied with the crop it had yielded. The counterclaim now raised was for the damage the defendant had sustained in consequence. The Deputy Judge interposed by remarking that the counterclaim could not be substantiated. He never heard of a person selling seed and guaranteeing the quantity which should be yielded. Mr. Vennell said the plaintiff had not given a specific guarantee, but he contended that there was an implied warranty that the seed would produce an ordinary and fair crop if properly used and properly sown. The crop was so disproportionate and out of all character that the only conclusion the defendant could come to was that the seed was bad.

The Deputy Judge said it was impossible to go into it. There were numerous reasons for it being bad. He declined to go into the atmospherical influences of 1884. Unless the defendant examined the seed before it was put into the ground and found it was dead seed, the counterclaim could not be allowed. He must find against the defendant. Judgment was given for the plaintiff on the claim; the counterclaim was dismissed, and the plaintiff allowed his costs.

Obituary

MR. COURT.—We regret to have to record the death of Mr. Court, the talented propagator at Messrs. J. Veitch & Sons' Chelsea nursery, which took place almost suddenly on Monday afternoon, September 17. Mr. Court was only forty-five years of age, and had been ailing for some time past. He was at one time in the employment of Messrs. Lucombe & Pince, Exeter, and left them to enter the Exeter branch of the Veitchian establishment about twenty-five years ago. He was an excellent propagator and plantsman, and a genial clever man of business. His name will be associated with the hybridisation of *Nepenthes*, one of which is named after him.

THE WEATHER.

[Accumulated temperature indicates the combined amount and duration of the excess or defect of temperature above or below 32° F. for the period named, and is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	Above or below the Mean for the week ending Sept. 17.	TEMPERATURE.				
		ACCUMULATED.				
		Above 49° for the Week.	Below 49° for the Week.	Above 42° difference from Mean since Jan. 3, 1888.	Below 42° difference from Mean since Jan. 3, 1888.	
Principal Wheat producing Districts.		Day-deg.	Day-deg.	Day-deg.	Day-deg.	
0. SCOTLAND, N. ...	1 above	76	0	— 231	+ 201	
1. SCOTLAND, E. ...	1 above	77	0	— 425	+ 157	
2. ENGLAND, N.E. ...	1 below	81	0	— 451	+ 73	
3. ENGLAND, E. ...	1 below	96	0	— 366	+ 154	
4. MIDLAND COS. ...	2 below	88	0	— 436	+ 149	
5. ENGLAND, S. ...	1 below	102	0	— 470	+ 204	
Principal Grazing, &c., Districts.						
6. SCOTLAND, W. ...	0 (aver.)	82	0	— 320	+ 107	
7. ENGLAND, N.W. ...	1 below	90	0	— 350	+ 117	
8. ENGLAND, S.W. ...	1 below	92	0	— 456	+ 254	
9. IRELAND, N. ...	0 (aver.)	91	0	— 272	+ 67	
10. IRELAND, S. ...	2 below	87	0	— 268	+ 113	
— CHANNEL ISLANDS	1 below	114	0	— 334	+ 154	

DISTRICTS.	More or less than the Mean for the Week.	RAINFALL.		BRIGHT SUNSHINE.	
		No. of Rainy Days since Jan. 3, 1888.	Total Fall since Jan. 3, 1888.	Percentage of possible Duration for the Week.	Percentage of possible Duration since Jan. 3, 1888.
		Tenths of Inch.	Inch.		
Principal Wheat producing Districts.					
0. SCOTLAND, N. ...	3 less	168	27.0	26	29
1. SCOTLAND, E. ...	6 less	147	20.8	47	30
2. ENGLAND, N.E. ...	6 less	137	19.7	46	26
3. ENGLAND, E. ...	6 less	141	18.7	48	29
4. MIDLAND COS. ...	7 less	127	18.3	45	28
5. ENGLAND, S. ...	7 less	129	19.1	53	29
Principal Grazing, &c., Districts.					
6. SCOTLAND, W. ...	8 less	140	29.6	40	2
7. ENGLAND, N.W. ...	8 less	140	20.7	42	29
8. ENGLAND, S.W. ...	11 less	142	24.3	58	35
9. IRELAND, N. ...	6 less	146	26.0	40	28
10. IRELAND, S. ...	7 less	131	25.9	48	34
— CHANNEL ISLANDS	8 less	154	20.7	73	46

THE PAST WEEK.

The following summary record of the weather for the week ending Sept. 17, is furnished from the Meteorological Office:—

"The weather has been finer and in a more settled condition generally than that experienced for many weeks past."

"The temperature has not differed materially from the mean, being 1° above it in the north and east of Scotland and the same amount below it in most other parts of the kingdom. During the daytime the thermometer was generally high, readings of 70° and above being at times recorded; the nights, however, were in most instances cold, and the lowest of the minima ranged from 34° in 'Scotland, E.' to 39° in 'England, N.E.' and 'Scotland, W.' and to 44° in the 'Channel Islands.'"

"The rainfall has been less than the mean in all districts; over England the fall has been scarcely appreciable."

"Bright sunshine shows a decided increase. The percentage of the possible amount of duration, which ranged from 26 in 'Scotland, N.' to 53 in 'England, S.,' 58 in 'England, S.W.,' and 73 in the 'Channel Islands,' has not been so high over the kingdom generally since the week ending May 28."

MEAN TEMPERATURE OBSERVED AT CHISWICK DURING THE WEEK ENDING SEPT. 29. (AVERAGE OF FORTY-FOUR YEARS.)

Sept. 23 ...	56°·3	Sept. 27 ...	55°·5
" 24 ...	56°·1	" 28 ...	55°·4
" 25 ...	55°·9	" 29 ...	55°·2
" 26 ...	55°·7	Mean for the week ...	55°·7

ENQUIRIES.

"He that questioneth much shall learn much."—BACON.

DYING-OFF BRANCHES OF BEECH.—Can any of your readers offer any explanation of the cause of the sudden death of some young branches of a Beech tree growing on the lawn? They have made good growth this season until now, when the leaves shrivel and the bark dies. *X.* [See p. 335.]

NOTICES TO CORRESPONDENTS.

BOOKS: *W. A. Smith.* The best book on the subject is *Domestic Floriculture* by F. W. Burbidge (Blackwood & Sons). We do not know the price.

CAMELIA BORDER: *G. R.* The soil sent was full of the spawn of some species of fungus—probably spread from decaying roots or pieces of wood in the soil. Clear out the old soil now, and replant the trees in fresh materials—failing that being done the plants will perish.

CENTAUREA AUREA: *C. W. D.* The Port Juvenal plant seems on the authority of specimens from that locality, as well as others from the Horticultural Society's Gardens at Chiswick, in the Kew herbarium, to be the *C. fuscata* of Desfontaines, which rejoices in the following *aliases*:—*C. nicotensis*, *C. sicula*, *C. marginata*, *C. aurea* of Desfontaines, *Cat. Hort. Par.*, ed. 3, 1829 (teste, Gay in herb., Kew). *C. aurea* of Aiton, *Hort. Kew*, and figured in the *Bot. Mag.*, t. 421, is quite a different plant, a representative of which is in the Kew herbarium from Roumelia, but to which no name is attached.

CHRYSANTHEMUM: *X. Y. Z.* The stems are infested by a kind of sclerotium, or fungus growth, of which several kinds infest the stems, bulbs, and tubers of plants. No remedy can be suggested except burning all infested plants so as to stop its spreading. Attempts will be made to ascertain its further history by cultivation, as nothing definite can be determined in its present sterile form. *M. C. C.*

CORRECTIONS.—In our report of the plants awarded Certificates at the last meeting of the National Chrysanthemum Society (p. 307), for "Mr. Bennett" read Mrs. Hawkins.—In report of Fruit Growers' Conference at the Crystal Palace (p. 292), Mr. A. Bath's address should have been Sevenoaks, not Foot's Cray.

DAHLIAS: *H. C. & S.* The blooms of the decorative varieties which you forward are in the majority of cases very pleasingly coloured. Prince of Wales is large and bright red; and of a pleasing pale tint is the Yellow Juarez. *W. F. Abery* is a pretty single flower, the rich crimson margins of the white petals making a very striking combination. Prince Albert Victor and Annie Harvey are fine deep reds, and the crimson-lilac tips to Charming Bride render it distinct. Others are pretty in their way, probably, but we prefer the foregoing.

DEFORMED PEARS: *J. H.* The injury is caused by *Helminthosporium pyrorum*. There is no known remedy. You might burn foliage and affected fruit, but in the case of these microfungi it is doubtful if such measures cause any lessening of the evil. You might try diluted Gishurst soap as a summer wash, taking care to wash it off in half an hour with clean water.

DIANTHUS LEAVES DISEASED: *C. W. D.* The plants are affected with some obscure species of *Proto-mycetes*, not well matured—one of the lowest forms. *C. M. C.*

GRAPES: Novice. Your berries were smashed almost beyond recognition; send others, packed in a tin box.

INDIARUBBER AND CASTOR-OIL: C. F. W. These plants do not belong to the same genus, although both are natives of the Tropics. "Indiarubber" is a gum obtained from diverse species of plants, and the Indiarubber plant of English gardens is *Ficus elastica*. It may be grown in a cool-house, where the temperature does not sink below 45°, but does best in a warmer one; in the former very infrequent waterings will be required by the plant during the period November–February, as it is then at rest. Growth should be assisted in the spring by putting the plant in warm pit or stove, and as soon as there are signs of renewed growth it should be either repotted in a mixture of three parts loam and one of peat, with a little sand added, and the pot should be rather over than under-sized; or be top-dressed. Keep the plant in warmth till July, when it may be hardened off by degrees if it is to stand out-of-doors, or it may then be put in the greenhouse. When cool-grown, repotting may be done in April or May. A moist atmosphere and plenty of water suit the plant during active growth. The second-named plants are usually treated as annuals, and may be raised from seeds sown in pots in a hotbed or stove at any time in early spring. The plants should be potted off singly, before the roots get entangled, and kept near the glass in a warm-house till the beginning of May or later, when they may be hardened off by degrees and planted out-of-doors in rich well-drained beds in June and July.

INSECTS: A. S. The insect sent, found in your Cattleya-house, is a very young female grasshopper belonging to the family Gryllidae; evidently imported, probably in the egg state. It is certainly injurious to Orchids, and should be trapped.—**A. F. B.** We have not previously heard of the real wireworms (as those you send are) having nearly destroyed an entire houseful of Vines, on the roots of which they were found—we suppose by gnawing off all the fine rootlets. They are, however, nearly omnivorous. *I. O. W.*

KEW PALM-HOUSE AND CHATSWORTH CONSERVATORY: A. E. H. The first-named is 362 feet, total length, with a width in the centre of 100 feet, and a height of 66 feet; the wings are about twice the length of the central part, and are 50 feet wide and 30 feet high. Chatsworth conservatory is a simple parallelogram of 300 feet by 145 feet.

LAYING-OUT A GARDEN: W. H. *How to Lay Out a Garden.* By E. Kemp. Bradbury, Agnew & Co., 10, Bouverie Street, Fleet Street, E.C.

LIME FROM TANYARDS: J. C. We have no personal experience of the employment of the lime from a tanyard for Vine borders; but we should think it would well answer for the purpose.

LIQUORICE (GLYCYRRHIZA GLABRA): Myosotis. This plant requires deep sandy soil, which should be deeply trenched and well manured. The "sets" are made from pieces of the roots having two eyes at least. As the plant is large and coarse growing it would require about the space between the rows as that given to Horse-radish in gardens. It grows well enough in Yorkshire, and we think it would do as well in Northumberland.

NAMES OF FRUIT: J. Earl. Peach Royal George.—*W. Troughton*. 1, Apple Beauty of Kent; 2, Pear Summer Bergamot?—*J. Pince*. 1, Emperor Alexander; 2, Kerry Pippin; 3, Dumelow's Seedling.

NAMES OF PLANTS: G. Boore. *Bifrenaria vitellina*.—*J. L., Seaham*. 1, *Coronilla emerus*; 2, *Buddleia globosa*; 3, not found; 4, *Leycesteria formosa*; 5, a *Rubus*—no flower.—*T. S., Hawkstone*. 1, Apparently *Thuja orientalis*; 2, *Cupressus Lawsonii*; 3, *Thuja plicata*; 4, A variety of *Thuja orientalis*—perhaps the form known as *Sieboldi*. Why send such scraps? *E. O. R.* 1, *Nephrodium contortum*; 2, *Pteris longifolia*; 3, *Onychium sensibile*; 4, *Pteris cretica variegata alba*; 5, *Adiantum cuneatum*; 6, *Asplenium borbonicum*.—*F. Carr.* *Spiraea Douglasii*.—*Watney, Buckhold*. 1, *Chimonanthus floridus*; 2, *Hypericum Hookerianum*; 3, *Spiraea japonica*.—*Jao, Henderson & Sons*. 1, *Calamintha officinalis*; 2, *Stachys*, specimen insufficient; 3, *Aconitum anthora*; 4 and 7, *Veronica spicata*, two forms; 5, *Polygonum amplexicaule*; 6, *Lysimachia ciliata*.—*G. Bungard.* *Athyrium filix-foemina* var. *molle*.—*J. J. W.* 1, *Aster punctatus*; 2, *Medicago denticulata*; 3, *Campanula lamifolia*.—*W. G. B.* 1 and

2, *Centaurea salontina*.—*J. C.* *Stachys lanata*. *G. M., Olivet*. 1, *Cynochos chlorochilon*; 3, *Dendrobium formosum giganteum*; 5, *Oncidium Jonesianum*; No. 2 was mislaid, please send again; No. 4 was not sent at all.—*W., Fyfe.* *Alstromeria Pelegrina*. The Carnations show a good range of colour, and would doubtless be good border plants. We do not distinguish anything of special merit.

PEA: W. C. The Pea sent, stated to have been the result of crossing Culverwell's Prolific Marrow with Ne Plus Ultra, differs in form of pod considerably from the latter variety, and is, we think—at least in the raw state—of as good flavour, whilst the full-grown Peas are rather larger, as sweet and green, and number on an average eight in a pod. The shell is heavy, being nearly two-thirds of the total weight of the pod, but that may be an advantage from the gardeners' point of view, thick fleshy pods hindering the ripening of the seeds. We do not know what may have caused the delay at Chiswick.

THE OAKS, EPSOM.—If "F. C. H. M." will send his proper name and address—not necessarily for publication, but as a pledge of good faith—we may put in his note on *Cyclamen* growing.

VINES IN BAD SOIL: W. Baker. Lift them without unnecessary delay, digging out every healthy root, and envelope the mass of roots in damp moss and bast mats until the border is in readiness to receive them. Wheel out the worst of the old soil, put the drainage in good order, and make a new border, not more than 2 feet deep, of turfy loam, putting with this about $\frac{1}{2}$ cwt. of Thomson's Vine Manure to the ton of soil. Make the border only as wide as the longest roots, as you can then add to it as these reach the limit of its width. This will apply to both outside and inside borders. If the work is expeditiously done, before the foliage falls off, you may take a short crop from the Vines next year. Keep the house rather close for a time after lifting, and thoroughly water the Vines, so that the leaves recover from their flagged condition, and fall naturally, otherwise the results will not be so good, and full recovery could not be expected before the lapse of another season.

COMMUNICATIONS RECEIVED.—Canon E. (many thanks).—E. C.—G. C. (many thanks, letter will follow).—E. J. L.—E. J. V.—J. H.—H. C.—J. L.—G. S.—P. B.—G. W.—N.—J. D., Edinburgh.—Prof. McNab.—F. M.—J. V. V., Brussels.—W. B.—A. T. C.—G. P.—A. W. B.—J. C. W. & Sons.—Doubtful (next week).—Rust (see "Vines in Bad Soil," in our "Notices to Correspondents," in this issue, and "Damaged Grapes," in our "Notices" for September 15 last).—G. E.—J. D. R.—J. Rust.—H. W. W.—J. W.—W. W.—W. C.—J. J. W.—C. H. S.—A. A. P.—Rev. H. H. D.—W. J. M.—R. W. A.—A. D. G. D. V.—F. G. T.—J. C. C. (thanks).—R. B.

Correspondents sending plants or fruits to be named, or asking questions demanding time and research for their solution, must not expect to obtain an answer to their enquiries in the current week.

MARKETS.

COVENT GARDEN, September 20.

GRAPES selling badly, the supply greatly exceeding the demand. Large quantities of Peaches arriving, causing the prices to drop. *James Webber, Wholesale Apple Market.*

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
<i>Aralia Sieboldi</i> , doz.	6 0-18 0	Foliage plants, various, each	2 0-10 0
<i>Asters</i> , per dozen	3 0-6 0	<i>Ficus elastica</i> , each	1 6-7 0
<i>Balsams</i> , per doz.	2 0-4 0	<i>Fuchsia</i> , doz.	3 0-6 0
<i>Bouvardias</i> , per dozen	9 0-12 0	<i>Heliotropes</i> , dozen	3 0-6 0
<i>Carnations</i> , per doz.	0 0-18 0	<i>Hydrangeas</i> , dozen	9 0-18 0
<i>Chrysanthemums</i> , doz.	4 0-6 0	<i>Liliums</i> , var., doz.	18 0-30 0
<i>Cockscombs</i> , per doz.	3 0-6 0	<i>Marguerites</i> , doz.	6 0-12 0
<i>Coleus</i> , dozen	2 0-4 0	<i>Mignonette</i> , 12 pots	3 0-6 0
<i>Crassula</i> , per doz.	9 0-12 0	<i>Myrtles</i> , per dozen	6 0-12 0
<i>Cyperus</i> , per dozen	4 0-12 0	<i>Palms</i> in var., each	2 6-21 0
<i>Dracena terminalis</i> , per dozen	30 0-60 0	<i>Pelargoniums</i> , doz.	6 0-12 0
— <i>viridis</i> , per doz.	12 0-24 0	— <i>scarlet</i> , dozen	2 0-6 0
<i>Euonymus</i> , in var., per dozen	6 0-18 0	Scented <i>Geranium</i> , per dozen	3 0-6 0
<i>Evergreens</i> , in var., per dozen	6 0-24 0	<i>Solanums</i> , dozen	9 0-15 0
<i>Ferns</i> , in var., doz.	4 0-18 0	<i>Verbenas</i> , per doz.	2 0-6 0

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Apples, half-sieve	2 0-1 6	Peaches, dozen	2 0-8 0
Cobs, 100 lb.	75 0-2 0	Pears, apples, Eng. lb.	2 0-3 0
Grapes, per lb.	0 5-2 0	Plums, half-sieve	2 6-1 6
Lemons, per case	12 0-21 0	— <i>St. Michael</i> , each	2 0-5 0
Melons, each	1 0-3 0		

VEGETABLES.—AVERAGE RETAIL PRICES.

	s. d. s. d.		s. d. s. d.
Artichokes, p. doz.	4 0-...	Mustard and Cress, punnet	0 4-...
Beans, Kidney, lb.	0 4-...	Onions, per bunch	0 5-...
Beet, red, per dozen	1 0-2 0	Parsley, per bunch	0 4-...
Carrots, per dozen	0 6-...	Potatoes, per cwt.	4 0-5 0
Cauliflowers, each	0 4-...	— <i>kidney</i> , per cwt.	4 0-5 0
Celery, per bundle	1 6-2 6	Shallots, per lb.	0 6-...
Cucumbers, each	0 6-0 9	Spinach, per bushel	3 0-...
Endive, per dozen	2 0-...	Tomatoes, per lb.	0 9-1 0
Green Mint, bunch	0 4-...	Turnips, per bunch, new	0 5-...
Herbs, per bunch	0 4-...	Vegt. Marrows, each	0 2-...
Leeks, per bunch	0 4-...		
Lettuce, per dozen	1 6-...		
Mushrooms, punnet	1 6-2 6		

POTATOS.—English Myatt's, 80s. to 90s.; Beauty of Hebron, 60s. to 80s.; and Regents, 100s. per ton.

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Asters, 12 bunches	1 6-4 0	Marguerites, 12 bun.	3 0-6 0
— French, per bun.	1 0-1 6	Mignonette, 12 bun.	1 0-3 0
Bouvardias, per bun.	0 6-1 0	Pansies, 12 bun.	1 0-2 0
Carnations, 12 blms.	1 0-2 0	Pelargoniums, 12 spr.	0 6-1 0
— dozen scarlet, 4 0-6 0		— <i>scarlet</i> , 12 spr.	0 2-0 4
<i>Chrysanthemums</i> , 12 blooms	0 6-3 0	Pinks, 12 bun.	3 0-6 0
— dozen bunches	2 0-6 0	Poppies, 12 bun.	4 0-6 0
Dahlia, doz. bunches	3 0-6 0	Primulas, double, 12 sprays	0 9-1 0
Cornflower, 12 bun.	1 6-3 0	Pyrethrums, 12 bun.	2 0-4 0
Eucharis, per dozen	3 0-6 0	Rhodanthe, 12 bun.	4 0-6 0
Forget-me-nots, 12 bunches	2 0-4 0	Sunflower, doz. bun.	3 0-9 0
Gardenias, 12 blooms	1 6-4 0	Roses, Tea, per doz.	0 8-1 6
Gladiolus, doz. sprays	0 6-1 6	— <i>coloured</i> , dozen	2 0-4 0
Heliotropes, 12 spr.	0 6-1 0	— <i>red</i> , per dozen	0 6-1 0
Lavender, 12 bun.	3 0-4 6	— <i>white</i> , 12 bunches	2 0-6 0
Lilium longiflorum, 12 blooms	3 0-5 0	— <i>Safiano</i> , dozen	0 6-9 0
— <i>lanceifolium</i> , 12 bl.	1 0-3 0	Stephanotis, 12 spr.	2 0-4 0
Lapageria, 12 blooms	1 0-2 0	Sweet Peas, 12 bun.	2 0-4 0
		— <i>Sweet Sultan</i> , 12 bun.	2 0-4 0
		Tuberose, 12 blms.	0 4-0 9

SEEDS.

LONDON: Sept. 19.—Messrs. John Shaw & Sons, seed merchants, of 37, Mark Lane, E.C., report a greatly-increased speculative activity in Clover and other seeds; and considerable quantities of red, white, Alsike, and Trefoil have this week changed hands at enhanced currencies. The new crops promise to be very bad. Perennial and Italian Ryegrasses continue firm. Trifolium is getting scarce, and realises full prices. Winter Tares keep in moderate supply, and values are unchanged. For blue Peas there is an improving enquiry. Bird seeds find buyers on former terms.

FRUIT AND VEGETABLES.

SPITALFIELDS: Sept. 19.—Good supplies of all kinds of fruit, farm, and market garden produce. Trade somewhat heavy. Smaller supplies of Potatoes. Prices higher. Quotations:—Fruit: Damsons, 3s. to 3s. 6d. per half sieve; English Green Gages, 6s. 6d. to 8s. per bushel; English Plums, 2s. 6d. to 3s. 6d. per half-sieve; foreign do., 1s. 3d. to 2s. per basket; Pears, 3s. to 5s. per bushel; Apples, 3s. 6d. to 5s. 6d. do.; do., 1s. 6d. to 2s. 9d. per half-bushel; English Tomatoes, 4s. to 8s. per peck; foreign do., 3s. to 3s. 6d. per box of about 18 lb. Vegetables: Cabbages, 1s. 6d. to 2s. 6d. per tally; Cauliflowers, 1s. to 2s. per dozen; Vegetable Marrows, 2s. to 3s. per tally; Scarlet Runners, 2s. 6d. per sieve; French Beans, 2s. to 3s. per bushel; Dutch Onions, 3s. 6d. to 4s. per bag; Belgian Onions, 2s. 6d. to 3s. do.; English do., 1s. 6d. to 2s. per dozen bunches; Parsley, 1s. 6d. to 2s. do.; Turnips, 2s. to 2s. 6d. do.; Carrots, 1s. 6d. to 2s. do.; Beetroots, 1s. 6d. to 2s. do.; Mint, 1s. 6d. to 2s. do.; pickling Onions, 3s. 6d. to 4s. 6d. per bag; frame Cucumbers, 2s. to 3s. per dozen; common do., 4d. to 6d. do.; Endive, 1s. 6d. do.; Cos Lettuce, 8d. per score; Carrots, 2s. to 3s. per ton.

STRAITFORD: Sept. 18. Both trade and supply have been good during the past week. Prices:—Cabbages, 2s. to 3s. per tally; Cauliflowers, 2s. per dozen; Turnips, 2s. per dozen bunches; Carrots, household, 30s. to 40s. per ton; Mangels, 19s. to 23s. do.; Swedes, 24s. to 26s. do.; Onions, Dutch, 3s. 9d. to 4s. 3d. per bag; Watercress, 6d. per dozen; Pears, Dutch, 2s. 6d. per bushel; Apples, 7s. to 8s. per barrel; do., English 5s. to 10s. per bushel; Plums, 2s. 6d. to 3s. per half-sieve; Tomatoes, 5d. to 6d. per lb.; Beetroot, 3s. per dozen; Carrots, 2s. do.; Cucumbers, 4d. do.

POTATOS.

BOROUGH AND SPITALFIELDS: Sept. 18.—Blight is still prevalent, but a portion of the supplies are coming better assorted, and for the best of such there is a steadier trade with firmer prices, whilst inferior parcels still sell badly:—Regents, 30s. to 80s.; Hebrons, 60s. to 80s.; Early Roses, 50s. to 70s.; Magnum Bonums, 50s. to 90s.; Myatts, 50s. to 60s. per ton.

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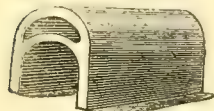
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18x12	22x16
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16x14	20x18
18x14	22x18
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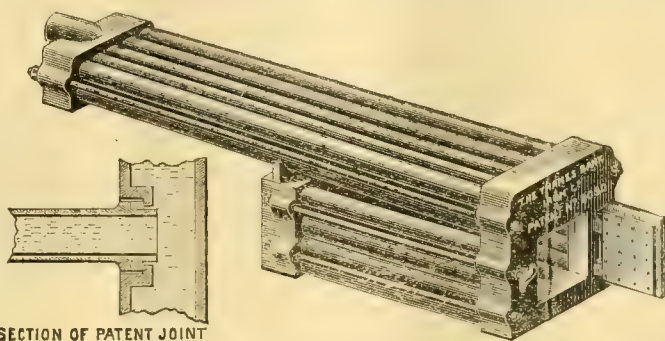
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MR. E. JOHNSON, formerly Head Gardener to
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MR. S. J. BURGESS, late Head Gardener at
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Head Gardener to H. RICARDO, Esq., Rawdon
House, Hoddesdon, Herts.

MR. T. BURGESS, late Foreman at Ford Manor,
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desdon, Herts.

MR. T. TROLLOPE, late General Foreman at
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been appointed Gardener to Colonel H. STRATTON
BATES, Twyford Lodge, Winchester.

MR. T. CLARKE, late Head Gardener at Lygrove
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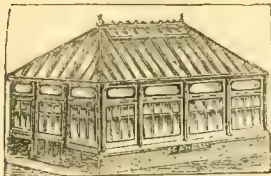
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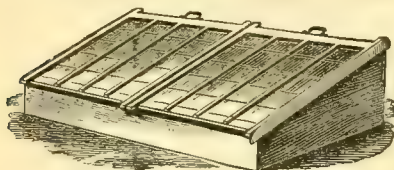
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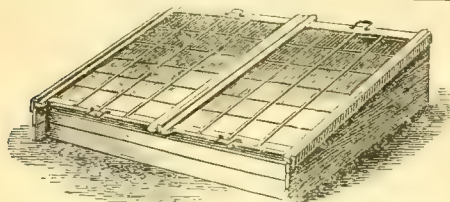
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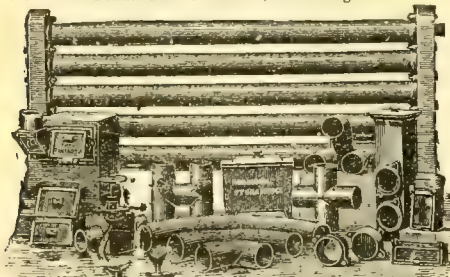
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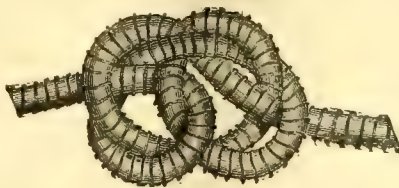


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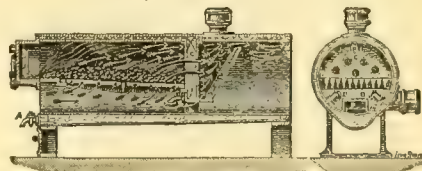
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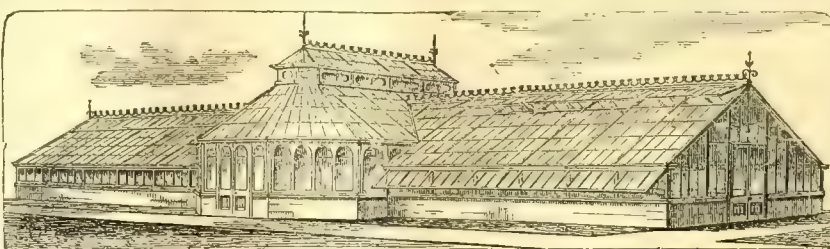
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ESTABLISHED 1841.
No. 2492.

No. 92.—VOL. IV. {THIRD} SERIES.

SATURDAY, SEPTEMBER 29, 1888.

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SALE, OCTOBER 1, and two following days, instead of September 25 and 26, as previously advertised.

MESSRS. PROTHEROE AND MORRIS (having sold the Freehold Estate), are instructed to SELL BY AUCTION, on the Premises, the Kingston Nursery, Kingston-on-Thames, close to the Kingston Railway Station, on MONDAY, October 1, and two following days, without reserve, at 12 o'clock precisely each day, the whole of the well-grown GREENHOUSE and STOVE PLANTS, including some thousands of Ferns, Geraniums, Fuchsias, 1000 Pot Roses, 200 large Double White and other Camellias, from 2 to 12 feet, particularly worthy the notice of the Trade; Azalea indica, a large and choice assortment of ESTABLISHED ORCHIDS, comprising Cattleyas, Vandas, Saccolabiums, Aerides, and Odontoglossums, principally O. Alexandrinum, also the LIVE and DEAD STOCK, consisting of 4 Horses, 5 Cows, 2 Exhibition Plant Vases, Utensils-in-Trade, and numerous other effects.

May be viewed three days prior to the Sale. Catalogues may be had on the Premises; at the various Branch Nurseries, Norbiton and Long Ditton; of G. C. SHERRARD, Esq., Solicitor, 25, Lincoln's Inn Fields, W.C.; and Kingston; and of the Auctioneers, 67 and 68, Cheapside, London, E.C., and Leytonstone, E.

N.B.—The whole of the Valuable Nursery Stock now growing on the Branch Nurseries, will be lotted to suit Large and Small Purchasers, and Sold without reserve, on the respective Premises, OCTOBER 15 and following days, in the meantime anyone desirous of having either of the productive Nurseries transferred may arrange to do so with the Auctioneers, which would afford them the opportunity of purchasing only what Stock they require at unreserved Auction Prices.

Thursday Next.

About 50,000 KENTIA SEEDS, just received in splendid condition, for Unreserved Sale.

MESSRS. PROTHEROE AND MORRIS will include the above in their SALE of BULBS on THURSDAY NEXT, October 4, 1888.

On view morning of Sale, and Catalogues had.

Friday Next.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. Seeger & Tropp to SELL BY AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY NEXT, October 5, at half-past 12 o'clock precisely, a fine importation of *LILIA GOULDIANA* (described by Professor Reichenbach in the *Gardener's Chronicle* of January 14 last), warranted true; also fine clumps of *EPIDENDRUM VITELLINUM MAJUS*, *LILIA ANCEPS*, *CATLEYA CITRINA*, and *SOBRALIA MACRANTHA NANA*. The Sale will also include good healthy plants of the beautiful new hybrids, *CYPRIPEDIUM SEEGERIANUM*, *C. SPIGERIANUM*, and *C. HARRISIANUM*, &c., *PAGEANUM* (C. VEITCHII and C. HOOKERII); well established plants of *ODONTOGLOSSUM ASPERSUM* and *HUMEANUM*, semi-established plants of *LILIA PURPURATA*, in flower or bud; two *MILTONIA CLOWESII*, grand forms, in flower; *CATLEYA SANDEMANI*, fine established specimen; two *MILTONIA VIRGINALIS* extra fine varieties, sepals and petals pure white, lip also pure white, with a dark purple blotch in the centre; a most beautiful variety of *CYPRIPEDIUM BARBATUM*, in flower; *CYPRIPEDIUM PURPURATUM* (true), with two flowers; a new (?) *LYCASTE*, in flower; a fine plant of the true *CATLEYA GRANULOSA*, in flower; ten *LILIA ELEGANS*, among which are fine specimens; and other ORCHIDS of value. Also a grand new *CATLEYA*, *C. IMSCOOTIANA*.

On view morning of Sale, and Catalogues had.

Friday Next.

The COLLECTION of ESTABLISHED ORCHIDS formed by A. S. Hughes, Esq., late of Lee, without reserve.

MESSRS. PROTHEROE AND MORRIS are instructed by A. S. Hughes, Esq., to SELL BY AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY NEXT, October 5, at half-past 12 o'clock precisely, the COLLECTION of well-grown ESTABLISHED ORCHIDS, comprising a large quantity of *Odontoglossums*, *Onchidiums*, *Cattleyas*, *Dendrobiums*, *Cypripediums*, *Calogyne cristata alba*, *Sophroitis grandiflora* (a splendid variety), *Lycaete Skinneri alba*, *Nepenthes*, &c.; also 30 lots of *ANGRECEUM SESQUIPEDALE*, splendid plants, another property.

On view morning of Sale, and Catalogues had.

Friday Next.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. Seeger & Tropp to include in their SALE, on FRIDAY NEXT, October 5, a grand new *Catleya*, *CATLEYA IMSCOOTIANA*.

The sepals and petals of this new *Catleya* are pure white, lip exactly the same as of a *Catleya aurea*, with the golden stripes through its purple lips; it is a very healthy compact plant, with two flowers just expanded.

On view morning of Sale, and Catalogues had.

Lea Bridge Road, E.

ANNUAL UNRESERVED SALE of Winter-flowering HEATHS, &c.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. John Fraser to SELL BY AUCTION, on the Premises, the Lea Bridge Nurseries, Lea Bridge Road, Leyton, E. (close to the Hoe Street Station, Great Eastern Railway), on MONDAY, October 8, at 12 o'clock precisely, in consequence of the large quantity of lots, a large quantity of WINTER-FLOWERING and other PLANTS, including:—

6000 <i>Erica hymenalis</i>	500 <i>Marécha Niel</i> and other
2000 " <i>gracilis</i>	Roses
4000 fine named Hollyhocks, from seed	2000 <i>Clematis</i> Jackmanni and other sorts
1000 <i>Lagerflora rosea superba</i>	3000 <i>Bouvardias</i> of the finest sorts
3000 <i>Cyclamen persicum</i> (Fraser's superb strain)	3000 <i>Solanums</i>
1000 <i>Clematis flammula</i>	3000 <i>Genista fragrans</i>

and considerable quantities of *Eparias*, *Passion-flowers*, *Jasmines*, *Honeysuckles*, *Green and Variegated Ives*, *Ampelopsis Veitchii*, *Escallonia pyracanthus*, *Tree Carnations*, *Clematis indivisa lobata*, *Early-flowering Chrysanthemums*, &c.

The whole of the Stock is in the best condition, and ready for immediate Sale.

May be viewed. Catalogues had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, E.C.; and Leytonstone, E.

Peterborough.

Under a Deed of Assignment.—Unreserved CLEARANCE SALE by order of the Trustee of the Estate of Mr. John House, the Freehold Nursery having been disposed of.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL BY AUCTION, on the Premises, the Branch Nursery, Peterborough, a short distance from either of the Peterborough Railway Stations, on TUESDAY, October 9, at 12 o'clock precisely, without reserve, the whole of the well-grown NURSERY STOCK, consisting of a great variety of *Conifers* and *Evergreen Shrubs*, 2000 *Prunus* Frs., 1000 *Cupressus Lawsoni*, 1000 *Aucubas*, 500 *Box*, 3000 *Fruit Trees*, including a fine batch of *Maiden Apples*, 3000 *Gooseberries* and *Currants*, 2000 *Limes* and other Standard Trees, &c.

May be viewed one week prior to the Sale. Catalogues may be obtained at the Seed Shop, Church Street, Peterborough; of J. ADNITT, Esq., the Trustee, Oriel House, New Road, Peterborough; and of the Auctioneers, 67 and 68, Cheapside, E.C., and Leytonstone, E.

Sales by Sample.

IMPORTANT TO THE TRADE.

MESSRS. PROTHEROE AND MORRIS desire to announce that their SALES BY SAMPLE of NURSERY STOCK and GREENHOUSE PLANTS will commence on TUESDAY, October 9, and be continued every alternate Tuesday.

Central Auction Rooms, 67 and 68, Cheapside, E.C.

Birmingham.

VERTEGANS' NURSERIES.

IMPORTANT SALE of one of the most valuable NURSERY, SEED, and FLORIST'S BUSINESSES in the Provinces. Established upwards of 30 years.

MESSRS. PROTHEROE AND MORRIS, of London, in conjunction with Mr. W. C. B. CAVE, of Birmingham, are favoured with instructions from the sole proprietor, Mr. R. H. Vertegans (who is retiring from the business), to SELL BY PUBLIC AUCTION, at the Royal Nurseries, Harborne Road, Edgbaston, on TUESDAY, the 9th day of October next, at 2 o'clock punctually, the various NURSERIES, DWELLINGS, &c., in lots, as under, and including the Leases, Stock, Goodwill, and Possession, as going concerns:—

Lot 1.—The ROYAL NURSERIES, RESIDENCE, and COTTAGE (Hans Niemand & Co.), Harborne Road, Edgbaston.

Lot 2.—The METCHELEY PARK NURSERY and COTTAGE, Edgbaston.

Lot 3.—The SHELLEY NURSERIES and TWO COTTAGES, Great Malvern.

Lot 4.—The RICHMOND HILL NURSERY, Edgbaston.

Lot 5.—The CHAD VALLEY NURSERIES and RESIDENCE, Edgbaston, and the BIRMINGHAM MARKET HALL BUSINESS.

Plans and particulars may be had at the several Nurseries; also from Messrs. PROTHEROE AND MORRIS, Auctioneers, 67 and 68, Cheapside, London, E.C.; and from Mr. W. C. B. CAVE, of Birmingham.

The Milford Nurseries, near Godalming, Surrey.

One mile from Milford Railway Station, and a mile and a half from the new Godalming Railway Station.

FOUR DAYS' UNRESERVED SALE of beautifully grown NURSERY STOCK in excellent condition for removal, by order of Mr. Maurice Young.

Important to Noblemen, Gentlemen, Nurserymen, and others extensively engaged in planting.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL BY AUCTION, on the Premises, the Milford Nurseries, Milford, Surrey, on WEDNESDAY, October 10, and three following days, at 12 o'clock punctually each day several Acres of unusually well-grown NURSERY STOCK, which has been carefully prepared for removal, including a splendid assortment of Specimen *Conifers* and *Evergreens*, 6 to 12 feet; fine examples of Young's Golden Juniper, 3000 *Border Shrubs*, 3 to 6 feet; 1500 *Aucubas*, 2 to 3 feet; 3000 *Conifers*, 1 to 4 feet; 6000 *Laurels* of sorts, 2 to 3 feet; 5000 *Evergreen Privet*, 3 to 4 feet; 5000 *Ornamental and Forest Trees*, 6 to 12 feet; 8000 choicest named Hybrid and *Ponticum Rhododendrons*, 1000 Standard and Dwarf *Roses*, 357,000 Transplanted and Seedling *Forest Trees*, including 60,000 strong *Quick*, *Flowering Shrubs*, *Climbing Plants*, &c.

May be viewed any day prior to the Sale. Catalogues may be had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, London, E.C., and Leytonstone, E.

N.B.—Goods can be loaded at Milford Station, and conveyed to any part of Great Britain without change of trucks.

Lee, S.E.

Ten minutes' walk from Lee, Lewisham, and Blackheath Stations. UNRESERVED SALE, by Order of the Executors of the late Mr. W. North, in consequence of the expiration of the Lease.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL BY AUCTION, on the Premises the Manor Lane Nurseries, Lee, S.E., on WEDNESDAY, October 10, at 12 o'clock precisely, without reserve, the well-grown NURSERY STOCK, in capital condition for removal, comprising thousands of *Evergreen Shrubs* for potting; 2000 strong oval-leaved *Privet*, 500 *Golden Yews*, 1000 *English* and other *Yews*, Dwarf *Roses*, 1500 *Border Shrubs*, 1000 *Laurels*, 500 bushy *Aucubas*, 3 to 4 feet; 500 *Jasminums* in pots, 500 *Evergreens* in pots, 5000 *Gooseberries* and *Currants*, 5000 *Ivies*, 3 to 5 feet, and other Stock.

May be viewed any day prior to the Sale. Catalogues may be had on the Premises; and of the Auctioneers, 67 and 68, Cheapside, London, E.C., and Leytonstone, E.

Lower Norwood, S.E.

SPECIMEN ESTABLISHED STOVE and GREENHOUSE PLANTS, including several unusually fine samples of *Azaleas* and *Ericas*, which have been so successfully exhibited at the leading shows, and so well known throughout the country, having taken numerous First-class Prizes, By order of Mr. H. James.

MESSRS. PROTHEROE AND MORRIS desire to call attention to the above VALUABLE PLANTS, which they will SELL BY AUCTION, on the Premises, The Castle Nursery, Lower Norwood, S.E., on THURSDAY, October 11 at 12 o'clock, by order of Mr. H. James.

May be viewed. Catalogues now ready and may be had on the Premises; and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Lower Norwood, S.E.

THIRTEENTH ANNUAL SALE, a portion of the Land having been Sold for Building Purpose.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. H. James, to SELL BY AUCTION, on the Premises, the Castle Nursery, Lower Norwood, S.E., about two minutes' walk from the station, on THURSDAY, October 11, at 12 o'clock precisely, about 200 lots of beautifully grown ESTABLISHED ORCHIDS, clean healthy plants, including *Odontoglossums*, *Dendrobiums*, *Laelias*, *Cattleyas*; several splendid specimen Exhibition AZALEAS which have been exhibited with such great success by Mr. H. James; a quantity of STOVE and GREENHOUSE PLANTS in variety, FOLIAGE PLANTS, ROSES in POTS, CLIMBERS, &c.

May be viewed two days prior to the Sale. Catalogues had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, London, E.C.; and Leytonstone.

Dorking.

Five minutes' walk from Dorking Station, L.B. & S.C.R., and Box Hill, S.E.R.

MESSRS. PROTHEROE AND MORRIS will SELL BY AUCTION, on the Premises, the Dorking Nursery, Dorking, Surrey, on FRIDAY, October 12, at 12 o'clock punctually, by order of Messrs. Ivery & Son, a great variety of TREES and SHRUBS, in good condition for transplanting, ranging from 1½ to 5 feet in height, and particularly suitable for effective planting; a choice lot of handsome SPECIMEN PLANTS in the border, Flowering Trees, Conservatory, Greenhouse, Flowering and Foliage Plants, specimen *Camellias* and *Azaleas*, *Dracaenas*, *Ferns*, &c.

May be viewed. Catalogues had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Norbiton and Long Ditton, Surrey.

By order of the Executors of the late Mr. T. Jackson.

PRELIMINARY NOTICE of SIX DAYS' UNRESERVED CLEARANCE SALE of the whole of the well-grown NURSERY STOCK.

MESSRS. PROTHEROE AND MORRIS will SELL the ABOVE, on the various Premises, on MONDAY, October 15, and following days.

Further particulars will appear next week.

Bath.—The Bathwick Nurseries.

EXPIRATION OF LEASE.

MESSRS. PROTHEROE AND MORRIS will SELL BY AUCTION, on the Premises as above, on MONDAY and TUESDAY, October 15 and 16, by order of Mr. Edward Tiley, the whole of the well-grown NURSERY STOCK, GREENHOUSE PLANTS, GLASS ERECTIONS, &c. Further particulars will appear.

Sunningdale.

Very important UNRESERVED SALE of beautifully grown NURSERY STOCK, a large portion of which is growing on Land recently Sold, and necessitating an immediate Clearance.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. Charles Noble (who has placed in their hands the disposal of his long-established Business and Freehold Estate) to SELL BY AUCTION, on the Premises, the Sunningdale Nurseries, Bagshot, Surrey, near the Sunningdale Railway Station, on MONDAY, October 22, and five following days, the valuable and remarkably well-grown NURSERY STOCK, extending over about 50 Acres. Fuller particulars will appear.

Catalogues, when ready, had of the Auctioneers, 67 and 68, Cheapside, E.C.

Sunbury, Middlesex.—Preliminary Notice.

VALUABLE FREEHOLD NURSERY.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions from the owner to SELL BY AUCTION, on the Premises, on MONDAY, October 29, the VALUABLE FREEHOLD NURSERY, known as Osborn's Nursery, Sunbury, comprising 17 Acres of very productive Land, Brick-built Residence, 21 Greenhouses, 2 miles of Hot-water Piping, numerous Pits, Stabling, and other Trade Buildings. The Estate possesses extensive frontages to the public roads, and these frontages could be utilised for building purposes, without interfering in any way with the carrying on of the present Nursery and Florist's Business.

Particulars and Plans can be had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, E.C.

N.B.—The Extensive STOCK of STOVE and GREENHOUSE PLANTS and OUTDOOR NURSERY STOCK will be SOLD BY AUCTION, on the Premises, on MONDAY and TUESDAY, October 29 and 30.

Bulbs from Holland.

Sales every MONDAY, WEDNESDAY, and SATURDAY, in Large and Small Lots, to suit all Buyers.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., every MONDAY, WEDNESDAY, and SATURDAY, at half-past 12 o'clock precisely each day, first-class consignments of HYACINTHS, TULIPS, CROCUSES, and other BULBS, arriving daily from well-known Farms in Holland, lotted to suit all buyers.

On view morning of Sale, and Catalogues had.

Thursday Next.—(Sale No. 7757.)

FIRST-CLASS DUTCH BULBS.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, October 4, at half-past 12 o'clock precisely, 600 lots of First-class Double and Single HYACINTHS, TULIPS, CROCUSES, NARCISSUS, SCILLAS, SNOWDROPS, and other BULBS, from well-known Farms in Holland, lotted to suit all buyers.

On view morning of Sale, and Catalogues had.

Valuable Established Orchids.

MR. J. C. STEVENS begs to announce that he has received instructions from Robt. Warner, Esq., of Chelmsford, to offer for SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, October 11, at half-past 12 o'clock precisely, a portion of his well-known COLLECTION OF ORCHIDS, comprising many fine specimens of Vandas, Cypripediums, Lælias, Cattleyas, Odontoglossums, Masdevallias, &c.

Further particulars in future Advertisements.

Special Sale of Orchids in Flower and Bud.

MR. J. C. STEVENS begs to announce that his NEXT SALE OF ORCHIDS in FLOWER and BUD will take place at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, October 18, and he will be glad if Gentlemen desirous of ENTERING PLANTS FOR THIS SALE will send particulars for Catalogue as soon as possible.

Cheap Bulb Sales.

MESSRS. SMAIL AND CO. will SELL by AUCTION, at 123, Fenchurch Street, City, E.C., on MONDAY, WEDNESDAY, and FRIDAY NEXT, October 1, 3, and 5, at 12 o'clock each day, large consignments of First-class HYACINTHS, TULIPS, CROCUS, and other DUTCH BULBS, specially lotted to suit all Buyers.

Addresses of intending Purchasers Booked for Catalogues of these Weekly Sales.

Enfield Highway, Middlesex.—Larman's Farm.
TO FRUIT GROWERS, MARKET GARDENERS, AND OTHERS.

MESSRS. FULLER, HORSEY, SONS, AND CASSELL are instructed to SELL by AUCTION, at the Mart, Tottenham Yard, E.C., on WEDNESDAY, October 3, at 2 o'clock precisely (unless previously disposed of by private contract), in one lot, a valuable FREEHOLD PROPERTY, land tax redeemed, 19 acres 1 rood and 30 perches, situate at Enfield Highway, within 1½ mile of Enfield Lock Station on the Great Eastern Railway, with frontages to Bell Lane and the High Road, comprising a Fruit Garden of about 15½ acres, well-stocked with a choice variety of young Fruit Trees, consisting of Pears, Apples, Plums, Currant Gooseberry, and other Bushes. Dwelling-house, containing 10 rooms, Dairy, Wash-house, Coach-house, Stables, Granary, Packing Sheds, and General Farm Buildings.

May be viewed till the Sale, by orders to be had of the Auctioneers. Particulars and Conditions of Sale may be obtained of Messrs. ARKCOLL and COCKELL, Solicitors, 67, Tooley Street, S.E.; at the Mart; and of Messrs. FULLER, HORSEY, SONS, AND CASSELL, 11, Billiter Square, London, E.C.

Tansley Nurseries, near Matlock, Derbyshire

MESSRS. ELSE AND SON beg to announce that they are favoured by instructions from Mr. James Smith to SELL by AUCTION, at the above well-known Nurseries, without reserve, on TUESDAY WEDNESDAY, and THURSDAY, October 9, 10, and 11, 1888, several acres of highly valuable NURSEY STOCK, comprising hardy Scarlet and other Rhododendrons; also about 250,000 transplanted Seedlings from hybrids and named sorts, in sizes up to 3 feet; upwards of 150,000 Willows, in sorts; common and ornamental Hollies; Irish, English, and Golden Yews; common, Evergreen, and oval-leaved Privets; Cupressus and Retinosporas, in choice variety; Laurels, Berberis, Tree Box, Aucubas, and a numerous variety of other Ornamental Shrubs, Forest Trees, &c.

The Home Nursery, Tansley, is 2 miles distant from the Matlock Bridge Railway Station, Midland Railway. Conveyances attend all trains.

Catalogues may be had ten days prior to the Sale on application to Mr. JAMES SMITH, at the Nurseries; or to the Auctioneers, Matlock Bridge.

Whittington Nurseries, near Lichfield.

IMPORTANT SALE OF NURSERY STOCK.

MESSRS. WINTERTON AND SONS are instructed by Mr. Edward Holmes to submit for UNRESERVED COMPETITION at the above well-known Nurseries, on TUESDAY, WEDNESDAY, and THURSDAY, October 9, 10, and 11, at half-past 10 o'clock each day, a large quantity of FRUIT TREES of the best sorts, in Standard, Pyramidal, and Dwarf; FOREST TREES, including Scotch, Austrian, Larch, and Spruce Firs; a complete collection of EVERGREEN, DECIDUOUS, and ORNAMENTAL TREES and SHRUBS, viz., Box, Laurels, Hollies, Aucubas, Lilacs, Spiræas, Syringas, &c.; a grand collection of Conifers, in many varieties, suitable for pots and boxes; a quantity of named Rhododendrons, (Ghent mollis) Azaleas, and other American Plants; Herbaceous and Rock Plants, in lots to suit all purchasers.

Particulars in Catalogues to be obtained from the place of Sale, or the Auctioneers, Lichfield and Walton Warren, Burton-on-Trent.

WANTED, TO TAKE AT ONCE, for a term, a compact, well arranged MARKET NURSERY, containing from 400 to 600 feet of Glass, with or without dwelling-house; must be in thorough repair.

Particulars to A. M., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

To Florists and Nurserymen.

FOR SALE, LAND suitable for the above, in Plots of 1 Acre and upwards.
Apply to Mr. J. EMBLETON, Suffolk House, Newhampton.

FOR DISPOSAL, CHEAP, a compact NURSERY and DWELLING HOUSE in Main Road, 8 Glass Houses, and about an Acre of Ground. Rent low; small stock at valuation or otherwise. Write
H. G., 58, Garfield Road, Lavender Hill, S.W.

FOR SALE, A NURSERY, SEED, and CUT FLOWER BUSINESS, situated in a rising town in Yorkshire. The Nursery is 6 acres, and is well stocked with a first-class General Nursery Stock. There are 4 Plant Houses and a number of Pits, all well suited for Market work. The shop trade is mostly cash, and satisfactory reasons will be given or shown why disposing. This is a rare opportunity for a retiring Gardener.—Apply to S., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

FOR SALE, FREEHOLD BUILDING LAND, suitable for Fruit Growing and Garden Purposes, adjoining station at Ashford, Middlesex, near Richmond and Twickenham. 20 ft. frontage, 120 ft. deep; £20 a plot, or 6s. per month. Water, gas, road made—free conveyance—plans.
Mr. FIELD, 3, Bucklersbury, E.C.

South of England.

LARGE GARDEN, 20 Acres, with Twenty Greenhouses and Vineries. £7000 has been spent on the property. Seven years' lease. Two Cottages inclusive. £150 a year. ELDRIDGE, Port-mouth.

TO LET, A Small JOBBING and FLORIST'S NURSERY, consisting of 4 Houses and several Pits, excellently situated, in most fashionable part of Leicester. An advantageous opportunity for an energetic and enterprising man. Apply, HARRISON AND SONS, Royal Midland Seed Establishment, Leicester.

ORCHIDS.

THE LIVERPOOL HORTICULTURAL CO.

(JOHN COWAN), Limited,

Have just received a fine Importation of

VANDA LAMELLATA BOXALLI

AND

SCHOMBURCKIA THOMSONIANA, New,

and now offered for the first time.

Circular with full particulars of these and other Importations, also copy of their new Illustrated and Descriptive CATALOGUE OF ORCHIDS, will be sent free on application.

THE VINEYARD AND NURSERIES, GARSTON, near LIVERPOOL.

MAIDENHAIR FERNS, strong stuff, in 60-pots, fit for potting on, 16s. per 100 for Cash, with Order. H. ROSE, Oakfield Nursery, Hampton.

EUONYMUS (Green).—50,000, all nice bushy well-grown Specimens, 9 to 36 inches, £1 to £10 per 100. J. J. CLARK, Goldstone Farm, Brighton.

The Sale by Auction of the Old-established Collection of Orchids

FORMED BY

MONS. ROUGIER-CHAUVIÈRE, HORTICULTEUR, 152, Rue de la Roquette, Paris, will take place on the Premises, on WEDNESDAY, THURSDAY, and FRIDAY, October 10, 11, 12, and following days.

This celebrated Collection contains, among other choice kinds, some splendid specimens of the rare CYPRIPEDIUM CALURUM and C. SUPERCILIARE (Rougier's varieties), CATTLEYA LABIATA, PESCATOREI, and ATROPURPUREA; the equally rare CATTLEYAS ROUGIERI, CARRIERI, RIVIERI, HENRIETTÆ, DU BUYSONI, and BULLIERI; VANDA CERULEA (Rougier's var.), VANDA TRICOLOR NÆVIUM, and TRICOLOR FORMOSA, ANGRÆCUM SESQUIPEDALE, ELLISI, &c.

On view Monday and Tuesday, October 8 and 9.

Catalogues may be obtained from Mr. GODEFROY LEBEUF, Horticulteur, Argenteuil, Seine-et-Oise, who will supply all necessary information, and represent at the Sale any intending purchasers who may honour him with their confidence.

RIPPINGILLE'S

PATENT HOT-WATER APPARATUS,
FOR GREENHOUSES, CONSERVATORIES, &c.

The most efficient and economical means of heating small Greenhouses and Conservatories ever introduced. ODOURLESS, SMOKELESS, PORTABLE, SAFE, and CLEANLY. Will burn from 18 to 20 hours without attention, and are so simple a child can manage them.

Manufactured of the best material, carefully tested, and warranted sound. Price from 21s. each.

Illustrated CATALOGUE of these, and also "RIPPINGILLE'S PATENT CELEBRATED OIL WARMING STOVES," together with the name of the nearest Agent, sent free on application to the Sole Manufacturers.

THE ALBION LAMP COMPANY, Aston Brook Lamp Works, BIRMINGHAM.

PEACH TREES for SALE.—Extra size, ranging from 5 to 10 feet high, and as much through. The best sorts represented; 1000 feet of south walling being engaged for their growth. For particulars, apply to R. GILBERT, High Park Gardens, Stamford.

Kent—The Garden of England.

STRAWBERRIES true to Name.
GEO. BUNYARD AND CO.'S New LIST, embracing, Noble, Waterloo, &c., and the 30 best kinds, may now be had on application. Splendid Plants in little pots, and Runners. The Old Nurseries, Maidstone.

NARCISSUS POETICUS PLENUS (Sweet-scented Double White). Bulbs as taken up, the very largest-sized only being eliminated. Very true, 12s. 6d. per 1000, free on rail.—AMATEUR, Coly House, Long Sutton, Lincolnshire.

TO BE SOLD, in one lot (owner giving up keeping them) a COLLECTION of STOVE PLANTS. For particulars apply to J. PHILLIPS, 9, Grove Road, Commonside, Mitcham.

PEAT for ORCHIDS,

AZALEAS, HEATHS, FERNS, RHODODENDRONS, &c.
The Best in the World.

A. JOHNSON AND CO., 23, Leadenhall Street, London, E.C., continue to receive the highest testimonials (unsolicited) from large Orchid Growers, stating the ORCHID PEAT supplied by A. J. & Co. is by far the best they have ever used. Samples can be sent at above address, or forwarded on application free of charge.

SAVE HALF THE COST.

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As a Supplement
TO THE
GARDENERS' CHRONICLE
FOR
Next Week, October 6,
WILL BE
Published an Ink Photograph
OF
VIEW in the PUBLIC GARDENS,
MADEIRA.



THE

Gardeners' Chronicle.

SATURDAY, SEPTEMBER 29, 1888.

MOTE PARK.

THE Mote, as this place was formerly called,
is a very ancient site. There are two
motes in Kent, and many others elsewhere, and
although some of these are mis-spelt and derive
their names from the moat that surrounded them,
others, like the one I am about to describe near
Maidstone, trace their origin to the Anglo-Saxon
mote, an assembly or court of justice, which used
to be held in the vicinity. The gardens of the
Dowager Lady Howard de Walden, the present
occupier of Mote Park, are so extensive and inter-
esting that they will not leave me space for much
historical description. It must suffice to say
that in the time of Richard II. the Mote passed
from the family of Leyborne to that of Wood-
ville, one of whom was created by Henry VI.
Lord Rivers, Grafton and De La Mote. There
are few persons, perhaps, with such a minute
knowledge of history as to remember that
Elizabeth Woodville, the daughter of this noble-
man, became the wife of Edward IV., and
afterwards his widow and mother of the young
princes who were murdered by their uncle, the
Duke of Gloucester, in the Tower. But the play
of *Richard III.* will recall to mind the sad
history of the Woodvilles. Many persons doubt-
less will remember that Lord Rivers was executed
at Pomfret by that general murderer, King
Richard, and that his ghost was one of the
dozen that Richard's "coward conscience" called
up on the night before the battle of Bosworth.

After several changes of ownership the Mote
passed in 1690 into the possession of the Mar-
shams, whose representative, Sir Robert Marsham,
was created Lord Romney in 1716. The third
Lord built the present square, capacious, white
house, whose east front is by far the best, because
it is most covered up by creepers. The third
Lord gave a great dinner to 3000 guests, in-
cluding that excellent farmer, George III., and
a number of the Kentish yeomanry. The festival
was held near the site of the old house, on a spot
where a pavilion has since been erected to com-
memorate it. The present owner of Mote Park
is the fourth Earl of Romney. It is a place of

great beauty and delight, perfectly retired though bounded on one side by the high road on its entrance into Maidstone. The Len runs for a distance of 2 miles through the park, expanding into a lake before the house, and entering the Medway at Maidstone immediately after quitting the domain. A principal lodge and entrance gate stands almost in the town, and from that spot a walk or drive, whichever it may be—only it ought to be slow for the sake of prolonging the pleasure—passes up the valley of the Len, through a charming park of 600 acres, 1 mile to the house and 1 mile further on to the spot where the park commences. It is a path of changing levels free from monotony, and the timber, planted probably about the time when the house was built, is better than if it were ancient, since the trees, growing as they do, in rich, deep soil in the "rags" of Kent, are young and vigorous, yet they are already great and sometimes grand in size. There is a great variety of timber, and it grows tall, as the Apples in the orchards do in Kent. It seems that branches run up in proportion as roots run down: the Oaks and Elms accordingly are taller than on poorer soils.

In passing up the carriage-drive I observed the Turkey Oak, Acacias, Sweet and Horse Chestnuts, Tulip trees, and Planes, all large handsome trees, with the White Thorn and Laburnum sometimes growing singly, sometimes intertwined. I passed an Elder of unusual size, several Catalpas coming into flower, and *Ailanthus glandulosa*, which flowered freely last year. The shrubberies around the house afford an interesting lesson in arboriculture and botany, from the great variety of plants that have been introduced.

The house, gardens, and shrubbery cover about 40 acres of ground, the vegetable garden occupying 7 acres, and yet it does not produce more than is required for the different establishments of the family, though it would be difficult to conceive a garden more productive. The garden proper, exclusive of the park, employs twenty-five gardeners under the care of Mr. Charles Davies. The extensive ranges of houses, which existed three years ago, were described in the *Gardeners' Chronicle*, October 10, 1885; but since that date they have become much more extensive, so that there is much that is new to notice. The walk round the garden with Mr. Davies must be a rapid one. Quitting the kitchen we crossed a lawn, and then entered an orangery ventilated thoroughly and very cleverly by a contrivance invented by Lady Howard de Walden herself. We then passed along a broad walk a quarter of a mile in length, and passing straight to the door of the house on the east side. One would like to saunter here very slowly to observe not only the flowers and shrubs which fill the borders of the walk, but the just proportions both of the pathway and its borders. The former is 15 feet wide, each border is 20 feet wide.

At the back is a row of Wellingtonias, looking very well at present, but they do not much like the Kentish rag, and are apt to show their objections as they grow older. In front of these is a row of *Rhododendrons*, *Azaleas*, and *Kalmias*, and then, next the gravel, beds of flowers edged with the dwarf *Euonymus* (*radicans variegata*), *Heaths*, *Retinospora*, and other suitable evergreens. The long borders are filled with herbaceous and other plants, some of which are changed during the summer, so as to produce a display of flowers always at the best, and often varying. There are *Pentstemons*, and *Pelargoniums*, and many more favourite plants, with the *Glaucolias* and *Lilium*

auratum in pots for removal. Bulbs for spring flowering are planted in their season.

A terraced garden on the south side of the house is planted with banks of *Rhododendrons* and beds of *Roses*, *Asters*, *Lilium auratum*, herbaceous *Phloxes* and *Petunias*, the terraces being divided by lines of *Hedgehog Holly*, *Golden Yew*, and *Golden Retinospora*, 6 or 8 feet high, and very rich in colour, which is characteristic of this spot. Leaving the terrace we entered a walk, which passes for the length of a mile through that part of the 40 acres, which is devoted to shrubbery. It is a delightfully cool walk, shaded by good old sorts of trees and shrubs, such as *Yews*, *Hollies*, *Box*, *Laburnum*, and many less common, though not perhaps less beautiful. Five acres of orchard, planted by Mr. Davies on the Kentish plan, are enclosed by the shrubbery, and we passed this orchard in our way. We passed, too, several clumps of stately *Elms*, with seats beneath, very tempting on a hot day. There are various *Conifers* dotted about, but at a certain age they die at the top. Apple trees grow as tall as you please and continue to bear abundantly when as big as timber trees. It is said that their roots run down deep into the fissures of the ragstone, which, on the contrary, *Conifers* cannot tolerate.

In the course of our stroll we passed a specimen of that handsome shrubbery ornament, a bank of the common *Cherry Laurel* cut close so as to form a dense green ground covering. Then by way of variety the path passes between hedges of *Rhamnus alaternus* and *Arbutus*, and after that we came to a Rose garden, or rather a herbaceous garden planted with abundant *Roses*, *Honeysuckles*, *Clematis*, *Syringas*, *Peach trees*, *Pinks*—anything, in fact, that is attractive and capable of yielding a flower in its season. Remembering the variety of the specimens it may readily be imagined what a very delightful walk this must prove to those who are interested in trees and shrubs and flowers. I have omitted to mention that the New Zealand *Veronica Traversi*, with its pale flower, is here quite hardy and grows well under the shade. As the long path is well kept I was glad to see a bit of it under repair, and I am now able to say that a gravel walk, soft to the feet and without a weed, may be made by boiling some tar, mixing it with gravel, spreading the hot mixture 2 inches thick, and covering that layer with an inch or two of gravel. Such a path will never require weeding.

The end of the shrubbery walk brought us close to the principal entrance of the kitchen garden, where we commenced a two-hour walk—and not a lounging one—through the various houses. There are five vineries—two *Muscat* houses, two for *Hamburgs*, and a late house planted with *Alicante*, *Lady Downe's*, and *Gros Colmar*. Mr. Davies is evidently a master of the art of Grape-growing. He has a large *Muscat* house, whose many hundreds of bunches would average 3 lb. each, many of them weighing 6 lb. or 7 lb.

Among the flowering houses there is one containing 300 tuberous *Begonias*, most brilliant in appearance; another is devoted to *Fuchsias*, *Campanulas*, *Hydrangeas*, *Crassulas* and *Phloxes*. Another is filled with Mr. Veitch's greenhouse *Rhododendrons*, with *Taylori* in flower as well as *President*, which was sent out this year, having pale salmon-coloured corollas and purple stamens.

Another house is filled with *Ferns* and *Palms*, with the curious flaring spathe of the *Anthurium* lighting up the greenery here and there. In the same house is Messrs. Veitch's *Gymnogramma Pearcei robusta*, which received the Royal Horti-

cultural Society's First-class Certificate this year, with several other of Messrs. Veitch's recent introductions.

A *Camellia*-house, 70 feet long, came next, and then an *Azalea*-house of the same size, a *Bougainvillea* house, three early *Peach*-houses, and a house for pot Vines, which are very successfully grown here, each Vine in a 13-inch pot, and bearing a high average weight of Grapes.

In the *Tomato*-house we found the crop gone and the plants about to be cut back for fresh growth, and to bear fruit during the winter. Cucumbers are bearing well here in the refined society of *Gesneras* and *Eucharis*. Another house produces winter Cucumbers, and is now planted with Melons. I must not omit the house containing, among other good specimens of *Amaryllis*, a capital seedling raised by Mr. Davies. Other houses I must pass by. I suppose if a few of them were carried away by some genii of the *Arabian Nights* someone on the premises would miss them, but they are too numerous for me to enumerate them; nor must I dwell upon the pits and frames, where a vast amount of useful work is done.

I have passed on rapidly in order to mention the series of *Orchid*-houses, commencing with a house for *Odontoglossums*, another for the same coming from a warmer climate, an intermediate house; then a *Cattleya*-house with *C. Gaskelliana* in blossom, and *Lælia elegans* Turneri (true) with a good lip, and a *Moth Orchid* in blossom; then an *East India*-house, containing *Calanthe veratrifolia* tectoria in flower, without a spot in the centre, as well as *Peristeria elata* (dove flower), and a variety of *Cypripedium* (*Slipper Orchid*) in flower. Another *Lælia*-house followed, with *Cattleya Leopoldi* in flower, and a *Lycaste*-house. A house of 40 feet in length is devoted to the varieties of *Phalænopsis*, the *Butterfly Orchis*, with a number of foliage plants arranged with great taste, and *Ficus repens* covering the back wall.

KITCHEN-GARDEN.—I must be content with a brief visit to the kitchen garden. Apples and Pears are grown here on cordons planted in November five years since, and now 10 or 12 feet high, and yielding a crop every year, through the protection of what is known in the trade as "No. 3 shading." A single row of cordons was left unprotected this year, and it now carries a dozen Pears, while the protected rows bear a full crop of about seven sieves each, worth in many seasons as much as 30s. per sieve. The plan of protecting fruit trees, specially adapted as it is, to cordons and low bushes, is an old one, but it is not so common as it should be, and I may therefore mention the ease and cheapness with which it is carried out here. Two rows of cordons are planted 10 feet apart, and outside each row is a rail to carry the "shading," which also rests for additional support on a wire that runs up the centre between the two rows. The shading is left on from the first opening of the blossom till the foliage becomes sufficient to protect the young fruit. Cordons are planted 18 inches apart on walls having a wooden coping of 18 inches, to which is fastened a fish-net that hangs down in front of the trees. A wall covered with Plums and Morello Cherries has a border 22 feet wide planted with bush fruit; and wall and border are both covered with fish nets, as protection from frost and birds. Each season the nets, covering the length of 200 feet of wall, are put up by two men in a day. There are wooden uprights in front of the border, 5 feet high, and 10 feet apart, with wire running to the wall to carry the

net, and a strong wire for the same purpose runs along the wall at a height of 12 feet. Next the ground wire netting is used to prevent the ordinary net from rotting.

Mr. Davies strongly recommends the treatment of Poinsettias advocated in the *Gardeners' Chronicle* four years ago by Mr. Denning. He has planted out the same plants in the kitchen garden three years in succession. After having been cut down they are allowed to "break;" the balls are then reduced, and they are planted outdoors early in June, and taken indoors again the first week in September, when they are treated in the usual way. It is found that ten weeks of "Nature" strengthens the plants immensely. They become bushy, and produce several bracts. Solanums and Bouvardias are treated in the same manner, the former going outdoors in May when shabby, and coming in again, full of berries at the end of September. Bouvardias are turned out the first week in June, and taken in at the end of August, to flower two months afterwards.

The glory of the kitchen garden for ornament and perfume is a double row of Lavender, planted five years since, one row on each side of a central path 600 feet in length, running through the garden. At the end of August the Lavender was in full blossom. Chiswick Favourite Potato produced last year five sieves per rod, and is yielding a large crop this year, free from disease. Veitch's Main Crop Onion is well formed, has good bulbs even in this year of too much top, keeps well, and is considered by Mr. Davies to be the best Onion in cultivation. I have seen beds this year all leaf, many bulbs of Main Crop weigh here $\frac{3}{4}$ lb. each. H. E.

PLANT-LIFE.

(Concluded from p. 323.)

REFERRING to the assigned causes of variation, Mr. Dyer continued:—

"Though it is difficult to establish the fact that external causes promote variation directly, it is worth considering whether they may not do so indirectly. Weissmann, like Lamarck before him, has pointed out, as others have also done, the remarkable persistence of the plants and animals of Egypt; and the evidence of this is now even stronger. We owe, at Kew, to the kindness of Dr. Schweinfurth, a collection of specimens of plants from Egyptian tombs which are said to be as much as 4000 years old. They are still perfectly identifiable, and, as one of my predecessors in this chair has pointed out, they differ in no respect from their living representatives in Egypt at this day. The explanation which Lamarck gave of this fact 'may well,' says Sir Charles Lyell, 'lay claim to our admiration.' He attributed it, in effect, to the persistence of the physical geography, temperature, and other natural conditions. The explanation seems to me adequate. The plants and animals, we may fairly assume, were, 4000 years ago, as accurately adjusted to the conditions in which they then existed as the fact of their persistence in the country shows that they must be now. Any deviation from the type that existed then would either, therefore, be disadvantageous or indifferent. In the former case it would be speedily eliminated, in the latter it would be swamped by cross-breeding. But we know that if seeds of these plants were introduced into our gardens we should soon detect varieties amongst their progeny. Long observation upon plants under cultivation has always disposed me to think that a change of external conditions actually stimulated variation, and so gave natural selection wider play and a better chance of re-establishing the adaptation of the organism to them. Weissmann explains the remarkable fact that organisms may for thousands of years reproduce themselves unchanged by the principle of the persistence of the germ-plasm. Yet it seems hard to believe that the germ-plasm, while enshrined in the individual whose race it is to perpetuate, and nourished at its expense, can be wholly indifferent to all its fortunes. It may be so, but in that case it would be very unlike other living elements of organised beings.

VARIATION IN CULTIVATED PLANTS.

"I am bound, however, to confess that I am not wholly satisfied with the data for the discussion of this question which practical horticulture supplies. That the contents of our gardens do exhibit the results of variation in a most astonishing degree no one will dispute. But for scientific purposes any exact account of the treatment under which these variations have occurred is unfortunately usually wanting. A great deal of the most striking variation is undoubtedly due to wide crossing, and these cases must, of course, be eliminated when the object is to test the independent variation of the germ-plasm. Hoffman, whose experiments I have already referred to, doubts whether plants do as a matter of fact vary more under cultivation than in their native home and under natural conditions. It would be very interesting if this could be tested by the concerted efforts of two cultivators, say, for example, in Egypt and in England. Let some annual plant be selected, native of the former country, and let its seed be transmitted to the latter. Then let each cultivator select any variations that arise in regard to some given character; set to work, in fact, exactly as any gardener would who wanted to 'improve' the plant, but on a preconceived plan. A comparison of the success which each obtained would be a measure of the effect of the change of the environment on variability. If it proved that, as Hoffman supposed, the change of conditions did not affect what we may call the rate of variation, then, as Mr. Darwin remarks in writing to Professor Semper, 'the astonishing variations of almost all cultivated plants must be due to selection and breeding from the varying individuals. This idea,' he continues, 'crossed my mind many years ago, but I was afraid to publish it, as I thought that people would say, How he does exaggerate the importance of selection.' From an independent consideration of the subject I also find my mind somewhat shaken about it. Yet I feel disposed to say with Mr. Darwin, 'I still must believe that changed conditions give the impulse to variability, but that they act in most cases in a very indirect manner.'

"Whatever conclusions we arrive at on these points, every one will agree that one result of the Darwinian theory has been to give a great impulse to the study of organisms, if I may say so, as 'going concerns.' Interesting as are the problems which the structure, the functions, the affinity, or the geographical distribution of a plant may afford, the living plant in itself is even more interesting still.

ADAPTATION OF FORM TO PURPOSE.

"Every organ will bear interrogation to trace the meaning and origin of its form, and the part it plays in the plant's economy. That there is here an immense field for investigation there can be no doubt. Mr. Darwin himself set us the example in a series of masterly investigations. But the field is well-nigh inexhaustible. The extraordinary variety of form which plants exhibit has led to the notion that much of it may have arisen from indifferent variation. No doubt, as Mr. Darwin has pointed out, when one of a group of structures held together by some morphological or physiological nexus varies, the rest will vary correlatively. One variation then may, if advantageous, become adaptive, while the rest will be indifferent. But it appears to me that such a principle should be applied with the greatest caution, and from what I have myself heard fall from Mr. Darwin, I am led to believe that in the later years of his life he was disposed to think that every detail of plant structure had some adaptive significance, if only the clue could be found to it. As regards the forms of flowers an enormous body of information has been collected, but the vegetative organs have not yet yielded their secret to anything like the same extent. My own impression is that they will be found to be adaptive in innumerable ways which at present are not even suspected. At Kew we have probably a larger number of species assembled together than are to be found anywhere on the earth's surface. Here, then, is ample material for observation and comparison. But the adaptive significance will doubtless often be found by no means to lie on the surface. Who, for example, could possibly have guessed by inspection the purpose of the glandular bodies on the leaves of *Acacia sphærocephala*, and on the pulvinus of *Cecropia peltata*, which Belt in the one case, and Fritz Müller in the other, have shown to serve as food for ants? So far from this explanation being far-fetched, Belt found that the former 'tree is actually unable to exist without its guard,' which it could not secure without some attraction in the shape of food. One

fact which strongly impresses me with a belief in the adaptive significance of vegetative characters is the fact that they are constantly adopted in almost identical forms by plants of widely different affinity. If such forms were without significance one would expect them to be infinitely varied. If, however, they are really adaptive, it is intelligible that different plants should independently avail themselves of identical appliances and expedients.

BOTANICAL LABORATORIES.

"Although this country is splendidly equipped with appliances for the study of systematic botany, our universities and colleges fall far behind a standard which would be considered even tolerable on the Continent in the means of studying morphological and physiological botany, or of making researches in these subjects. There is not at the moment anywhere in London an adequate botanical laboratory, and though at most of the universities matters are not quite so bad, still I am not aware of any one where it is possible to do more than give the routine instruction or to allow the students, when they have passed through this, to work for themselves. It is not easy to see why this should be, because on the animal side the accommodation and appliances for teaching comparative anatomy and physiology are always adequate and often palatial. Still less explicable to me is the tendency on the part of those who have charge of medical education to eliminate botanical study from the medical curriculum, since historically the animal histologists owe everything to botanists.

"In the seventeenth century, as I have already mentioned, Hooke first brought the microscope to the investigation of organic structure, and the tissue he examined was cork. Somewhat later, Grew, in his *Anatomy of Plants*, gave the first germ of the cell theory. During the eighteenth century the anatomists were not merely on a hopelessly wrong tack themselves, but they were bent on dragging botanists into it also. It was not till 1837, a little more than fifty years ago, that Henle saw that the structure of epithelium was practically the same as that of the parenchyma plantarum, which Grew had described 150 years before. Two years later Schwann published his immortal theory, which comprised the ultimate facts of plant and animal anatomy under one view. But it was to a botanist, Von Mohl, that, in 1846, the biological world owed the first clear description of protoplasm, and to another botanist, Cohn (1851), the identification of this with the sarcode of zoologists.

"I do not myself believe that any better access can be obtained to the structure and functions of living tissues than by the study of plants. However, I am not without hopes that the serious botany in the laboratory will be in time better cared for. I do not hesitate to claim for it a position of the greatest importance in ordinary scientific education. All the essential phenomena of living organisms can be readily demonstrated upon plants. The necessary appliances are not so costly, and the work of the class-room is free from many difficulties with which the student of the animal side of biology has to contend. The splendid laboratory on Plymouth Sound, the erection of which we owe to the energy and enthusiasm of Professor Ray Lankester, is open to botanists as well as to zoologists. At Kew we owe to private munificence a commodious laboratory in which much excellent work has already been done. And this Association has made a small grant in aid of the establishment of a laboratory in the Royal Botanic Garden at Peradeniya in Ceylon. It may be hoped that this will afford facilities for work of the same kind as has yielded Dr. Treub such a rich harvest of results in the Buitenzorg Botanic Garden.'

NECTARINES AND EVOLUTION.—In Downing's *Fruits and Fruit Trees of America* he says, "The Nectarine is known in Northern India, where it is called *moondla aroo* (smooth Peach). It appears to be only a distinct accidental variety of the Peach, and this is rendered quite certain, since there are several well-known examples on record of both Peaches and Nectarines having been produced on the same branch, thus showing a disposition to return to the natural form. Nectarines, however, usually produce Nectarines again on sowing the seeds; but they also occasionally produce Peaches. The Boston Nectarine originated from a Peach-stone." Is this a proof of an individual creation, or does it favour evolution? Are there any other cases of a similar nature [plenty. Ed., G.C.]. See London *Gardeners' Magazine*, i., p. 471; xiv., p. 53. W. M. B. Pittsburg Pa., in *English Mechanic*.

CULTURAL MEMORANDA.

IMPATIENS GLANDULIFERA.

For woodland walks and wild places, or shrubby borders, this Balsam forms a very striking object, as it towers up from 4 to 6 feet high, and sends out numerous branches from base to summit that produce a constant succession of flowers of most curious shape and appearance. This species gives no trouble in raising young plants, as seeds are shed with great freedom about the parent plant, and readily germinate the following year. All that is necessary is to limit the number of plants by thinning them out, and leaving them the proper distance apart if they are to be grown in masses, but being so large they look very well as isolated specimens. As a screen in gardens the plant fulfils a useful purpose, and growing quickly it soon forms a blind, which might be rendered still prettier by *Nasturtiums* being sown near, so that they may climb amongst the plants.

GYPSOPHILA PANICULATA.

Although this Stitchwort is not at all showy, it is exceedingly useful for cutting to form a basis in vases or stands, or to mix in any arrangement of flowers, as the sprays or heads are so light that they help to set off the whole to advantage. The plant, when in bloom, grows to a height of 3 feet or so, and forms a dense bush with its many-branched stems, with their thread-like stalks bearing innumerable tiny white blossoms. These seed freely, and plants may be readily raised in that way, or divided, the time for doing this being just when they start to grow in the spring. *J. S.*

LISIANTHUS RUSSELLIANUS.

This showy plant is now referred to the genus *Eustoma*, but whatever its botanical position, there is, when well grown, no doubt about its excellence as a decorative plant; its comparatively large rich violet-blue flowers are freely produced from the axils of the leaves towards the ends of the stems, which are slender, round, and furnished with rather small, ovate, lanceolate, glaucous green leaves, sessile, and opposite; altogether a neatly-balanced plant. Several good examples are now in flower at Ashburnham Place, and Mr. Holmes' mode of culture differs somewhat from that usually practised. He sows the seeds early in February, in the ordinary way, in an intermediate temperature, and as soon as the seedlings are fit to be handled, they are pricked out into 48's, several plants to a pot, similar to what is practised with *Rhodanthes*; they are afterwards carefully tended in the way of watering and airing, and grown all through in an intermediate temperature; the result is neat well-flowered specimens, about a foot in height, in about six months from time of sowing. A light rich soil, inclined to be peaty, suits them well. *F. R.*

DICTAMNUS FRAXINELLA.

This is one of the finest old border plants in cultivation, and yet it is not seen in many gardens; but now that the summer bedding out fever is lower than it was, it is to be hoped that such good things as the one referred to will again assume their proper place. In suitable soils the *Dictamnus* grows from 2 to 3 feet high, when in flower, and forms a bold striking object when the plant has attained size, which it is not long in doing, as the crowns quickly spread and increase in strength if proper room be given for the branches and leaves to fully develop, and the roots be not robbed by having others too near them. Besides the ordinary form, which has pale purple flowers with a deeper pencilling on the petals, there is a white variety, which is not so robust in growth, but which is a very desirable kind to have; both sorts are agreeably and highly perfumed, and the spikes are in favour with some for drying and using as scent. There are two ways of propagating the *Dictamnus*—the one from seed, and the other by division of the crown or roots; and if the latter method is chosen the best time for doing it is

in spring, just as the plants are starting to grow, when a portion may be sliced off by using a sharp-edged spade or trowel; or the plant may be taken bodily up, and the early fleshy roots cut into lengths and then placed in sharp sandy soil under a hand-glass. If seed be sown, that may be treated in the same way as regards soil and shelter, and is best put into the ground as soon as ripe, as then it germinates without loss of time.

PLEUROMA MACRANTHUM VAR. FLORIBUNDA.

When this plant is grown in a pot, it makes a fairly good specimen, and flowers freely, but gives but a very imperfect idea of what it is capable of when planted out, where, if given a good root-run, it will quickly grow into a large specimen, producing its purplish-blue flowers, more or less, for six months of the year, which under those conditions are of great substance, and differ from the prevailing colours of conservatory plants. A position affording plenty of light is to be preferred, yet it need not be where the direct sunshine falls; indeed, plenty of light without being fully exposed to the sun seems to answer best. In such a position, about two years ago, I put out a small specimen, which has now grown into a nice plant about 7 feet high, and of proportionate width, which has been flowering freely for a long time; many of the flowers are nearly 7 inches across. It is planted in the usual mixture of peat and loam, with enough coarse sand to give free outlet for the water, but I do not think the plant is very particular as to soil. Almost anything that is friable in its nature will do. It is not well to give an excess of water at the root; therefore, a compost which can be maintained steadily moist is best. The plants may have a periodical washing with the hose or garden engine, to cleanse the foliage, but daily syringing should be avoided, as this seems to injure the leaves. It is easily increased from cuttings in the usual way in a mild propagating-pit, taking care not to let them either shrivel or damp off. Besides our plant, I remember seeing one planted out in the Botanic Gardens at Glasgow, where it was doing grandly. From what has been said it will be seen that this is eminently suited for planting out in winter gardens or conservatories, as independently of its beauty when flowering, it is evergreen, having distinct characteristic foliage of an ornamental type. *F. Ross.*

NEW OR NOTEWORTHY PLANTS.

PASSIFLORA MIERSII* (Fig. 46.)

We are indebted to the courtesy of Professor Maxime Cornu, the Director of the Jardin des Plantes, for a specimen of this pretty little Brazilian Passion-flower. We first met with it among the collections of the late Mr. Miers, to whom we dedicated the species; but we have not previously seen living examples. The arrangement of the coronal threads differs slightly from that shown in the analysis in the *Flora Brasiliensis*, but in spite of this minor discrepancy there can be no doubt as to the specific identity of Professor Cornu's plant. Referring the botanical reader to the description in the work cited, it may suffice here to say that the species is an elegant one, with slender wiry stems, and very free-flowering, the leaves (of which one is shown in the figure) claret-coloured on the under surface; flowers white, flushed with pink; the outer coronal threads whitish, barred with purple at the base; the inner threads violet or deep purple. The ovary is oblong-obovate, glaucous, green, and marked with ten longitudinal yellowish lines. *M. T. M.*

ODONTOGLOSSUM MACULATUM DUVIVIERIANUM, n. var.

This appeared among numerous specimens of *Odontoglossum maculatum*. It has lemon-coloured sepals and petals, all spotted with brown, and a

whitish-yellow lip, spotted with same reddish-brown, which has a very light hue of sepia. The callus and bracts, and shape of the lip, prove it to be *O. maculatum*, not *O. cordatum*, though the sepals and petals are rather long. I had a fine inflorescence, with six quite fresh large flowers, kindly sent me by M. L. De Smet-Duvivier, Mont St. Amand-lez-Gand. It is a beauty. *H. G. Rehb.f.*

ONCIDIUM ROBUSTISSIMUM, n. sp.*

This is an uncommonly intricate, critical species. It belongs to the group of the *Pulvinata*, including *O. divaricatum*, *pulvinatum*; and *sphegiferum*. It is, however, quite distinct at first sight in its strong, straight rhachis, the side branches of which are not zigzag at all, but straight, too. The flowers are larger, and the lip has the anterior part of the blade broad as the lateral ones. The sepals and petals are yellow at the top, brown at the inferior part. The lip has the rounded serrate lateral lacinia, as well as the anterior emarginate one, with broad cinnamon-coloured stripes, transverse in the anterior, parallel or oblique to the outside in the lateral ones. The transverse wings of the column are striped with numerous light brown stripes, which are easily overlooked. Bulb strong, short, elliptic, aciculate. Leaf of the neighbours [allied species?] much keeled outside under the mid-line. It was imported from Brazil, and kindly sent to me by Mr. F. Horsman, Hollybrook, Colchester. *H. G. Rehb.f.*

THE GUM CISTUS.

SEVERAL kinds of Gum Cistus are very ornamental in warm and sunny gardens during the months of June and July. The worst of them is that none of them are very hardy, and the flowers are very short lived, lasting only a few hours, and are therefore useless for cutting. On the other hand, the plants are easily reproduced from cuttings, and easily preserved by a slight protection in winter, also most of them flower very freely, even when the shrubs are very small—not more than a year old.

Clusius, whose information was collected nearly three centuries ago, accurately describes many kinds of Cistus, from which Parkinson selects only three "as fit for this our garden," translating almost literally the description of Clusius. They are, first, *Cistus mas*, our *C. villosus*, identified by Sibthorp with the male Cistus of Dioscorides, and of Theophrastus, who spells the name *Cisthus*; secondly, *C. fœmina*, our *C. salviaefolius*, the female Cistus of the same authors; and, thirdly, *C. ledon*, our *ladaniferus*. Of more recent authorities for the genus Cistus, Sweet published in 1825 a monograph of the Cistineæ, in which fifty-two species or varieties of Cistus then in cultivation are figured in colours and described. This work has been superseded by a more complete monograph in Willkomm's *Icones* (Leipsic, 1856), in which all Sweet's figures are reviewed.

Several of the best Cistuses now in cultivation, as well as some of those figured by Sweet, are known to be, or suspected to be, hybrids of cultivation. Here are a few of the most desirable kinds:—The largest of all is *Cistus ladaniferus*, the old Gum Cistus; the *Ledon angustifolius* of Clusius, a native of Spain and Portugal and South-eastern France. Clusius tells us that he has ridden for twenty miles in a line through thickets of this bush on the slopes of the Sierra Morena, and that it supplies the inhabitants of those parts with most of their faggot wood. He also observed the variety with pure white unspotted flowers, which we still have in cultivation. *C. cypricus* seems now commoner in English gardens than the last mentioned, being figured under the name of *C. ladaniferus* in *Bot. Mag.*, t. 112, the most obvious distinction being that *C. cypricus* bears

* *Oncidium robustissimum*, n. sp.—Aff. *Oncidium divaricatum*, Lindl.; ramis ramulisque fortibus rectis, sepalis tepalisque cuneato-oblongis acutis; labelli lacinia lateralibus semi-ovatis serratis, lacinia antica cuneato-dilatata elliptica emarginata, lacinia lateralibus æquilatis, callo piloso in basi; columnæ albis transversis oblongis. Ex Brasilia imp. et mis. ex Horsman, Colchester. *H. G. Rehb.f.*

* *Passiflora Miersii*, Masters, in *Flora Brasiliensis*, vol. xii., part 1, p. 599, *Passifloreæ* spec., n. 42.

several flowers in a cyme, the flowers of the other species being always solitary. It is thought to be the *Ledon cyprium* of Clusius, though it must be noticed that in his otherwise accurate description he omits to mention the purple spot on the petals, which he says are white. He tells us that he received seeds of the plant under the name which he gives it from Italy, and that he and others raised plants of it for their gardens in Belgium, where it has probably been in cultivation ever since as a supposed Cyprian plant. Its native country seems never to have been questioned, but E. Boissier, our best informant about the plants of the Levant, failed to find it wild either in Cyprus or anywhere else, so that its history is somewhat uncertain. Lamarck's *Encyclopædia*, published in 1786, is accepted as the modern authority for the name. Another beautiful *Cistus*, *C. purpureus*, referred to the same authority, has a still more obscure history, for its native country is not even mentioned. Willkomm says it is "probably a native of the East," and Boissier observes that, as it never bears even a seed capsule, it may be a hybrid. He never saw even a pretended wild specimen of it. Though not a free flowerer, its habit is good, and it should be in every collection. A rather new *Cistus* is sold as *C. lusitanicus*. No authority for the name is given, and I cannot trace it beyond Backhouse's nursery, but I consider it decidedly the best *Cistus* in cultivation. The flowers resemble those of *C. ladaniferus*, being nearly as large, with smaller spots, and are borne in great profusion on a very dwarf and hardy shrub.

Of the white flowered kinds the hardiest is *C. salviaefolius*, which forms large bushes everywhere in the neighbourhood of Biarritz, and has a very wide natural range. *C. hirsutus* is also very profuse of its flowers, which it produces on very dwarf shrubs. It is often wrongly called *C. Florentinus*, a hybrid kind, which has much smaller flowers, few in number, and in my garden is not worth the room it takes. *C. laurifolius* has large flowers, and is hardy, but its leaves and habit are coarse and untidy. *C. corbariensis* quite covers the bush with its flowers but for a very short period.

Of the pink-flowered kinds *C. crispus* is easily grown; its flowers are vivid in colour, and are produced for long. Of the varieties of *C. villosus* (which is called by Willkomm *C. polymorphus*), *C. creticus*, which that author makes a distinct species, is perhaps the best.

Ladanum.—The following notes have been compiled from writers of widely different dates concerning ladanum, the resin, or gum, of the *Cistus*, which was made into an important aromatic drug in ancient and medieval times. It is first mentioned by Herodotus amongst the products of Arabia. He says that ladanum, which the Arabians call "ladanum," was collected from the beards of goats, to which it adhered like glue from the shrubs on which they grazed, and that it was very much used by the Arabians for incense. Dioscorides repeats this statement; and Pliny, besides telling us about the goats' beards, gives other particulars. He says the best ladanum came from the North-west of Arabia, but that a good quality was made in Cyprus, where it was collected by sweeping the bushes with a rope held at both ends, to which the resin adhered. The price of the finest kind was about half-a-crown a pound (xl assas), which seems surprisingly low, considering the labour of collecting, and the great value of some of the costly *navos*; but numeral letters are especially liable to be mistaken. Pliny also tells us that the drug was much adulterated, and that the genuine might be recognised by its wild smell, being "redolent of a desert;" also by its containing bits of rock, and not dust, which was often added. He also says that the gum adhered to the beards of the goats whilst browsing on Ivy (*Hedera*), evidently confusing the Greek word "Kissos" (Ivy) with "Kistos" (the *Cistus*). In medieval times we find the scene of the collection of ladanum changed to Crete. Clusius gives some extracts from the travels of Peter Belon, who visited Crete about half a century before his time. Belon saw ladanum being

collected on the mountains by raking the bushes with an *ergastèri*—i.e., a "working tool"—a kind of rake with leathern teeth. [A specimen was exhibited some years since at the Linnean Society, and which is now in the Kew Museum.] The labour of collecting, which had to be endured in the hottest sunshine, was too great for any one except the Greek monks. This ladanum, Clusius says, was imported to Spain through Africa, much adulterated, though the Spaniards, as he suggests, might collect it in abundance for themselves from their endless thickets of *Cistus*. Dodoens, in his *Herbal*, where he speaks of the virtues of ladanum, cites the same authority of Belon about its collection. He adds that it was called in the shops in his time "labadanum," per-

stated in botanical works that it is collected in Crete from *C. creticus*, a kind closely allied to *C. villosus*, if not a variety of it. The two species which have the widest range on continental Asia are *C. villosus* and *C. salviaefolius*. In our English gardens these are amongst the least gummy and fragrant of the whole genus; but in the hot climate of the Levant the resinous secretions are far more abundant. Still Clusius was right in saying that more and better ladanum might easily have been collected in Spain than in Crete, and the name ladaniferus may have been applied by Linnaeus to a large *Cistus* of Spain, not because it was supposed to be the source of the drug of commerce, but from the large quantity of ladanum which exudes from its surface. *C. Wollg. Dod, Edge Hall, Malpas.*



FIG. 46. — *PASSIFLORA MURCHII*: WARM GREENHOUSE CLIMBER: LEAVES PURPLE; INFLORESCENCE: FLOWERS WHITE, FLUSHED WITH PINK; CORONA PURPLE.

haps to prevent its being mistaken for laudanum—a confusion, and which even the accurate Clusius was not exempt from making. Tournefort, who visited Crete about the year 1700, describes the same mode of gathering ladanum as was witnessed a hundred and fifty years earlier by Belon. In more recent times the excessive adulteration practised has brought the drug into disrepute, and it is no longer imported into Western Europe, though still in use in Turkey.

As regards the particular species of *Cistus* from which ladanum was collected, it is probable that more than one kind furnished it. It is generally

ORCHID NOTES AND GLEANINGS.

LISSOCILUS GIGANTEUS.

THIS Orchid, towering above its fellows, merits more than common notice. Professor Reichenbach (see *Gardeners' Chronicle*, ante p. 616) gives a very full diagnosis, with interesting details of the plant that flowered in Sir Trevor Lawrence's collection (see fig. 83, p. 649, May 19 last)—a plant, by the way, with which he had formed an acquaintance before the time of flowering in one of his visits to our country. Probably I might be allowed to supplement that excellent description by giving details of, without doubt, the most wonderful plant in this country, splendidly grown, as reported by Mr. Robert Todd in your last issue, and exhibited at the great show held at Glasgow under the auspices of the International Exhibition.

In looking at the plant as it stood in the Grand Hall confronting the improvised throne upon which the Queen sat only a few weeks previously, and which still remains as one of the sights of the Exhibition, it was a giant amongst its flowering fellows. It certainly did not reach the 16 feet altitude which our learned Professor takes as the observation of collectors on the spot, but it much over-reached the Burford Lodge specimen. I measured its spike, and found it to be 7½ feet long, bearing from beginning to end twenty-six flowers.

The plant itself is terrestrial Phaius-like in its character, with the ripened stools level with the fleshy roots, and with the soil in which the plant was growing. Some old fellow, without much Orchid knowledge, declared it to be a *Curculigo*, and its linear-lanceolate leaves, although much taller, give somewhat of a colour to the suggestion, but in diagnosing it we find it to be more Phaius-like, with a prominent keel down the centre of the leaf, and from three to four subsidiary keels in the division. In fact it looks more like *Sparganium racemosum*, being entire at the edges, and of a pale green hue. The matured leaves are fully 6 feet long, amplexicaul at the base, and from 2 feet upwards, as we have said, linear lanceolate. The flower peduncle resembles that of *Zygopetalum Mackayi*, being quite glabrous and round as a Sugar-cane, with internodes 12 to 18 inches apart, more like bracts, as well described by Professor Reichenbach, only the plant in question throws up its peduncle half as tall again as does Sir Trevor's plant.

The flower differs from that in the described example at p. 616 in being almost concoloured. It is exceedingly striking, however, and is as ornamental as any novelty in recent times. It is not unlike the colour of a *Phalænopsis Schilleriana*, but it is far more interesting. Its sepals are inconspicuous, 1 by ¾ inch, spatulate, and carelessly reflexed. Petals very prominent, 1½ by ¾ inch, obovate. Labellum very conspicuous, sandal-like in formation, with a labiate extremity gathered up in the centre like a well-made sandal, with a bright orange blotch at the base of the column, with three linear lines of a russet hue, as it were, pencilled out in parallel lines from base to extremity. The column itself is arching and all but linear, with

conspicuous pollen masses confronting the onlooker. This particular variety is nearly all lilac; if the colour is high-toned at all it is at the back of the sepals, which verge into rose colour. The plant has been in Mr. Bullen's possession for about eighteen months, was introduced from the river Benue, about the Congo district, by Mr. Henderson, one of our Glasgow merchants, is in the height of vigour in an 11-inch pot, and, of course, is much prized. It is the only one introduced alive at the same time as was Mr. Linden's, and has been well cared for by an excellent orchidist, for these unique specimens we owe to the skill of Mr. Bullen. B.

ZYGOPETALUM BRACHYPETALUM, Lindl.

Zygopetalum brachypetalum was described by Lindley in 1844 (*Bot. Reg.*, xxx., *Misc.*, p. 9), from a specimen received from Mr. Waterhouse, of Halifax, in 1840. The flowers were described as most like those of *Z. intermedium*, but less than half the size, the sepals and petals very much more brown than green, in consequence of the blotches running together, and the lip covered with blue veins and spots. The type specimen and a coloured drawing of a single flower is preserved in the Lindley Herbarium at Kew. In the Orchid-house at Kew at the present time is a similar plant, the leaves 18 inches long, by only 6 to 7 lines wide, the flowers 2½ inches in diameter, the sepals and petals similar, and the lip even more suffused with blue than in Lindley's sketch. It is a very handsome plant, and although the flowers are a shade larger than Lindley's plant, I believe both represent the same species. The lip is not hairy as in *Z. intermedium*, and I should describe it as nearest to *Z. Mackayi*. The differences between the two are not very great, and might possibly be found to break down if a large series of specimens were examined. The species, like its allies, is a native of Brazil. R. A. R.

CATASETUM RUSSELLIANUM, Hook.

This rare *Catasetum* was originally introduced from Guatemala, in 1838, by Mr. Skinner, and flowered in the collection of the Duke of Bedford at Woburn Abbey. From thence it was transmitted to Sir William Hooker, and by him figured and described at v. 3777 of the *Botanical Magazine*, under the above name. The plant has the general appearance of the genus, with swollen conical pseudobulbs, and broadly lanceolate leaves about a foot long. The flowers are large, and borne in a dense pendulous or arching raceme, and although the pallid whitish-green flowers have no striking colours to recommend them, yet their appearance is exceedingly graceful. The inflated or pouch-shaped base of the lip and fimbriated front lobe are peculiar characters, but the most remarkable feature of the plant is the total absence of tendrils or cirrhi on the column; and the remarkable way this is connected with the fertilisation of the flower I have been able to make out from a fine plant which has just flowered in the Kew collection. The part played by these tendrils in causing the forcible ejection of the pollen, when an insect visits the flower, has been pointed out by Darwin in the case of other species of *Catasetum*; but the singular feature of *C. Russellianum* is that its column is altogether without tendrils, and its pollen is not forcibly ejected, and yet the plant is as essentially a male Orchid only as any of the tendrilled species; for the ovary and stigma are not developed. As it is certain that the pollen has to be removed, and carried away to a flower of the other sex (at present apparently totally unknown), I was anxious to find out by what means this was accomplished. On introducing a pencil into the flower, in the same way as an insect must necessarily enter, I touched the gland-like base of the pollinium, which lies flat along the column, when it suddenly sprang backward from an elastic hinge at the junction of the stipes with the gland, the highly viscid under surface of the latter being now placed in so prominent a position that it would infallibly come in contact with the insect on its backing out of the flower, even if it did not become firmly glued to it in the very act of springing

backwards. The point, however, to be noticed is that the gland simply flies backwards, while the rest of the pollinium remains *in situ*. Four flowers were successively tried, and always with the same result, though on discovering the mechanism I found it possible to hold the pencil at such an angle that the gland, when touched, flew back on to the pencil, and became instantly attached to it—probably what takes place when an insect visits the flower. In the first trials the glands did not become attached to the pencil, perhaps because not held at the right angle, but it enabled me to be certain that the pollen is not forcibly ejected. *C. Bangerthii* being in flower in the same house, I examined it, and found one of the tendrils curved round close to the column, the others standing forward in the centre of the flower. The former proved quite functionless, as Darwin showed to be the case in *C. saccatum*, but on the other being touched the pollinium was jerked out of place, not, however, out of the flower, but on to the apex of the lip, as I have also seen to be the case in *C. luridum*. The phenomena of fertilisation in this singular genus are certainly most remarkable, and it is much to be hoped that the female plants of *C. Russellianum* and *C. Bangerthii* will ere long be forthcoming in some collection. R. A. Rolfe.

NURSERY NOTES.

MR. G. BUNYARD AT HOME.

WE meet with this estimable Kentish nurseryman so frequently everywhere—at exhibitions, conferences, and similar gatherings—where fruits especially are concerned, that it does seem like a singular experience to meet with him, if not upon his native heath, at least upon his limestone downs, whereon, although exposed to all the winds and storms of heaven, fruit trees seem to thrive as if exposure and lime were absolute essentials to health and robustness. The mist hangs thickly over Kentish hills and valleys as we glide through fields, gardens, pastures, orchards, and Hop plantations, and it is not until the train is close upon Barming station, just outside of Maidstone, that we are enabled to discern the wretched plight presented by the Hops, which here have not a flower upon them to gather. Close by are some fine Cherry orchards, which display rude health and luxuriance, and assuming the crop has been as Cherries have been elsewhere, then must these fruits have been as profitable as Hops are the reverse. And whilst ruminating upon the nature of such an interesting illustration of the value of fruit as a permanent crop as compared with Hops, the train runs into Barming station, and there stands Mr. Bunyard waiting our pleasure.

The Allington Nursery, which has now grown to be of great dimensions, and severely tests the pedestrian abilities of visitors, especially when the sun shines out hotly, is of a gigantic U-shape, one side of the letter abutting upon Barming station, from which there is immediate entrance to the nursery, whilst the other side is a mile away, out towards Maidstone, and from the base of the letter there is a grand look-out over the range of chalk hills, which, known as the back-bone of Kent, shut out the sea view. All the same, it is obvious that with no shelter nearer on the east side, the nursery must at times be swept by fierce cold winds, and perhaps the wonderful health and robustness of the stock owes some of that sturdiness to the ample exposure to which it is subjected, as also to the splendid cultivation given. From the Barming side the ground gradually ascends, and the slope is literally covered with wonderful breadths of Apples, Pears, Plums, and Cherries, making their second year's growth, and doing so admirably as to elicit the warmest commendation. Although we have had the weediest season for a decade, the ground is as clean as a new pin, thanks chiefly to the use between the tree rows of the light American horse-hoe, with its half-dozen cutters, which is in almost constant employment. To have the soil so clean amidst trees of two years' growth,

such a season as the passing one has been, is indeed a triumph of nursery cultivation. But then how well is that labour repaid by the splendid growth seen everywhere. Of course, the ample moisture of the present year has been helpful in that direction, but everywhere on maidens, or older trees, no matter on what kind of stock, there is the same grand growth—and hard woody, not pithy growth.

Perhaps better growth has never been seen than is now evident, and which the more recent warm weather is so assisting to mature. Now, one product of the excessive heat and drought of last year was the remarkable development of fruit-spurs in all directions upon maidens, so that myriads of Apples and Pears, but especially of the former, are fruiting wondrously, even though but in their second year's growth. To illustrate this feature, Mr. Bunyard draws our attention to a row of choice Crabs, an ordinary Crab stock, all in beautiful fruit, and showing how effective such kinds as the Mammoth, Transparent, Hyslop, The Fairy, John Downie, and the old rich-coloured Siberian, may be, when in fruit, even for decorative uses only, whilst the fruits must possess some considerable commercial value when properly preserved.

Possibly some day we may get a race of very delicious Apples from these Crabs, which shall be as hardy, and as beautiful. But the Apples grow in interest as one gets amongst them, and Ribston Pippin, for instance, exhibits such development for two years as makes one smile at the thought that it is an exhausted variety. Ringer is a kind not well known, but here fruiting with great precocity, and strongly recommended to take the place of Lord Suffield on poor soils, as it is hardy and robust. But Lord Suffield, once so famous, seems in danger of being deposed from his pride of place in other directions, as, for instance, we look at that grand Apple, Potts' Seedling, so fine and so good, and cropping here so wonderfully in these little trees. Mr. Bunyard is very sweet upon Pott's Seedling, although it enjoys hardly a euphonious designation, but in a nursery and with an honest fruitist, an Apple is an Apple for all that; and Potts' Seedling is one of the best. Lord Grosvenor is one of the Suffield competitors, of which Mr. Bunyard speaks in the highest terms, and indeed its wonderful cropping qualities and grand fruit speaks for itself. Still Lord Suffield is wonderfully good on tiny trees, especially on the English Paradise, the chief Allington dwarfing stock for Apples. Then Grenadier is another wonderful Apple of the same tribe—a noble-looking fruit, the little trees of which are laden with splendid specimens, and ample evidence is afforded that this is one of the coming culinary favourites, for it is as firm of flesh as it is free in cropping. Perhaps the premier Apple of the nursery just now in the matter of precocious fruiting is the new Bismarck, very little trees carrying from twelve to sixteen fine fruits, and presenting really fruit wonders. What a fortune might not be found in an acre or two of this superb Apple! The fruits are large, slightly conical, of a deep blood-red colour, carrying good bloom, and on the stem side resembling handsome Norfolk Beefings. It is an Australian introduction, and should rank amongst the most formidable competitors of the American sorts in a few years. Manx Codlin is also finely fruiting in this way, so is the handsome Duchess of Oldenburg, the well-known Cellini Pippin, Beauty of Kent, very fine, and Stirling Castle.

An Apple too seldom met with, Golden Spire, is another of the early culinary sorts which fruits finely, and its deep rich hue when ripe should make it sell well. A new Apple, Tyler's Hermit, presents the form of fine King of Pippins, allied to the quality and stoutness of habit of the Blenheim; and Mr. Bunyard forecasts for it a great future, as a beat upon the latter, as it is of fine flavour, fruits early, and is a robust tree. Small's Admirable, a fine hardy Hawthornden, is good, so also is Saltmarsh's Queen, literally a regal Apple; and Domino, a fine hardy kind, capital in shade, and a free cropper. This is specially commended for Northern culture. In the

matter of colour no Apple at present seems to excel Colonel Vaughan, small trees being here and there laden with blood-red fruits, although Worcester Pearmain runs it hard for colour and prolificacy; as does also the new and beautiful Lady Sudeley. A beautiful Apple, yet little known, is Okera, a Swedish variety, the fruits resembling the Dartmouth Crab, but much finer, and richer in colour. This is of good flavour and should make a popular dessert variety. So, too, Histon Favourite is another yet comparatively unknown kind, not unlike the Stirling Castle, but is a much better keeper. The new things in Apples found at Allington are so good generally as to indicate how needful it is to be cautious in assuming that old kinds are essentially the best. Mr. Bunyard is much pleased with Laxton's Schoolmaster, as a fine early free fruiting kind, and one which we may well wish to see very universally abroad. A collection of dwarf bush trees in pots plunged in litter in a sheltered place, all grandly fruiting, affords evidence of the way in which the finest samples may be obtained, especially if run in under glass to finish up. Of these Potts' Seedling, Golden Noble, Tippet's Incomparable, like to the Costard, but much finer, and deeper coloured; Cox's Orange Pippin, and many others, are in full fruit.

In the orchard-house a few trees of Emperor Alexander, in pots, carrying wonderful fruits, show what glass protection will do to enable Apples to finish.

But we must turn to some other fruits, for in the course of our perambulations, as an eminence is reached overlooking a wide area of trees, Mr. Bunyard with a wave of the hand, as though he were a general commanding his legions, points here to a big regiment of thousands of Victoria Plums, there to another of The Czar or Diamond, still further to a high quarter of Cherries, and anon to vast numbers of Pears or Apples, or perhaps to huge breadths of stocks mustered here, till we almost expect to see the whole army assume the movement of great Birnam Wood and proceed to active evolutions. Happily the illusion is soon dispelled because we are instantly hurried away to see such breadths of Peaches and Nectarines, Plums and Pears, and Apples too, trained as cordons or for walls and espaliers. The former trees are all fan-shaped, of course, and superbly wooded stuff; the latter are chiefly horizontal or single cordons, the horizontal trees showing from two to six tiers of branches, to suit anyone's pocket; indeed with half standards a Pear or Plum wall might be covered almost at once. In the orchard house a grand lot of standard Peaches show what may be done also for furnishing the tops of high walls, or rather high Peach-houses. Pears are not in such good fruiting form as Apples this year, but still many kinds have capital crops. Pitmaston Duchess, Beurré Clairgeau, the latter full of rich colour, are fruiting heavily. The trees, however, show no lack of vigour—even on the maiden breadths the growth is excellent. Large breadths of both Apples and Pears as maidens on Paradise and Quince, not only show grand growth, but really wonderful takes, and this excellence Mr. Bunyard attributes chiefly to the great care exercised in growing stocks, as well as in selecting them. The bulk of the stocks are raised at home, hence it is easy, especially in the case of the dwarfing stocks, to eliminate any which, prior to budding, may appear to be of an unsatisfactory character.

One little matter, apparently trifling, yet suddenly leads conversation into the realms of chemistry. Mr. Rivers' recently advocated an analysis of soils ere planting fruit trees. Mr. Bunyard pointed to a row of maiden Apples, adjoining a breadth of Plums, and invited us to remark upon their specially strong growth. "Now," he said, "I have found, wherever we have unwittingly planted a Pear stock amongst Apples, or an Apple stock amidst Pears, or where rogues have, as it were, dropped amongst honest rows—that the rogue always in such case grows stronger than would result if amidst his own fellows. "Why so?" we ask. And the reply is, "Without doubt each kind of fruit abstracts some diverse constituent from

the soil; and although most soils, if well cultivated, contain the needful constituents for all, yet when a single tree is planted amidst others, as in the cases mentioned, that one has a monopoly of those elements which it needs to promote growth, and is consequently all the stronger for that monopoly. Possibly the action of the more largely grown variety assists the single rogue in getting a good share of the needs of existence by thus causing other elements to become converted into vegetable fibre."

Of course, this fine nursery out on the Kentish hills is not entirely devoted to fruit culture; we are rather surprised to find Coniferae and Rhododendrons, Roses, and forest trees, alike thriving remarkably well. We may, however, only stop to notice that beautiful silvery-blue Conifer, *Abies nobilis glauca*, of which there are some handsome specimens, as one worthy of special regard; and the very pretty little dwarf *Spiraea Bumalda*, neat little bushes, covered with rosy-pink flowers, and not more than 12 inches in height—a real shrub gem. But just now, what with essays and conferences, speeches and meetings, the horticultural air is replete with talk about fruit culture, and as Mr. Bunyard is essentially a fruit cultivator for the million in the matter of trees, the subject of hardy fruits dominates everything else. Therefore, having had a peep into that delightfully cool, thatched fruit room, and secured a little very needful rest in the adjoining office, where the telephone puts us into communication with the shop in the town, 2 miles away, there is a temporary settling down to serious talk, and Mr. Bunyard meekly submits to be put through his paces on the subject which is just now uppermost.

The first query we put is as follows: What has been the general effect of the two seasons now passing on the fruit trees, so far as can be seen now; and did the drought of last year check growth appreciably? "The effect of the drought of 1887," replies Mr. Bunyard, "was to ripen up the wood unusually well, and the result is seen in many Apples bearing crops on maiden trees. Apples grew late also, and felt the drought less; but Pears and Plums felt it much more, the growth being considerably less than usual. With respect to the effects of the passing season the great moisture has induced wonderfully fine growth, but because of the hard ripened nature of the maiden wood, or that of last year, the growth of this season is firmer than might have been anticipated. Cold nights and drier weather now are also checking it, and I anticipate that by leaf-fall it will be very firm and ripe." The next query is: At what particular period of the year do you most favour the transplanting of trees to orchards and gardens? "November is naturally the best month for the purpose, but if the winter be fairly open transplanting may go on with perfect safety up till March, provided the land has been duly prepared, and it be not too wet. Young trees well set with fruit-buds should, however, always be planted early in the winter, for it is not generally known that even during the winter considerable root-action takes place." Then we ask, Having regard to your wide knowledge of fruits, not only in your own nurseries, but also over a large portion of Kent, can you suggest any newer or less known varieties of Apples, Pears, and Plums, specially for garden culture, and secondly of market orchard culture?

Mr. Bunyard, whose knowledge of fruits seems to be illimitable—for he has the sorts literally at the tip of his tongue—favours us with a good list of Cherries; for is he not in the midst of a grand Cherry district, also of bush fruits, and specially enjoins the planting, both to crop and provide shelter, that wonderful Damson, Farleigh Prolific; whilst the Frogmore Damson is warmly recommended as a fine cropper. Just one other question, and we have done. Have you found any special good qualities amongst the newer sorts of fruits? "Yes," was the reply, "I strongly commend of new dessert Apples Cooling's Beauty of Bath, Lady Sudeley, Wealthy, Tyler's Kernel, Baumann's Brunette, and Howard's Pearmain; and of culinary Apples Bismarck, Graham's Royal Jubilee (very distinct in growth as we saw), Belle Pontoise, Lady Hamilton, Newtown

Wonder, Sandringham, and Schoolmaster. Of Pears good new kinds are Belle Potanges, Beurré Balthé, Madame Leroy, and Aspasie Aucourt. Of Plums Grand Duke, Monarch, and Late Transparent Gage; whilst of Cherries I think much of Emperor Francis."

And now, being rested, and the train nearly due Mr. Bunyard kindly escorts us by yet another path back to the station, and we take leave of the nursery and its estimable proprietor very much the wiser for our all too short visit.

URSINIA PULCHRA.

THIS is a very pretty annual, better known, perhaps, under the name of *Sphenogyne speciosa*. Its dwarf habit (stems 12–18 inches), elegantly cut foliage, and creamy-yellow flower-heads, like those of a single *Chrysanthemum*, which are produced in profusion and in long succession, render it a very desirable plant. It is probably a native of South Africa. Our illustration (fig. 47) was taken by Mr. Weathers from a plant which has formed a conspicuous ornament on the rockery at Kew during the whole summer.

THE APIARY.

THE OUTLOOK.

THE outlook for the future is not very encouraging except to bee-keepers who have been feeding vigorously. Syrup-feeding ought to end with September. Should October be warm, and the bees deficient in food, they may perhaps have a little syrup given them for the first few days. After syrup-feeding is done, get some American cloth, and cut it into pieces to fit the hive. Then put two or three pieces of felt, or carpet, over this. I am going to take additional precautions this time by cutting a hole in the American cloth, and putting a basin of dry sugar over each stock of bees. This will, no doubt, be of use to them. Once before I mentioned the Sussex plan of putting a few pounds of brandy-balls on the top of the hives before closing up for winter. This plan is doubtless very good, but we prefer the dry sugar. Sometimes I have not used a basin for the sugar, but laid it all over, and pressed it down. This is recommended by Mr. Simmins, of Rottingdean, and all will acknowledge him to be an authority. We prefer the basin for several reasons; first, the dome-shape seems better for the bees, and when the sugar is partly eaten, the warmest part of the hive is that where the sugar is. It is easier to pack the sugar in a basin, and by tapping it you can discover when it is empty by the ringing sound. We omitted to say that the glazed side of the American cloth ought to be downwards.

All these things ought to be done by the first week in October. Keep the entrances still nearly closed, and leave them so till all danger of robbing is at an end; then open them to their full width. This will cause a current of air to circulate about the entrance, and help to keep the hive dry. Bees oftener die of damp than cold. As a proof that we have not dwelt too much on the feeding, it may be observed that many stocks are already dead; many, indeed, are not even taking the trouble to kill their bees this year, knowing that they have no honey to take, and that they will surely die. It is, however, very foolish too allow bees to die, or to kill them; it is much better policy, not to say more humane, to unite those that have no honey with those that have. This will make strong stocks, which will be ready to swarm early, or else to give the bee-keeper heavy supers. *Be.*

VEGETABLE PATHOLOGY.—A special laboratory has, says the *Revue Horticole*, been established in connection with the National Agronomic Institute of France, for the purpose of investigating the diseases of plants, and of devising means to combat their evil effects. M. Prilleux has been appointed Director of the Institute.

FORESTRY.

PLANTING TREES, &c.—Where planting operations are in view, great care should be exercised in choosing such trees as are suited to the soil and situation, and as profitable trees to plant on light, poor, hilly land, nothing excels the Larch or Corsican Pine amongst Firs, and for deciduous species the Sycamore, Birch and Beech, and a host of others. Should the situation be much exposed to the wind, a belt should be planted of the Austrian and Scotch Pine, *Pinus Pinaster*, Sycamore, Crab, common Poplar, *Ulmus alata*, and any of the Maples. The thinner and poorer the land the better does the Corsican Pine seem to thrive; and where the Larch has died out prematurely on gravelly soils by becoming "pumped," there the accommodating Corsican produces a greater quantity of timber in a given time than it would on the best and richest of loam.

When planted on hilly declivities the Larch does best, and is free from disease, particularly if the aspect be west or north-west. For marshy ground the Alder and Willow, as well as several kinds of Poplar, succeed admirably, and soon impart a clothed appearance to the landscape.

On limestone and chalky soils, *Abies cephalonica* and *A. Pinsapo*, the common Yew, *Wellingtonia*, Austrian and Weymouth Pines, *Pinus austriaca*, and *P. Strobus*, make good timber and close shelter. Then for hardwoods we have the Beech, Spanish Chestnut, Sycamore, Maple, and Elm, amongst timber trees; and the *Pyrus*, Dogwood, Elder, *Viburnum Opulus* and *V. lantana*, amongst smaller growing or underwood shrubby species.

Where the soil is of a deep rich loamy nature, and resting on clay or gravel, the Oak and Ash may be planted, and with every chance of their succeeding well, and yielding a large quantity of timber. Amongst copses, and in thin soils and undulating grounds, the Sweet Chestnut, Hazel, and Ash may form the main crop, the latter occupying the deeper and better soils, where it will ultimately attain to fair proportions, and become a valuable market commodity.

Planting on Peat Soil.—On peaty soils few, indeed, are the trees that refuse to grow and give a very satisfactory return for expenses incurred. Rank peat bog must, however, have the water drained off by ditching before planting is begun, or the results will not be very satisfactory. The Scotch Fir, when planted in quantity, acts as a powerful absorber of moisture, and for this purpose it has been largely used in the province of Ulster for bog planting. I know well of several woods not very far distant from the shores of Lough Neagh planted fully twenty years ago on unreclaimed peat bog, and that are now doing splendidly. The tract of bog at the time of being laid down to woodland was simply divested of all heather by burning, and afterwards wide and deep drains were cut, but only along the margin and through the dampest portions of the ground. Scotch Fir formed the main portion of the crop, and these were planted in pits that had been dug out three months previous to planting. For some years after planting, the ditches were half-full of water, but as the Firs grew in size the amount discharged became less and less until the drains were, practically speaking, useless for the purpose intended, and are now as dry as any other portion of the woodland. That the Scotch Fir acts as an absorber of moisture—more so than perhaps any other tree—is fully verified by a remarkable experiment conducted on the Continent some years ago.

Seaside Trees.—For planting along the sea coast we have an excellent collection of trees and shrubs, including such tried subjects as the Cluster Pine (*Pinus Pinaster*), the Austrian (*P. austriaca*), the Aleppo and Corsican (*P. halepensis* and *P. Laricio*), *Cupressus macrocarpa*, *Thuia gigantea*, the common Yew, Scotch Fir, and many others among the coniferous section. Then amongst hardwoods the Willow, Elm, Sycamore, Alder, Poplar, and Elder rank high, the latter thriving with luxuriance down to the very beach. Amongst shrubs the *Laurustinus*, Box, Thorn, Tea tree (*Lycium barbarum*) *Escallonia*s, *Pyruses* of many kinds; *Euonymus*, various species; *Tamarisk*, and *Privet* are only a few of the many that may be planted with the certainty of their doing well. As town trees, *Platanus orientalis acerifolia*, Sycamores (particularly the variegated kinds), the Lime, Ailanthus, Thorns, Sumach, Aucuba, *Privet*, Lilacs, *Pyracantha*, and *Euonymus* are all good subjects.

Form of Woods.—Before passing from the subject

we will briefly consider what is strictly landscape planting, as well as a few of the coniferous and other trees that have been found best suited for the ornamentation of our parks and grounds. In forming new plantations, clumps, or masses of

out of the square or rounded fashion that, unfortunately, one so often sees in a day's walk over almost any part of the country.

A wood, particularly that in which deciduous trees form the main crop, may be enlivened by the plant-



FIG. 47.—*URSINIA PULCHRA*, ANNUAL (SEE P. 355).

trees, an eye to the beautiful should always be considered a matter of paramount importance, and more particularly so as no extra expense, practically speaking, is required to render a woodland picturesque, more than would be occasioned to plan it

ing of choice Conifers and deciduous trees with fine foliage and noble port around the margins.

Mass planting is here, perhaps, the best mode to pursue, and many of our hardiest Pines and Cypresses are the trees best suited for such a work. The

Austrian Pine is excellent for the purpose. Moreover, it succeeds anywhere, is readily transplanted, and is of very rapid growth. At a convenient distance from the Austrian we may well introduce a clump of the Weymouth Pine, the contrast of the foliage of these two species being pleasing and distinct; but do not make the clumps of equal size nor of the same outline, else formality and sameness will characterise the work.

Lawson's Cypress and *Juniperus virginiana* make good group or margin trees, and if a bit of greenery is wanted in our deciduous winter landscape we have only to introduce throughout the woodland generally a few masses of such shade-loving subjects as the Yew, Holly, and evergreen Oak. The many varieties of American Oaks and Maples are beautiful in the autumn when their foliage is maturing, and most of them are trees of massive proportions.

Garden Planting.—In conclusion, one word about how to plant will at least be of use to the amateur. The first step towards success in tree and shrub planting is thorough preparation of the ground; the second, a right choice of trees for particular situations; and the third, using good, well-rooted plants, and planting in a right and common-sense way. Where a tree is to be planted, dig out a pit larger than the spread of the roots by nearly a couple of feet; well loosen up the sides and bottom with a pick, and substitute fresh and suitable soil for that dug out, if such be found necessary. Now this may seem somewhat expensive, but for valuable trees, such as specimen Conifers, &c., it is well expended, the results obtained compensating in a tenfold degree for the labour and cost of proper planting. Leaf-mould, if thoroughly decomposed, is a valuable adjunct to any soil, and may be employed to the extent of one quarter of the whole bulk of new or old soil put about the roots of trees and shrubs of all kinds. Do not plant too deeply, and spread out the roots as much as possible. *A. D. Webster, Holwood Park, Kent.*

PLANTS AND THEIR CULTURE.

SHADING.—This should now be reduced to the least quantity, and, where the blinds are movable, there will be no difficulty in doing this; and except in the case of very soft-leaved plants growing in a high temperature, it should not be wanted any longer. Still, if it be left on the houses for a little while longer, it could be let down for a short time in the middle of the day if found necessary to do so. Fixed shading on the glass must now be washed off, as all plants, especially tropical plants, will require all the light possible to mature their growth; and it should not be forgotten that to secure well-ripened growth on these latter plants, a high temperature must be kept up. Sometimes when we arrest growth by lowering the temperature we are apt to believe that that is equal to natural ripening of the wood, but there is much difference between this and proper maturation. What we want is to consolidate growth, which can only be done under the influence of light, and a suitable temperature. This ripening process is assisted when a drier atmosphere is maintained in the house; a moderate amount of air being given when the nature of the plants admits of it, but taking care not to subject *Marantas*, some soft-leaved *Anthuriums*, *Dieffenbachias*, or *Cyanophyllums*, to it; at least, considerable discretion should be used, otherwise the leaves are apt to take on a singed appearance at the edges; but hard-wooded subjects, whether of the flowering or foliage sections, withstand the vicissitudes of winter much better, if matured in plenty of heat, light, and air. Thin out all weak and superfluous shoots in the case of evergreen species if now out of flower; deciduous ones may be stood in the drier parts of the house or removed. But whatever means are employed, the object should be to secure well-ripened growth that will produce strong shoots and plenty of flowers and foliage, as the case may be, in the spring. With greenhouse subjects, it is practically the same, but in their case there is a well-marked difference between the summer and winter temperature common to the temperate zones.

Housing of Plants.—Although we have been enjoying almost summer weather recently, yet the nights are getting long, when frost may occur at any time. Therefore all plants at present outside and which are likely to be injured by it, should be housed or otherwise protected forthwith; but if space is not at

liberty some of the hardier things might, with some kind of protection, be left outside a little longer. The ordinary now disused greenhouse shading will be, in the case of many plants, sufficient covering to ward off slight frost from *Camellias*, *Indian* and other *Azaleas*, *Cytisus*, many species of *Acacias* and *Rhododendrons*, of course taking care to protect the roots from excessive moisture, or cold winds, else they are apt to decay. Indeed, protection to the roots is quite as important as for the foliage, for if the roots are comfortable they will withstand a great degree of cold; and such things as *Indian Azaleas* and *Camellias*, if their roots are in proper condition, are all but hardy in this country. We have seen them growing in the open borders in the neighbourhood of Glasgow, and also in Sussex, where they frequently flower well. If those who have *Azaleas* infested with red spider or thrips would let them get a few degrees of frost, it would much assist to clean them. However, all tender Cape and Australian plants should be housed as early as possible, at the same time giving them a thorough cleansing, both pots and plants, as well as the house which is to receive them; and in staging them while keeping an eye to effect, try to allot to each a suitable position, keeping the weakly growers well up to the light, even if it does slightly mar the general effect. In all cases give plenty of air after housing, as if kept close they would probably make fresh growth, which is not desirable for some time yet, that is, speaking generally. *F. Ross, Bletchingley.*

FRUITS UNDER GLASS.

MELONS.—Great care must be taken in watering Melons and especially when they are on the verge of colouring, or splitting will occur. To obviate the necessity of watering place a good mulch of spent hotbed or Mushroom-bed manure over the roots. In order to impart good flavour to Melons at this part of the year a strong dry warmth must be kept up. When they are colouring take advantage of every glint of sunshine to ventilate freely. Plants swelling their fruit must suffer no check and the syringe must be dispensed with, guarding especially against moisture lodging on the stems, or canker may soon put in an appearance. Let the night temperature be kept as near 75° at 10 p.m. as possible.

Cucumbers.—Plants raised from seed about the middle of the last month will now be considerably advanced in growth and will need a medium amount of moisture in the atmosphere and to be ventilated at all suitable times so that a stocky growth may result. Pinch the shoots freely and pick off the male blossoms and all shows of fruit until it is really necessary to let the plants fruit, and crop afterwards with moderation. When the roots appear on the surface afford a dressing of light rich compost of the depth of 1½ inch—the plants being kept in better health by this means than by being allowed to run deeply into a bed of heavy loam. A warmth of 70° to 75° will be high enough at 10 p.m. A successional sowing may be made at once, but unless the autumn should be very favourable it will not be of much value.

Old plants of Cucumbers must be watered twice a week with some weak manure-water, and all the old injured leaves cut off, but do not do this too closely, rather nip off the leaves, leaving the footstalks. Induce as much young growth as possible before the dull weather sets in, and if the plants should be infested with spider, thrips, or greenfly, fumigate with tobacco and syringe with weak petroleum—one or two applications will be found effectual. When petroleum is used on the rough surface of a leaf of a Cucumber or a Melon it is well to syringe with clean water an hour afterwards, the inequalities of the leaf making it likely that some of the petroleum may be retained on it to the injury of the leaf. Cucumber plants in frames must have the dung linings freshened up with new materials, and mats employed to procure the necessary temperature. Strawberries will now have well filled their pots with roots if all has gone well, and where these have been grown on ground trellises they will have had the advantage this season; the soil in the pots being considerably warmer than that in the pots standing on the bare ground, where, with the best possible drainage, they were at times completely waterlogged. Pinch off all the runners as they appear, and give weak manure-water at every other watering. *W. M. Baillie, Luton Hoo.*

THE KITCHEN GARDEN.

OUTDOOR MUSHROOM BEDS.—This is the best time for making these beds; they should be put up in dry weather in a position sheltered from the east and north-east winds, and they will do very well if placed among standard Apples trees, or similar place, provided the trees do not immediately overhang the beds, the drip from them being detrimental to Mushroom growing. The materials should be prepared in the same way as advised for beds indoors, with this exception, that as these outside beds contain a greater bulk of manure, more care must be taken to prevent overheating when made, and if this occur failure is certain, the ammonia which should support the growth of the Mushrooms getting dissipated before the bed can be spawned, the bed gets dry in the middle, and it is soon too cold. The manure being ready take out a trench 4 feet wide, and one spit deep; shovel the soil from the bottom, and make level. Place the soil 3 or 4 feet back from the edge of the trench; the bed when completed should be cone-shaped, 4 feet wide at the base, and 4 feet high, and should be put up in sections of not more than 10 feet at a time, spreading a layer of the manure along the whole length of the trench to this distance, and laying it down as firm as possible, then another layer on top of that, treading it well down as the work proceeds, and drawing in the sides to the required slope; in order to get this right it is best to place a stake at each corner, and one at each end of the bed, to show the height of the ridge. When the bed is of the required size the sides should be dressed off smoothly with a fork, and the whole left firm and solid. If showery weather ensue it will be necessary to protect the bed with tarpaulins or Eddy's dressed canvas (I have found the latter most useful for the purpose), at the same time give as much ventilation as possible in order to prevent overheating. As soon as the heat of the bed declines to 85° the bed should be spawned, inserting pieces about the size of a hen's egg just under the surface, at six inches apart, making all firm again with a spade (new spawn should always be used in preference to that which has got very hard and dry), soil should then be placed over the surface of the beds to the thickness of an inch when beaten down. In many instances the soil taken out of the trench will do for this purpose, if freed from the largest stones and broken down well with the spade. The bed should then have a slight covering of the long litter that was shaken out when preparing the manure, in order to keep the surface from getting dry, and should also be protected from rain as before advised. When there is no more danger of its getting too hot it should be at once covered over with Barley straw, drawn straight and placed carefully so as to exclude the winter rains; this covering should vary in thickness according to the weather, from 6 to 9 inches being necessary at times, and during very sharp frost and heavy falls of snow the tarpaulins may be put on over the straw, the object being to preserve the heat of the beds as long as possible and not to let the temperature in the soil of the bed rise much above 60°. Early in December the beds should be examined to see if any Mushrooms are ready and to place a little fresh litter on the surface, always choosing a mild sunny day for this purpose, and covering up the bed again as quickly as possible to prevent the lowering of its warmth. This operation will need to be repeated occasionally whenever the litter on the surface of the bed has become wet and decayed. In April and May the beds may require to be watered with lukewarm water, but only part of the straw covering should be removed for this purpose. This will be all the attention the beds will require, and those formed in this manner will yield Mushrooms from December to the end of May if duly attended to, unless the weather be very severe; the produce is larger and of better flavour than that grown in Mushroom-houses, but is not so nice in appearance. *W. H. Divers, Ketton Hall, Stamford.*

INDIAN FIGS.—Dr. King, the Superintendent of the Royal Botanic Garden, Calcutta, has just published the second part of his illustrated monograph of the species of *Ficus* found in India, Malaya, and China. This work forms the first volume of the *Annals of the Botanic Garden, Calcutta*. The species, 206 in number, are very fully described, with their synonyms, so that the monograph is of a very exhaustive character, and one greatly redounding to the credit of the author for patient examination and discriminating judgment.

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APPOINTMENTS FOR THE ENSUING WEEK.

SALES.

MONDAY,	Oct. 1	Dutch Bulbs, at Stevens' Rooms.
		Dutch Bulbs, at Protheroe & Morris' Rooms.
WEDNESDAY,	Oct. 3	Greenhouse Plants and Stock, at the Kingston Nurseries, Kingston (three days) by Protheroe & Morris.
		Dutch Bulbs, at 123, Fenchurch Street, by Messrs. Smail & Co.
THURSDAY,	Oct. 4	Dutch Bulbs, at Stevens' Rooms.
		Dutch Bulbs, at Protheroe & Morris' Rooms.
FRIDAY,	Oct. 5	Imported and Established Orchids, at Protheroe & Morris' Rooms.
		Dutch Bulbs, at 123, Fenchurch Street, by Messrs. Smail & Co.
SATURDAY,	Oct. 6	Dutch Bulbs, at Stevens' Rooms.
		Dutch Bulbs, at Protheroe & Morris' Rooms.

Transit of Fruit. OUR American cousins, as many of us know, are great fruit growers and great fruit eaters. Nothing surprises them more when they visit the old country than the relative paucity of fruit on our tables and the high price in the shops. We read occasionally of Strawberry trains running distances and carrying weights of fruit which to our limited and circumscribed notions seem prodigious.

At the recent Fruit Conferences the subjects of fruit-transit and of fruit-conservation have naturally not been lost sight of. In some cases we have heard of fruit being sent from Sittingbourne to London by barge in order to avoid the high charges of the railway company. But it is obvious that, however suitable this mode of transit may be for hard fruits such as Apples, or even Plums, it is not adapted for soft fruit like Strawberries and Raspberries, for which some quicker mode of conveyance must be adopted unless—in deed, the barges could be fitted with refrigerating chambers. Steam barges, or even steam-tugs might be employed to abridge the period of transit. On these points, however, we deemed it desirable to know what was done by our Transatlantic friends, and with this view we applied to the Editor of the youngest, but by no means the least influential, of horticultural journals—*Garden and Forest*, with the following results, which will be read with interest at the present time:—

"Strawberries," says Professor SARGENT, "are brought to market in special fast freight trains, but generally in ordinary cars, when the run is not less than fifteen hours, the trip usually being made at night. When the fruit is packed on Saturday night, and not delivered until Monday morning, especially in New Jersey, the ordinary refrigerator cars, such as are used to bring dressed beef from Chicago to the seaboard, are used, the ice being put sometimes in the ends of the car, and sometimes on the top.

"Peaches are brought from Delaware and Southern New Jersey at this season of the year to New York

and Boston in special trains, generally run at night, in ordinary cars, when they are sent longer distances, say from New York to Chicago.

"When the Michigan Peach 'crop falls short, as is often the case, then the fruit is packed in refrigerator cars. Eighteen hours is probably the maximum distance it pays to ship without ice, and, of course, a good deal of fruit is lost even at this distance. But fruit is so cheap in this country that dealers cannot afford to spend much in getting it to market. Refrigerator cars have been in use in this country for years, and all English railway experts must know all about them."

SOME years ago our excellent colleague, the late THOMAS MOORE, published in these columns an excellent Monograph of Garden Hollies (see *Gardeners' Chronicle* for 1874, 1875, and 1876). His trained eye and long practice in the determination and classification of the endless varieties of Ferns, in which the distinctions are more minute than in Hollies, served him in good stead, so that, by the aid of his terse, but accurate, descriptions aided by numerous figures, it is, in general, not a very difficult, though it may prove a long task, to name a Holly. The variations are exceedingly interesting, not only on account of their numbers and their ornamental character, but because they illustrate the extent to which one species may vary unaffected by hybridisation and the direct action of external conditions. The common Ivy and the Chinese Primrose furnish other illustrations of a capacity to vary, for, in many cases, no better reason that we can assign than "because it is their nature to." In some instances external conditions may have some effect, but when we see a score or a hundred varieties all produced under like circumstances, perhaps all seedlings from one tree, and growing together under like conditions, it becomes hard to see that the circumstances can have much to do with the variability. In some cases the variations represent the form peculiar or proper to certain stages of growth, as, for instance, in the Ivy, where, as Mr. SHIRLEY HIBBERD pointed out, the forms peculiar to the flowering or adult period are often quite distinct from those assumed during the "wild oat" period of bachelor growth among Ivies. In the Holly the variation is first of all into forms with purple or with green shoots. As to the leaves, they vary greatly in size, in colour, in flatness, in the amount and disposition of the spines, in the twisted or hooded character, and in various other matters to which it is not necessary now to allude in detail. Are they not all set forth in the monograph to which we have referred? Turning to the flowers, we must remind the reader that the Holly is, botanically speaking, polygamous. Some of the flowers are male, bearing stamens only; some female, bearing pistils only; some hermaphrodite, with both stamens and pistils, but when both are present in the same flower it by no means follows that the pollen exerts any influence on the pistil with which it happens to be associated in the same flower, and *vice versa*. It may, and does happen, that a particular tree bears male flowers constantly, and then no berries are to be expected on that tree. Another tree may bear all female flowers, and its pistils may ripen into fruit by the agency of the pollen-bearing flowers on neighbouring trees. These characteristics are tolerably constant, but sometimes vagaries occur, and a plant that heretofore has borne stamens only becomes covered with berries, or a plant that is usually covered with berries fails to produce any. These variations in the sexual characteristics, though common enough, always excite astonishment, some-

times even from the growers of Mulberries, Cucumbers, and Marrows, who might be expected to be familiar with such variations.

MR. CROUCHER, of the Gardens, Ochtertyre, lately favoured us with a series of splendid specimens representative of the varieties of Holly under his charge, and which represented a large number of the forms described by Mr. MOORE. But the point of special interest was the indication given by Mr. CROUCHER of those forms that do and those that do not, or have not, produced berries. We subjoin Mr. CROUCHER's list, merely stating that care must be taken not to assume that the Hollies in the fourth column were all exclusively male plants. The non-production of berries may, in some cases at least, have been due to other than structural causes. The numbers are those of Mr. MOORE's monograph.

Leaves Green.

	Not flowered.	Flowered and not berried.	Flowered and berried.
1, nobilis	...	×	
3, grandifolia	...		×
4, latifolia	...		
5, Hodgkensis	...	×	
6, platyphylla	...		×
7, belgica	...		×
8, rigida	...		×
9, alcornis	...	×	
12, fructu-luteo	...		×
14, costata	...		×
15, Fisheri	...	×	
16, heterophylla	...	×	
18, Beatii	...	×	
19, handsworthensis	...	×	
20, Smithiana	...	×	
22, whittingtonensis	...		
23, donningtonensis	...	×	
24, myrtifolia	×		
25, serratifolia	×		
26, recurva	×		
27, hastata	×		
31, maderensis	...		×
38, Hendersoni	...		×
39, ovata	...	×	
40, Foxii	...	×	
41, ciliata major	...	×	
43, crassifolia	×		
50, laurifolia	...	×	
53, integrifolia	...		×
54, scotica	...		×
55, trapeziformis	...	×	
57, tortuosa	×		
59, ferox	...	×	
56, latispina	×		
52, balearica	...		×

Leaves Silver-variegated.

	Not flowered.	Flowered and not berried.	Flowered and berried.
60, argentea marginata major	...		×
63, argentea regina	...	×	
65, argentea varians	...	×	
67, argentea elegantissima	...	×	
68, argentea marginata	...		×
75, argentea mediopicta	×		
76, argentea handsworthensis	×		
77, argentea purpurea	×		
79, argentea obscura	×		
80, argentea pectinata major (?)	×		
82, argentea pectinata minor	×		
86, argentea laurifolia	...	×	
87, argentea sulphurea	...	×	
91, argentea ferox	×		



FIG. 48. *CROCODYLIA GRATA*: STOVE CLIMBER: FLOWERS CREAMY-WHITE, FRAGRANT. (SEE P. 361.)

Leaves Gold-variegated.

	Not flowered.	Flowered and not berried.	Flowered and berried.
92, aurea regina	×	
93, aurea regina nigra		×
96, aureo-marginata		×
99, aurea angustifolia		
107, aurea muricata	×	
103, aureo-marginata fructu luteo		×
108, aurea angustifolia marginata	×	
105, aurea marginata intermedia		×
112, aurea nana ...	×		
120, aurea maculata ...	×		
131, Lawsoni ...	×		
135, heterophylla aureo-marginata	×	
138, aurea laurifolia ...	×		
141, aurea longifolia	×	
142, Watereriana ...	×		
146, heterophylla aureo-picta		×
147, aureo medio picta		×
151, aurea ferox	×	

ROUPELLIA GRATA.—This rare stove climber (fig. 48) has lately flowered in the Palm-house at Kew, where it is trained up against the glass on a wire trellis. It may not be out of place to record a description of it here, on account of the beauty and fragrance of its flowers, and its free habit. It has a woody, terete, and shining stem, sparsely covered with small warts. The leaves are opposite, entire, shortly petiolate, 5 or 6 inches long, oblong-elliptic-acuminate in shape, and of a dark shining green colour on the upper surface. The inflorescence is borne on the ends of the branches in clusters of six to eight shortly pedicellate flowers, which scent the atmosphere for some distance around with their agreeable odour. The calyx is fleshy, and of a shining crimson colour, while the tubular corolla is $2\frac{1}{2}$ inches or more in diameter, and consists of five broadly obovate recurved petals of a creamy-white, tinged with rose from the margin inwards. The throat of the corolla is surrounded by ten lanceolate-linear ligules, the corona of a brownish-red colour. After a couple of days the flowers become very much crinkled, and do not then present such a handsome appearance as when freshly expanded. This plant, which is supposed to yield what is known as the "Cream Fruit," is a native of Sierra Leone, whence it was introduced to cultivation some forty or fifty years ago—it is believed by a Mr. WHITEFIELD—and was exhibited at the Devon and Exeter Horticultural Society's spring exhibition, where it obtained a prize under the name of *Strophanthus Stanleyanus*. It was afterwards named in honour of the Roupell family, but especially Charles Roupell, Esq., on account of the encouragement they gave to botany.

THE NATIONAL CONFERENCE ON APPLES AND PEARS AT CHISWICK, OCTOBER 16 TO 20.—We would remind intending exhibitors and others interested in the cultivation of Apples and Pears, that the date of this important meeting is only three weeks' distant. The late fine weather has so materially improved the fruit crops, that we may confidently look forward to a display of more than ordinary merit. Arrangements are being made for the Conference, which promises to be of a thoroughly practical character. Any one intending to take part in the same should at once communicate with Mr. BARRON at Chiswick.

THE LINNEAN SOCIETY.—Mr. DAYTON JACKSON has earned the cordial thanks, not only of all Fellows of the Society, but of all botanists, for his Index to the first twenty volumes of the *Journal (Botany)* of the Society, published between 1857 and 1884 inclusive,

and incorporated with which is an Index to the *Proceedings* from 1838 to June, 1886. The Index occupies no fewer than 427 pages, double column, and comprises a double record (though in one alphabetical sequence) of the names of authors and of the titles of their papers. Every species described or commented on is separately indexed. In some cases an improvement might be suggested; for instance, we find three entries under the word "adventitious," relating to Grape, Berberis, and Brassica respectively. We do not think anyone would think of looking under the word adventitious for these objects, while if he looked under Brassica he would not find what he required. The entry "Colletia, with combined characters," is probably not one which the author himself would have used, but the compiler may have found it as it stands in the *Proceedings*, a circumstance which shows the advisability of submitting the short records in the *Proceedings*, to the Fellows concerned, as well as their longer papers. Far be it from us, however, to be, even in appearance, captious. We are much too sensible of the magnitude of the service rendered at the cost of so much disinterested self-devotion by Mr. JACKSON to feel aught but grateful to him, and we know that each week will intensify the feeling. Fellows may procure their copies on application at the Society's rooms.

AGRICULTURAL LECTURES.—The annual course of lectures on agriculture will be given at the City of London College, Moorfields, on Tuesday evenings, at 7 P.M., beginning on October 2, by Mr. BERNARD DYER, B.Sc., F.C.S., F.L.S., Consulting Chemist to the Essex, Leicester, and Devon Agricultural Societies. The lectures will treat of soils, plant life, manures, tillage operations, live stock, dairying, food, &c. The course will be in connection with the Government Science and Art Department, and will end in May. In addition to the City of London College and other prizes, the Saddlers' Guild offers, as in former years, a prize of £5 5s. to the student who passes the best examination in chemistry and agriculture.

AMARYLLIS RETICULATA.—It is seldom that cultivators succeed with this Brazilian plant so well as they may wish, and the reason may be found in the fact of a positive rest period not being afforded the plants after having bloomed. On the occasion of a recent visit paid to the garden of H. E. GREEN, Esq., of Kingsford House, Colchester, we saw several plants in fine bloom, two of which had as many as twenty spikes of beautiful pink transversely veined flowers. Mr. KETTLE, the gardener there, described the simple means he employed to obtain such good results; and these were infrequent re-potting—perhaps once in two or three years—top-dressing annually with rich sandy loam being sufficient in the intermediate years; growing the plants in an intermediate-house from the month of March till they flower in August and September, and then a rest in an ordinary greenhouse from November till March, water being quite withheld during that season. The leaves remain on the plants all the winter, and although they may shrivel somewhat from the enforced drought, they become again plump on water being afforded the plants.

THE UNITED HORTICULTURAL BENEFIT AND PROVIDENT SOCIETY.—The annual dinner of this Society is announced for October 11 at the Cannon Street Hotel, E.C., Dr. HOGG, F.L.S., in the chair; and Mr. H. J. VERRILL in the vice-chair. At a meeting of the committee held at the "Caledonian" Hotel, Adelphi, on Monday last, special sub-committees were appointed to deal with the decoration of the hall and tables, the arrangement of the dessert, &c. It was reported that Messrs. B. S. Williams, J. Laing & Co., and H. Cannell & Sons, had promised to send plants for the purpose without charge. Messrs. W. Thomson & Sons, Clovenfords, had also promised a basket of Grapes. Mr. E. R. CUTLER offered, on behalf of Miss Marie Belval, to provide a musical entertainment at a merely nominal cost, and this offer was gratefully accepted. The committee

of this useful Society make an appeal for support on this interesting occasion. The dinner will take place at 5:30 P.M.

THE YORK GALA.—Mr. CHARLES SIMMONDS has succeeded Mr. WILSON as Secretary to this Society. Mr. WILSON leaves shortly for London, and the committee has voted him a handsome presentation as some recognition of his valuable services, and some of his old friends, exhibitors and others, contemplate a further presentation.

THE BOTANICAL GARDEN AT BADEN BADEN.—Mr. PAUL SINTENIS, who, on the inducement of Mr. MAX LEICHTLIN, had undertaken a botanical exploring tour to Kurdistan and East Armenia, has now safely returned to Europe, carrying with him large and very rich herbaria, and also several thousand roots of new bulbous plants to be cultivated at, and hereafter to be distributed from, Mr. MAX LEICHTLIN'S private botanical garden.

"THE ORCHIDENNE."—Under this name was constituted at Brussels, on September 23, a Society of Amateur Orchid Growers. The object of the Society is exclusively to foster the taste for, and promote the culture of, Orchids. This object is to be effected by meetings or monthly exhibitions, frequent lectures, and annual exhibitions. The Society consists of seventy foundation members, but there is no limitation as to the number of members in the future. The Honorary Presidents are Baron de Bleichroder, H.B.M., Consul at Berlin, for Germany; J. Linden, for Belgium; Count du Buysson, for France; De Lansberge, ex-Governor-General of the Dutch Indies, for Holland. Four other Honorary Presidents for other countries will be appointed at the next general meeting. The Executive Committee is composed of three members appointed for four years. The gentlemen elected by the unanimous vote of fifty-three members present or represented, are the following:—Chairman: G. Warocqué, Member of the "Chambre des Représentants"; Secretary: Lucien Linden, Editor of the *Lindenia*; Treasurer: J. du Trien de Terdonck. The members of the jury for the monthly meetings are:—MM. F. Kegeljan, D. Massange de Louvrex, J. Van Volxem, E. Rodigas, G. Miteau, L. Lubbers, J. Moens, A. Van Imschoot, E. Wallaert, A. Lallemand, O. de Meulenoire, Count A. de Bousies. The first monthly meeting will be held on October 14 next, in the great Exhibition Hall of the "Horticulture Internationale," Rue Wiertz, Brussels. Among the seventy foundation members are MM. E. Bergman, Secretary of the National Horticultural Society of France; J. E. de Puydt, of Mons; Max Kolb, Munich; Maxime Cornu, Director of the Jardin des Plantes, Paris; Beaucarne, A. de Warelles, Chevalier L. Modigliani, Dr. F. Muller, of Graz; De la Devansaye, Count de Villeneuve, Brazilian Minister in Brussels; Prince Mestchersky, Baron de Bethune, H. Gruson, Magdeburg; De Franciosi, F. de Cannart d'Hamale, &c. The Society will organise a great exhibition of Orchids in the spring of next year.

A LILY SHOW.—"Nothing to be seen in London in September!" Gardeners know better than that, while plant-lovers will know that a visit to a nursery at any season is sure to be one of interest. But recognising all this as well as most people, we own we were not prepared for so fine a show as that Mr. W. BULL has prepared in succession to his Orchid exhibition. His display of Lilies occupies the same long house as that devoted to the Orchids, and we do not exaggerate when we say that the general effect is little, if at all, inferior. Of course we do not expect orchidomaniacs to coincide in this opinion, but those who are not specialists will admit, that for delicacy, if not variety of colouring, the Lilies equal the Orchids; while as to perfume the latter—to use a cant phrase—are "not in it." The display is made up chiefly of innumerable varieties of *Lilium auratum* and *L. speciosum* together with *L. tigrinum* and others. Of *L. auratum*, the finest examples belong to the type platyphyllum,

distinguished by its broader leaves, larger, and more substantial flowers. The colour variations of each section run parallel; thus in both the common and in the platyphyllum types there are red-striped forms, golden-banded forms, warted forms, and forms with smooth segments. It thus becomes necessary to recognise two forms of *virginale*—one belonging to the ordinary type; and in which the segments are warted, and one to the platyphyllum type, in which the segments are destitute of warts and spots. *L. auratum rubrovittatum* is a favourite by reason of its deep crimson band. In the *speciosum* type there is every variety, from the clearest white of the form known as *Kraetzeri* to the rich carmine segments of *Melpomene*, and the form of the flower and the direction of its constituent segments are also subject to as great diversities. Of *L. tigrinum*, mention must be made of *L. tigrinum jucundum*, with linear leaves and red-spotted flowers; and *L. tigrinum Leopoldi*, with ovate-lanceolate leaves and broader segments to the flowers. The display will be kept up for some time longer, as many of the *speciosum* type, especially *Kraetzeri*, have not yet unfolded their blooms. It was curious to see the profusion of bloom that had been formed on *L. candidum*, the common white Lily, perhaps the loveliest of all, and which under some circumstances fails to flower. Here in this nursery a large number were lifted for sale, and those that were not disposed of were simply laid in. These have flowered in profusion—an argument, some will say, for shallow planting, but what the effect on the bulb may be we cannot say. Of course, no one would visit this establishment without at least a glance at the Orchids. It is not a season when much bloom may be expected, but some of the *Odontoglossums*, such as *O. Harryanum*, the white-lipped form of *Bictonense*; *Miltonias*, *Masdevallias*, may still be found in bloom, while among *Lælias*, *Turneri*, *Dayanana*, *bicolor*, *Harrisoni*, and others, are in flower, and there is a rich promise of future bloom from the remarkably sturdy and healthy inhabitants of the large *Lælia* house.

CUCUMBER BIBBY'S SEEDLING.—This is an excellent summer Cucumber, a great bearer, and handsome, in many points resembling Rollisson's Telegraph, when true to name. It was, we believe, raised by Mr. BIBBY, nurseryman, Colchester, and is much in repute in the Eastern Counties.

THE ENGLISH APPLE AND FRUIT GROWING COMPANY, LIMITED.—Under this title a company is to be formed, with Messrs. HEALD, A. F. BARRON, J. CHEAL, and J. ROBERTS as directors, and Mr. R. DEAN as temporary Secretary. The company proposes to purchase a suitable farm of 300 acres, in Kent, and there carry on the cultivation and preservation of hardy fruits. A capital of £50,000 is required, to be raised in shares of the value of £1 each. Mr. OLLARD, of 1, Clifford's Inn, Fleet Street, is the solicitor, and the bankers are the London and County Banking Company.

THE BRITISH ASSOCIATION.—At one of the recent meetings at Bath, the Rev. R. BARRON read a paper on the flora of Madagascar, basing his statements on his own research and the investigations of Mr. Baker. He referred to the ruthless manner in which the forests are being destroyed by the natives. Representatives of 143 orders and 980 genera have been found; three regions—eastern, central, and western—are recognised, only comparatively few forms being common to all three. The Composite and Leguminous plants and the Ferns are the best represented. One Violet has been found also at a great elevation. Fernando Po, the Cameroons, and Abyssinia, and some other instances of equally curious distribution, point to an earlier temperate period. Four-fifths of the species and one-seventh of the genera are peculiar to the island, thus indicating its great antiquity—a fact to which its zoology also bears witness.

The Weather.—Mr. E. J. Lowe stated, at the British Association, that the effect of the weather of 1888 had been to destroy large numbers of birds,

to such an extent that it had been unnecessary to protect the fruit. Slugs and snails had been extremely abundant. All seedling plants, vegetables, leaves, and flowers, had been destroyed wholesale, and great damage had been done to Wheat, grass, and other agricultural crops; but what had been most noticeable was the destruction by caterpillars of all the leaves of the Oak. Thousands of Oaks had been without leaf, bare like winter, and now they were only just coming into leaf again, but unfortunately a second crop of caterpillars was noticed recently resuming the attack on the new leaves. There had been a great increase among the destructive slugs of various kinds, and earwigs, woodlice, ants, butterflies, and beetles, had also been unusually abundant, but there had been an absence of wasps, and only a very few moles. Snakes and adders had been very numerous. Early sown Peas were twenty-one weeks before they were fit for the table, and all fruit had been very late, many Gooseberries being not yet ripe, and Currants still abundant. Pears were scarcely swelling, and of Mushrooms there were none. There was an enormous crop of Oats. The hay crop had been the latest ever known, much remaining unharvested at the beginning of the month. It was worthy of remark that many delicate plants were uninjured by the cold of last winter. The author explained, in concluding,



FIG. 49.—BLACK CANKER OF BULBS.

that his reason for contributing the paper was in order that it might be a record for future comparison.

PINE RIPENING IN THE OPEN AIR.—We desire to call attention to an interesting experiment recorded in another column, by that veteran and venerated horticulturist, Colonel TREVOR CLARKE. We need only add here, that the Pine was a well-formed one, 14 ounces in weight, very juicy, and fuller of flavour than many a hothouse Pine that we have tasted.

PRESERVING POTATO BAGS.—Mr. J. A. Hogg, in the *English Mechanic*, says:—"Steep the sacking for twenty-four hours in a decoction of 1 lb. of Oak bark in 14 lb. of boiling water. Then pass it through running water and hang up to dry. This quantity does for 8 yards of material."

BLACK CANKER OF BULBS.

Our friends on the Continent recognise a certain disease of bulbs under the name of "black canker" or "black rot." In typical cases the bulbs are studded with minute black projecting spots, as shown in the upper part of our illustration (fig. 49); this is the resting or hibernating state of the fungus which causes the disease. Bulbs of *Narcissus* are imported into this country in an apparently sound condition, but really with the fine threads of a fungus mycelium just beneath the outer membrane; in this condition it is impossible to tell without a microscopic examina-

tion whether the bulbs are free from taint or not. In the course of a few weeks (or perhaps months) the spawn or mycelium beneath the membrane becomes condensed, and congregates in little knots (like grains of gunpowder), which speedily become black outside. These grains are sclerotia or little nodules of hard fungus spawn. If the membrane of the bulb is carefully laid open with a needle, and one of the black grains exposed, it will be seen, if enlarged ten diameters, as shown on the left of the illustration. If a fragment of the sclerotium is examined under the microscope and enlarged 300 diameters, it will be seen, as in the right-hand bottom corner, one compact mass of very fine fungus threads. If reference is made to the *Gardeners' Chronicle* for May 28 last year, p. 712, an illustration will be seen of the threads of the well-known sclerotium of *Anemone* beds, enlarged 150 diameters; this latter sclerotium has threads four times the diameter of the sclerotium of *Narcissus* and *Hyacinth* bulbs.

The black grains, or sclerotia, remain perfectly quiescent whilst the bulb is quiescent, but as soon as the bulb shows signs of renewed life the black grains become active. When the bulb is planted the grains also are obviously planted at the same time: the warmth and moisture favourable to the bulb is exactly what the grains require. The grains, after about nine months' rest, produce a small fungus named *Peziza*—possibly *P. ciborioides*, Fr.—a fungus which sometimes grows on Oak leaves and on Clover; in the latter position it is a cause of one form of (but not the true) Clover sickness. This fungus produces spores which germinate and produce a new crop of sclerotia. The mycelium of a similar, but larger sclerotium, is sometimes very destructive to the Potato haulm: the *Peziza* of this sclerotium (*P. postuma*), has been described and illustrated in the *Gardeners' Chronicle*.

The life of the "black canker" of bulbs is carried on in a passive state from year to year by the black grains, termed sclerotia, beneath the membrane of the bulb. As bulbs infected with the granules propagate the disease, no bulbs exhibiting the granules of "black canker" should be sold or planted. A very similar sclerotium grows on Onions; this on germination produces a mould, or mucor. *Worthington G. Smith, Dunstable.*

NOTICES OF BOOKS.

THE PRODUCER AND CONSUMER. By Samuel Rawson. (J. L. Allday, Birmingham.)

This is an essay in pamphlet form purporting to contain "Practical Hints by a Practical Man." From a perusal of its pages we feel convinced that its author is animated by a desire to ameliorate the condition of the peasantry, small farmers and others, who are dependent on land cultivation for a livelihood. The object in view is praiseworthy, and one to which we are willing to subscribe at all times, but whether it will be gained or furthered by the publication under notice, is quite a different matter; we rather incline to the opposite belief. In his introductory remarks the author informs his readers that he has had "upwards of thirty years' experience as a fruiterer and salesman in the fruit and vegetable trades in one of our largest provincial markets;" and further, "for many years I have persistently urged upon farmers and others with whom I have been in contact in the course of journeys made into all parts of England, the absolute necessity, if they wished to make the land pay, for attention to fruit and vegetable growing; and I have brought to their notice, again and again, the certain inroads being made by the foreign producer, insisting that, by a proper and careful system of cultivation, success must attend the enterprise." We also learn that our imports of fruit and vegetables amount in the aggregate to a value of nearly £6,000,000 a year. From chapter xi., which treats on fruit, vegetables, and flowers, we glean much information regarding wholesale prices of the two first-named; thus we learn that "early forced Rhubarb will make about 2s. per 15 lb.

or £15 per ton; Seakale, 4d. per pound; Asparagus, early in the season, 3s. 6d. per 100, and not less than 1s. at any time; early Cabbage, £40 an acre; green Peas and Broad Beans, about £12 an acre; early Potatoes from the Channel Islands, £50 to £60 an acre; Kidney Beans, £25 to £30 an acre; other vegetables, such as winter Cabbage, Carrots, Parsnips, Turnips, Cauliflowers, &c., from £16 to £20 an acre." To the above we think the author should have appended the words:—These prices cannot be depended upon in either a good or bad season, as they fluctuate considerably, and are regulated entirely by supply and demand. Again, the author states that "late or old Potatoes will, with a fair crop, make £20 an acre." After such a statement it seems almost satirical for us to remark that vast quantities of old Potatoes have this year been sold without realising any profit at all, and a reference to our columns for June 2 will show that at that time they were unsaleable in one of our principal markets. Concerning many kinds of fruit prices are also given, as well as a list of those varieties which are the best to grow. About two pages are devoted to flowers, but there is nothing said which will be of any practical utility. We note the following as a specimen:—"Then again there are the lovely wild flowers in their different seasons, too often left to 'blush unseen and waste their sweetness on the desert air,' and which would pay to gather if the means of getting them to market were placed in the hands of the gatherers." What would Squire Jones or Farmer Smith say to persons whom they might meet in their fields or woods gathering wild flowers for market? Chapters iii. and iv. are devoted to poultry and bee-keeping. These are succeeded by one on "Distribution;" the forming of co-operative companies is strongly advocated, and the whole of the remarks relative thereto read very much like a prospectus with a view to floating a new concern. We are also told something about wines, jams, and pickles. Chapter vi. deals with railway rates, but nothing is stated that is different from what we have heard many times before. Agricultural education is briefly touched upon, and in chapter viii.—"Conclusion"—the author assures his readers "that the welfare and prosperity of the nation has been the motive urging and directing me to exert whatever small ability I may possess." This we fully believe, but we deprecate the circulation of this class of literature without the necessary precautions and warnings as likely to lead to disappointment.

BEGONIAS AT MESSRS. LAING AND SONS.

THE Stansted Park Nursery has been, and is still, gay with many thousands of tuberous Begonias planted in long oblong beds, within view of the public road. There is no endeavour to obtain effects by contrasting colours, but rather convenience in comparing varying shades of particular decided colours; so that we found some beds filled with crimson, another with bright reds, others with pink, white or yellow—the main divisions into which the tuberous Begonia falls as regards its tints.

Constant selection of the best forms and brightest, darkest, or purest tints, as may be in each main section of colour desirable, is regularly and persistently followed out during the flowering season out-of-doors, several young men being employed in the work.

The actual raising is carried out under glass, from the fertilisation of the flowers to the gathering of the seed, but the flowering of the progeny and their final selection is done in the open air. The result of all these labours is a plant of floriferous, generally dwarf bushy habit, well fitted for beds in the flower garden, for vases, window-boxes, or for greenhouse decoration in the summer. These Begonias as a rule produce on a spike one male and two female blooms; and this not affording a long succession of bloom when grown in pots or baskets, Mr. Laing has seen the need of increasing the number of flowers on a spike, and has so far been enabled by

crossing and selection to get plants with two males and four to six females on a spike, thereby in some cases trebling the number of flowers, and rendering the plant when grown with widely divided shoots, as it is when placed in a hanging-basket, far more effective than was formerly possible.

Improvements in white varieties were noticed, where the pinky colour usually observed on the back of the petals had given place to almost pure white, a decided gain when the plants are used in the garden to give certain effects by contrast.

The season has not been favourable to the Begonia, and growth was late, and blossoms few, it being the middle of August before beds had even a moderately filled appearance.

HOME CORRESPONDENCE

GARDENERS' ORPHAN FUND.—Though this charity has progressed far more rapidly than the most sanguine amongst us expected, that is not a reason for slackening pace, or getting careless in respect of greater success. Such an idea has not entered the heads of the young gardeners associated together for mutual improvement in connection with the Royal Horticultural Society's Garden, Chiswick, who, according to a circular to hand, are proposing to have a *soirée* in aid of the Fund, in the Chiswick Vestry Hall, on the evening of October 17, the second day of the Apple and Pear Conference that is to be held at Chiswick. This is, I think, a very happy thought, and deserving of support, and as many gardeners and others interested in gardening, are likely to be in the neighbourhood at that time, it behoves them to strain a point in the endeavour to be present at the *soirée*, and so encourage the promoters in their laudable work. Yet another hint: as there are similar associations about the country, why not follow the lead that the Chiswick Association thus takes, and during the long evenings of the coming winter, devise at least one meeting or entertainment in aid of the Fund? The writer of this has already taken steps to practise what he has here preached, and as example is contagious, he expects to hear that many others mean to do the same. *W. W.*

GIANT IRISH YEW.—I notice a correspondent mentions a successful instance of moving an enormous Irish Yew of great age. He has doubtless recorded his success with the object of benefiting others that may require the necessary information, but unless he more fully describes his great feat he will not benefit his fellow-gardeners very much. It would be interesting to know where such a giant Irish Yew can be seen. I was under the impression that I had seen as fine specimens as are to be found, but they would have to stand on each other's heads to attain the height he gives, "50 feet." I have also found Irish Yews that have been growing a long time in this same position somewhat difficult to move successfully. *J. H. Goodacre.*

THORBURN'S EVERBEARING CUCUMBER.—I have given this American variety a trial in a cold pit, and also planted out-of-doors on a bed of manure. Owing to the past summer having been wet and cold, this, like other out-of-doors Cucumbers, has not done well out-of-doors; but in the cold-pit, where the plants were kept close, they produced egg-shaped fruits of 2 to 3 inches long, most abundantly, in clusters of from 3 to 5 from each joint; and although the fruits have a rough yellowish skin, they are crisp and palatable enough when sliced and par-taken of in the usual way. However, the size and appearance of the Everbearing Cucumber being somewhat against it, it is not likely to find favour in this country, as the Long Prickly and Stockwood Ridge Cucumber are both a long way before it in point of size and appearance, in addition to being very productive bearers. *H. W. Ward.*

PASSIFLORA CONSTANCE ELLIOTT.—This fine white hardy Passion-flower is growing freely and blooming grandly on the new stables recently built at Hanger Hill House, Ealing, the residence of E. M. Nelson, Esq., J.P. This handsome block of buildings forms a parallelogram. The south front, which is planted with Ivies and flowering climbing plants, is the dwelling-houses of the coachman and grooms; the east wing is the harness-room and offices; the

west wing the coach-houses, and the north a twelve-stalled stable, in the centre being a spacious courtyard. The stables are fitted up with every convenience; they are lofty, airy, and commodious. With that thoughtfulness which is a leading quality in Mr. Nelson's character he has, on the south front, set apart some garden ground for the stablemen, in which they appear to find a great deal of pleasure and profitable occupation. *R. D.*

HELIANTHUS ATRORUBENS, Linn.—The name of no Sunflower has ever brought so much disappointment as the subject of this note. Hundreds of persons have purchased plants under the name, and have been disappointed time after time with either some other Sunflower, or a plant of quite another genus, until many have given up purchasing it under the name. I have myself obtained plants as *Helianthus atrorubens* from four different nurserymen, from two as late as May, 1888. In each case I received plants of a species of *Helioopsis*, which many more, like myself, have been supplied with. Some, not knowing the difference between the two genera, have credited the *Helioopsis* species as the true *Helianthus atrorubens* "Linn," while others have also long given up purchasing under the name, being convinced that such must have been from the first a *Helioopsis*, and not deserving the former name. Others have been led by recent botanical records to consider it the same as *Helianthus rigidus* of recent authors and of the trade in part, but which is rightly *Helianthus diffusus*, and is well figured in *Bot. Mag.*, vol. xlv., t. 2020 [doubtful. *Ed.*], and published in 1818. This and its varieties are very handsome when in full flower, but are nearly past their best by the time *Helianthus atrorubens* begins. This, though of recent years, has been considered by some to be not distinct, was evidently for want of seeing a living or dried specimen of the true plant, which is quite a distinct species, and will be found figured in *Bot. Mag.*, vol. liii., t. 2668, and published in 1826, and which figure is sufficiently distinct to recognise a plant by, and had I seen it sooner I should have detected sooner its being in my possession; and the figure is sufficiently clear to prove that it is other than the same, or even a variety of *H. diffusus*, although it was evidently figured from a plant grown in a pot, and which had become impoverished. It is this way often grown, owing to its roots spreading in the same free manner as those of *Helianthus diffusus* and several other species; but when pot-bound, or the soil is at all exhausted, it assumes a very different character of growth; its leaves become much narrowed, and more evenly serrulated, its stature dwarfed; its involucre reaches not more than half its proper length, and is almost as imbricate as in *H. diffusus*; while if planted out in rich soil in an open position, and under the same conditions as *H. diffusus*, these characters alter, and show it to be totally different from the latter and appropriately named species, equally handsome, cheap, and deserving extensive cultivation. *S. Appleton, St. John's Nurseries, Worcester.*

ANNUAL LIFTING OF DAFFODILS.—I hope that those who write on this subject will not suppose that I want to have the last word, for I can assure them that I read the notes of those who differ from me with as much interest as I do those who agree. On p. 189 Mr. Dod's remarks on N. Bernardi surely cannot apply to Daffodils in general, for it is a well known fact that some of the varieties collected on the Pyrenees do not adapt themselves to cultivation as our garden forms do. Collected bulbs of N. pallidus præcox with me make fine bulbs the first year; whereas the second year, lifted or unlifted, more so if not lifted, they are apt to get soft. I send you a sample of N. Bernardi bulbs collected last year and grown one year here they were lifted about the middle of July, and have been out of the ground since then, and I should be pleased if you would report on them [planted in border. *Ed.*]. Meantime, I shall wait with patience till next spring for a report on those which Mr. Dod has left in the ground. It may be a good theory, but I think it does agree with practice, that a bulb will get rid of wet in the ground that it cannot get rid of in a dry state. That dreadfully wet season 1879 taught me rather an expensive lesson. Bulbs planted in 1878 and left in the ground till 1880, when dug the best of them turned out to be less in weight than when planted, while some of the varieties disappeared altogether; whereas dried bulbs planted in 1879, and lifted in 1880 turned out fairly well, and I have obtained better results since from those lifted annually than those that re-

main more than one year, and my last four years' experience has been on both rich loam, and light sandy soil. I see on p. 263, Mr. Burbidge, when quoting me, seems to misplace my words; he there represented me to have said that drying or rather cleaning and storing Narcissus bulbs was an advantage to them; he again says the only point of difference between us is this question of drying, cleaning, and storing the bulbs. I have looked over my papers, and fail to find the words in the form as set forth by Mr. Burbidge on p. 63; what I recommended was to dry them in trays and plant the bulbs at once after having been cleaned (not store them); also on p. 490, I there stated, if stored in bulk after having been cleaned they will become mildewed, and if spread out they will get deteriorated. The only two points of difference between Mr. Burbidge and myself is the question of drying and cleaning. Mr. Burbidge thinks a bulb is being starved when out of the ground, whereas I believe there is no more danger, but a gain by a bulb being out of the ground a month or six weeks, having a rest, than there is for a man having six or seven hours sleep out of twenty four; and cleaning is just as conducive to its health as it is for a man to have a good wash after a night's rest before starting work. There was a time when it was my custom to lift and plant, but after commencing to sell, I was obliged to dry and clean my bulbs before sending them out to my customers. Those unsold and planted later than those that had not been cleaned and dried, came up earlier and flowered stronger—so much so, that the difference was discernible 50 yards away; therefore my custom is dig, dry, clean, and plant. There may be soil and situations where it may not be necessary to go to all this trouble and expense. I have simply given my experience as I have found it. *James Walker.*

A PROLIFIC OAT-PLANT.—Whilst out shooting a few days ago, one of my sons found amongst some young underwood an Oat-plant, which struck him as of such unusual growth, that he subsequently fetched it for me to see. It has apparently all sprung from one grain, and consists of sixteen stems, each of which carries the following number:—

Stem, No. 1	...	136 grains	Stem, No. 9	...	74 grains
" 2	...	129 "	" 10	...	104 "
" 3	...	108 "	" 11	...	152 "
" 4	...	155 "	" 12	...	129 "
" 5	...	122 "	" 13	...	99 "
" 6	...	103 "	" 14	...	80 "
" 7	...	115 "	" 15	...	88 "
" 8	...	130 "	" 16	...	124 "

A total of 1818 grains, besides many which had been previously picked by birds. The plant is about 6 feet high. I am sending the root for your inspection. *J. T. Rogers.*

CHANGE OF COLOUR IN DAHLIAS.—Could you, or any reader of the *Gardeners' Chronicle*, tell me the cause of this great change. Last year I had a quantity of Dahlias, many different colours. They were taken up and stored in the autumn; this season they were planted at the proper time and way, but, to my astonishment, nineteen out of twenty came when in flower a lovely white. *Old Subscriber.*

HARDY FRUITS AT STOKE COURT, SLOUGH.

When looking through the gardens at the above place, a few days since, I was particularly struck with the quantities of hardy fruit hanging on the various trees, and perhaps a few notes on some kinds that are fruiting so freely this season may be acceptable. The kitchen garden is surrounded with high walls, and in addition it is well sheltered on the northern side by a broad belt of Spruce Firs. On entering a door from the north side a row of Apple trees laden with fruit first attracted attention. These trees were at one time kept pruned and restricted in bush form, and very few Apples were obtained from them. Some twenty years since Mr. Maher, the present gardener, not being satisfied with the crops produced, allowed the branches to extend, merely thinning them occasionally when required; and since this mode of culture was followed good crops have annually resulted. The trees are now 15 feet to 20 feet high, with long spreading branches, almost touching the ground, and on more than one occasion the surplus from the sixteen trees has been sold hanging for £20. The varieties are Ribston Pippin, Blenheim Orange, Wellington, Fearn's Pippin, Dutch Mignonne, Cox's Orange Pippin, Cornish Aromatic, and Gooseberry Pippin, the latter a late and remarkably good keeper. Among Pears, Beurré Bosc, Marie Louise, and Brown Beurré were well cropped; and a large standard tree of Knight's Monarch was carrying a heavy crop, but

in a very backward state, and not likely to come to maturity this season. Last year the fruit from this tree was of excellent quality, a hot season suiting this variety. I was also surprised to find the Peach crop generally on the walls very good. Part of the trees are protected with a coping of glass 3 feet wide, and others with only a double thickness of netting, the fruits under the latter being quite as abundant as under the portion that had received the glass protection. Waterloo and Hale's Early had already been gathered; Crawford's Early, Goshawk, Crimson Galande, and Dr. Hogg, very heavy crops, nearly ripe; Vanguard, good, and said to be a certain cropper; Walburton Admirable, rather late, and will need several weeks of fine weather to ripen; Lord Napier and Pitmaston Orange Nectarines had good crops, the former ripe. Of Plums, I noticed Golden Drop, Kirke's, Washington, Angelina Burdett, and Victoria, with very heavy crops of nice fruit. *C. Herrin, Dropmore.*

THE MUSCAT HAMBURGH GRAPE.—This, perhaps the finest flavoured of all Grapes, may be grown successfully in a lower temperature than generally accorded Muscats. Some of the best examples I have yet seen were grown in a small span-roofed house where very little fire-heat was used, sufficient only, in the early season, for excluding frost from bedding plants stored in the house. I believe imperfect fertilisation has also much to do with the poor samples of this Grape often seen with small berries. To avoid this, with a soft brush we brush the bunches over daily when in bloom, having previously used it to set Black Hamburgh bunches so that it is full of pollen when applied to the Muscat Hamburgh. I enclose a small bunch, the last one of eighteen cut from a Vine growing in a Peach-house which has been open night and day since the Grapes commenced colouring, and where the temperature through the season seldom exceeded 60° from fire-heat. *H.* [The bunch was well set with fine berries. *Ed.*]

DAMAGE TO THE TREES IN BATTERSEA PARK.

—Some ten days ago, when taking a walk through Battersea Park, I was terribly grieved to see the way in which the roots of the trees were being mutilated by the drainage works now going on. A trench about 4 feet deep had been cut, and was then remaining open, within 4 feet, or thereabouts, of the Elms on the one side, forming the beautiful avenue which extends from the entrance near the station across the Park past the subtropical garden. Very great and creditable care has been bestowed on these trees for some twenty or twenty-five years till they have become really handsome specimens when the work of years is thrown away by ruthlessly cutting off all the roots on the one side of the left-hand row: many of these roots are as large as one's wrist! Who is responsible for this? The act is so inconsistent with horticultural (or arboricultural) practice, and so at variance with other parts of the management in the same Park, that it does not seem credible that those who have the direct charge of the grounds could have sanctioned it. Had the channel for the drain been made through the centre of the avenue little or no harm would have been done to the trees. *G. E.*

NEW VEGETABLES.—Mr. Wilkes is doubtless an excellent gardener, but I think, in the estimation of most readers, he puts himself out of court in the matter of capacity to distinguish between the merits of allied varieties of vegetables when he intimates his inability to find any appreciable difference between New Intermediate and Long Red Surrey Carrot. That he should have only seen the former, now very popular and almost universally grown Carrot at Shrewsbury leads to the inference that in not having grown it himself he is behind the age. But thus it is that we find some critics railing against new things without having grown them. I believe most gardeners will admit that there has been with nearly all kinds of vegetables a remarkable advance in quality during the past twenty years; indeed, it would be impossible for so enterprising a body as our seed trade is to stand still and accept what is as finality. Now and then such a very fine vegetable as the Autumn Giant Cauliflower, New Intermediate Carrot, the Seville Longpod Bean, or similar novelty bursts upon us suddenly, but generally improvements are slowly progressive, as in the case of Peas, Potatoes, Cabbages, Onions, &c., so that the improvements fail to strike us as being so very remarkable, and yet they are so. Any check to this development would mean to the seed trade stagnation and ruin. *Penmit*

me to say that I have not asserted that Sutton's Little Gem Cabbage is a development from Little Pixie Cabbage. I only referred to those kinds in conjunction in a previous note to illustrate the progress of development in vegetable improvement, but I have not the least knowledge as to whether there is any lineal connection between the kinds named. Sometimes kinds of very dissimilar character will produce others equally dissimilar after intercrossing. It is hard work to fix and maintain these breaks, and on the whole most admirably do our seed trade accomplish it. *A. D.*

HEATED BORDERS IN THE OPEN AIR.—I send you a Pine-apple, and some Peach and Nectarine fruits ripened in my "Hypocaust," or heated earth garden, in the open air. One Peach and one Nectarine, supplied by Mr. Rivers for the purpose, with the fruit well set, were plunged in the hot earth, and the Pine-apple, a small-fruited sucker, was planted right out. This was in the first part of June. The Peach and Nectarine never suffered a check and are now in healthy and luxuriant foliage. The fruits I send were attacked by slugs and so dropped. The Pine grew strongly, and the fruit, about the size of a green Walnut when put out, had become yellow and perhaps ripe, ten days before. *R. Trevor Clarke.*

SOCIETIES.

ROYAL HORTICULTURAL.

TUESDAY, September 25.—A small meeting took place at the Drill Hall, James Street, Westminster, on the above date, Dahlias and Roses being the chief attraction, the former by Messrs. Turner, Slough; Keynes, Williams & Co., Salisbury; West, Brentwood; and Rawlings, of Romford; and Roses by Messrs. W. Paul & Son, Waltham Cross.

A splendid group of Guernsey Lilies, from Baron Schroder's garden; a collection of hardy plants from Mr. T. S. Ware; Nepenthes from Mr. B. S. Williams, Holloway; and fruit from Messrs. J. Veitch & Sons' nursery were the other items of interest.

Floral Committee.

Present: G. F. Wilson, Esq., in the chair; and Messrs. W. Bates, H. Herbst, W. Wilks, T. Baines, R. Dean, B. Wynne, J. Dominy, H. M. Pollett, J. O'Brien, W. Holmes, E. Hill, G. Duffield, W. Goldring, J. Walker, W. H. Lowe, and J. Fraser.

Messrs. J. Veitch & Sons, Royal Exotic Nurseries, Chelsea, showed a group of hardy shrubs, the most conspicuous object being several flower-spikes of *Hydrangea paniculata grandiflora*, about 18 inches in height: they had been cut from plants planted in May last; *Berberis Thunbergii* in fruit, and with the autumnal red tint on its leaves, was also a pretty object; also in berry, were *Cotoneaster uniflora* and *Crataegus pyracantha Lalandei*, which last is a remarkably pretty thing and very useful for decorative purposes; *Daphniphyllum glaucescens viridis* was also shown. There was also a fine *Canna* from the same firm, named *Geoffroy St. Hilaire*, with deep red-brown foliage and rich scarlet flowers of large size, the whole plant being rather tall; *Louis Thibaut*, yellow spotted with rich red, was another pretty *Canna*. Several trusses of bloom of hybrid *Rhododendrons* completed the group.

Several named *Cannas* were also sent by Messrs. H. Cannell & Sons, Swanley, Kent, and made a good display—*Gerard Audrian*, Indian-yellow flushed orange, and *Paul Bert*, orange-scarlet, being specially noticeable. The same firm also showed a collection of fine single and double blooms of tuberous *Begonias*, *Chrysanthemum Sam. Henshaw*, a lake-coloured Japanese variety, of the style of *Madame Audiguier*; and the yellow *Juarezii* *Dahlia*.

A few specimens of late flowering *Asters*, of the *Lilliput* section, and spikes of the sweetly-scented *Hedychium Gardnerianum* were sent from the Society's Gardens at Chiswick.

In one corner of the hall a brilliant show was made by a large group of *Nerine Fothergillii*, sent by Mr. H. Ballantyne, gr. to Baron Schroder, The Dell, Egham. The plants were well grown and vigorous, presenting a sheet of bright colour.

Mr. B. S. Williams, Victoria and Paradise Nurseries, Upper Holloway, N., showed a collection of *Nepenthes*, in fine specimens, numbering about thirty plants, *Excelsior*, with numerous large pitchers, *Mastersiana*, *amabilis*, and *Dormaniana* being best shown; and *Hookeriana*, *Williamsi* and *intermedia*

were also good. Also an ornamental-leaved Beet, McGregor's Favourite, with narrow leaves about 6-8 inches in length, folded inwards, and deep purple-brown in colour.

From Mr. T. S. Ware, Hale Farm Nurseries, Tottenham, there came a group of miscellaneous hardy cut flowers and plants: Shirley and Iceland Poppies were conspicuous, especially the former, and Gallardias, small-flowered Sunflowers, Chysanthemum maximum, C. leucanthemum, hybrid Primroses, Catananche corulea, and C. bicolor, large Kniphofias, and Lilies were also numerous. The following plants were observable:—Nerine excellens, rose, with a darker centre nerve to each segment, and of dwarf habit; Satyrium carneum, a good semi-double form of Harpalium rigidum, Aster Towsendi, with flowers about 1½ inch in diameter, disc yellow, rays rich violet, very pretty; Liliun Wallichianum, with segments of a pale cream-colour, darker at the base, a green nerve in the lower half of each segment, leaves linear. A white Scabious, called Snowball, and S. caucasica, represented by a large flowered plant, were good. A few Dahlias were also shown. Professor Baldwin, a flower like Juarezii, but of a true scarlet colour, and Lizzie Abbott, a double decorative variety, white, suffused with deep lilac towards the margins of the segments, were good. Single flowers were also contributed.

A large exhibit was made by Messrs. Paul & Son, Cheshunt, who staged a collection of Dahlias and hardy cut flowers. Numerous Asters (Michaelmas Daisies) were to be seen, and Helianthus multiflorus major, a very striking bright flower; Catananche corulea and C. bicolor, Asclepias tuberosa, Coreopsis lanceolata, Senecio pulcher, with various Phloxes and Delphiniums. Dahlias were, however, the chief portion of the firm's exhibit, and several boxes and stands of good flowers were shown. Of the decorative or Cactus varieties, Annie Harvey, Germania Nova, Lady E. Dyke, Henry Patrick, and Lady Kerrison were good exhibition and fancies: Champion Rollo, J. Huntley, W. H. Williams, Chorister, Sunbeam, and Gaiety; single flowers: Beauty of Uplands, Mrs. H. Whitfield, White Queen, and Canterbury Tales. Red Cockatoo, a bright red semi-double decorative; and Scarlet Macaw, similar, but scarlet, were distinct varieties.

A collection of very handsome Dahlia blooms was sent by Mr. J. T. West, gr. to W. Keith, Esq., Cornwalls, Brentwood. The flowers were large and in good form, chiefly show and fancy, with a few decorative. The best were:—R. F. Rawlings, Shirley Hibberd, Mrs. Gladstone, Harry Keith, G. Barnes, Queen of the Belgians, Henry Walton, Gaiety, and Lord Chelmsford. A capital collection was also sent by Messrs. Rawlings Bros., Romford, all even and clean blooms.

The Dahlia exhibits of Messrs. Keynes, Williams & Co., consisted of eight dozen blooms of show varieties of very fair quality. The best were Matthew Campbell, orange, irregularly striped with scarlet; Major Bartelot, of the same ground colour as the first-named, but profusely striped with scarlet. In miniature (pompon) Dahlias, likewise rather abundantly shown, the best varieties were Little Darkie, a dark chestnut-purple; Little Ethel, white, with a lilac centre; Whisper, canary-yellow, lightly tipped red; Eurydice, a pretty thing, light puce, with petals purple-tipped.

In decorative (hybrid Juarezii type) there were some distinct-looking flowers, but the only one considered to be worthy of distinction was Honoria, a canary-yellow flower.

Mr. C. Turner's Dahlias contained many superb flowers, as many as six new varieties from seed obtaining Certificates. These were, in pompon varieties:—Lothair, yellow, heavily tipped and bordered with bright scarlet; Admiration, purple, with white tips; Juliette, yellow, with an orange centre; Vivid Scarlet, very bright. In show varieties:—Hugo, a crimson; and Agnes, bright yellow, were the only certificated examples.

Mr. R. P. Jones, The Grove, Brill, Bucks, exhibited a small single variety of D. scabra The Fairie, purple-white, 1½ inch in diameter.

Messrs. Paul & Son, Old Nurseries, Cheshunt, showed a stand of seedling single-flowered and one of decorative Dahlias; Red Cockade was distinct in the former, and Queen of Lilacs in the latter, R. T. Rawlings, G. Rawlings, Queen of the Belgians, Rev. J. Goodday, Harry Keith, Prince of Denmark, Mrs. Rusby (decorative), Masterpiece (single), purple-lake with white tips.

Mr. G. Humphries, Kingston Langley, Chippenham, also showed good even Dahlia blooms—Christy Ridley, J. Huntley, R. T. Rawlings, Joseph Ashby,

Salamander, and Seraph were good show and fancy varieties; while of Cactus blooms Constantine, F. C. Henley, Mrs. Tait, W. Pearce, S. Holland, and Mrs. Hawkins were fine. J. Cooper, a new fancy flower, was white, suffused with lake, with numerous small spots of intense lake, and occasional blotches of the same.

Messrs. W. Paul & Son, Waltham Cross, contributed an extensive collection of cut Roses, which were very good at this late season of the year; Ulrich Brunner, The Bride, Alfred Colomb, Niphotos, Countess of Rosebery, Anna de Diesbach, Souvenir de la Malmaison, Gloire de Dijon, and other well known varieties were well represented. Cut bunches of red and white Lapageria were also sent.

G. F. Wilson, Esq., Weybridge, sent a few specimens of Lilies which had been flowered in the open at Oakwood.

A plant of Cynoches chlorochilon was sent by F. G. Tauts, Esq. (gr. Mr. Cowley). This species was the subject of an illustration in our issue for Feb. 4 last.

A box of Celosia spikes from Mr. S. Ford, Leonardlee Gardens, Horsham, was much admired; they were vigorous and brightly coloured. (Strain Commended.)

Pentstemons and a dwarf Carnation were shown by Mr. R. Dean, Ealing; and Messrs. J. Cheal & Son, Lowfield Nursery, Crawley, had their flower-holders, and a good new single Dahlia Lady Montefiore, sulphur, with a suffused lake margin.

FIRST-CLASS CERTIFICATES.

Nerine excellens, from Mr. T. S. Ware.
Liliun Wallichianum, from Mr. T. S. Ware.
Aster Towsendi, from Mr. T. S. Ware.
Harpalium rigidum semi-plenum, from Mr. T. S. Ware.
Canna Paul Best, from Messrs. H. Cannell & Sons.
Canna Geoffrey St. Hillaire, from Messrs. J. Veitch & Sons.
Ornamental Beet, McGregor's Favourite, from Mr. B. S. Williams.
Dahlia John Cooper, from Mr. Humphries.
Dahlia Maud Fellowes, from Mr. C. Turner.
Dahlia Hugo, from Mr. C. Turner.
Dahlia Agnes, from Mr. C. Turner.
Dahlia Juliette, from Mr. C. Turner.
Dahlia Admiration, from Mr. C. Turner.
Dahlia Vivid, from Mr. C. Turner.
Dahlia Lothair, from Mr. C. Turner.
Dahlia Panthea, from Messrs. Keynes, Williams & Co.
Dahlia Honoria, from Messrs. Keynes, Williams & Co.
Dahlia Matthew Campbell, from Messrs. Keynes, Williams & Co.
Dahlia Little Darkie, from Messrs. Keynes, Williams & Co.
Dahlia Eurydice, from Messrs. Keynes, Williams & Co.
Dahlia Little Ethel, from Messrs. Keynes, Williams & Co.
Dahlia Whisper, from Messrs. Keynes, Williams & Co.
Dahlia Lady Montefiore, from Messrs. J. Cheal & Sons.

MEDALS.

Silver-gilt Banksian.—To Mr. B. S. Williams, for group of Nepenthes.

Silver Banksian.—To Messrs. H. Cannell & Sons, for a collection of cut flowers; to Messrs. J. Veitch & Sons, for group of plants; to Messrs. Keynes, Williams & Co., for a collection of Dahlias; to Mr. T. S. Ware, for a collection of cut flowers; to Messrs. Paul & Son, for a collection of Dahlias; to Baron Schroder, for a group of Nerines.

Bronze Banksian.—To Mr. G. Humphries, for collection of Dahlias; to Messrs. W. Paul & Son for cut Roses; to J. F. West, Esq., for collection of Dahlias.

Fruit Committee.

Present: John Lee, Esq., in the chair; and Messrs. J. Smith, G. W. Cummins, J. Cheal, T. J. Saltmarsh, R. D. Blackmore, T. F. Rivers, W. Marshall, S. Ford, H. Weir, P. Crowley, P. Barr, and T. B. Haywood.

From the nurseries of Messrs. J. Veitch & Sons, Chelsea, there were twenty-six dishes of Plums, in distinct varieties, mostly of more than ordinary size, but conspicuous, as are most out-of-door fruits, by want of flavour. A small collection of culinary and dessert Apples was from the same firm, some of the fruits shown being of extraordinary size, especially

those of Lord Grosvenor, Red Quarrenden, Grenadier, Stirling Castle, and Niton House, a Scotch variety, of good appearance, and a very long keeper. A small collection of Pears for dessert were likewise shown. A Silver Banksian Medal was awarded.

One of the heaviest Queen Pines ever exhibited came from Mr. Richards, gr. to Lord Normanton, Somerley, Ringwood. The fruit was quite symmetrical and nearly ripe, weighing 7 lb 6½ oz. A Cultural Commendation was awarded.

Messrs. Hurst & Son, 152, Houndsditch, exhibited a massive looking Cucumber, a cross between Telegraph and Blue Gown.

Mr. W. P. Fairgrieve, Dunkeld Gardens, Dunkeld, N.B., sent a small collection of capital Plums, and a few Apricots and Peaches, but it arrived too late for the Committee. Of Plums, Pond's Seedling and Magnum Bonum, Jefferson, and Imperial Gage, were excellent and large; Pitmaston Orange Nectarine and Hale's Early, and Early Louise Peaches were also of good appearance, but small.

A few Melons were sent—one from Mr. C. J. Waite, Glenhurst Gardens, Esher, being excellent in flavour; the flesh was green, juicy, and tender.

W. Roupell, Esq., Roupell Park, S.W., showed an American Tomato, Canadian Peach, small and round, stated to be of a very sweet flavour.

CERTIFICATE.

Melon Glenhurst Perfection, from Mr. C. J. Waite.

MEDAL.

Silver Banksian.—To Messrs. J. Veitch & Sons, for a collection of fruit.

NORTH OF SCOTLAND HORTICULTURAL ASSOCIATION.

THE annual meeting of this Association was held in the Music Hall Buildings, Aberdeen, on Friday evening, the 21st inst., Mr. Cocker, President of the Association, in the chair.

The Chairman gave a short address, in which he regretted that they had not larger attendances at their meetings, and expressed the earnest hope that in the future a more extended interest would be manifested in the affairs of the Association. He particularly alluded to the advantage that would be derived by young men attending the meetings. Mr. Cocker was re-appointed President, Mr. Smith, Vice-President; and Mr. Reid, Secretary. Mr. Thomson was appointed Treasurer in room of Mr. Wyllie, who resigned. Members of committee were also appointed. It was arranged to hold meetings once in three weeks. The programme as submitted was approved. A vote of thanks to the Chairman closed the proceedings.

THE WEATHER.

MEAN TEMPERATURE OBSERVED AT CHISWICK DURING THE WEEK ENDING OCT. 6. (AVERAGE OF FORTY-FOUR YEARS.)

Sept. 30	55°·0	Oct. 4	54°·0
Oct. 1	54°·7	" 5	53°·7
" 2	54°·5	" 6	53°·4
" 3	54°·2	Mean for the week ...	54°·2

THE PAST WEEK.

The following summary record of the weather for the week ending Sept. 24, is furnished from the Meteorological Office:—

"The weather has continued fine and dry generally in all parts of the kingdom. Much fog and mist were, however, experienced in various localities and exceptionally heavy dews prevailed. At the end of the period the conditions were less settled, and rain fell at our more southern and extreme northern stations. In the extreme south some thunder and lightning occurred.

"The temperature has been rather above the mean in the 'Channel Islands,' the south and east of England, and in the north and east of Scotland, but a little below it in most other districts. The highest of the maxima, which were recorded on somewhat irregular dates, ranged from 66° in 'Ireland, N.' to 72° in 'England, E.' 'England, S.' and the 'Midland Counties,' and 75° in 'Scotland, N.' The lowest of the minima, which were also registered

at varying times, ranged from 32° in 'England, S.W.' to 44° in 'England, E., and 'England, S.' and to 52° in the 'Channel Islands.' On most days the range of temperature was unusually large, especially over Scotland.

"The rainfall has been much less than the mean in all districts. At many stations measurable quantities of dew were collected in the gauge.

"Bright sunshine has varied considerably in different localities; but on the whole it has been less prevalent than it was last week. The percentage of the possible amount of duration ranged from 18 to 55 in Scotland, from 26 to 39 in Ireland, and from 28 to 51 in England. In the 'Channel Islands' the percentage was 67."

[Accumulated temperature indicates the combined amount and duration of the excess or defect of temperature above or below 32° F. for the period named, and is expressed in Day-degree—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.				
	Above or below the Mean for the week ending Sept. 24.	ACCUMULATED.			
		Above 42° for the Week.	Below 42° for the Week.	Above 42° difference from Mean since Jan. 3, 1888.	Below 42° difference from Mean since Jan. 3, 1888.
Principal Wheat-producing Districts.		Day-deg.	Day-deg.	Day-deg.	Day-deg.
0. SCOTLAND, N. ...	3 above	78	0	-217	+201
1. SCOTLAND, E. ...	2 above	76	0	-424	+157
2. ENGLAND, N.E. ...	2 below	64	0	-473	+73
3. ENGLAND, E. ...	1 above	104	0	-361	+154
4. MIDLAND COS. ...	1 below	83	0	-453	+149
5. ENGLAND, S. ...	2 above	111	0	-468	+204
Principal Grazing, &c., Districts.					
6. SCOTLAND, W. ...	1 below	71	0	-336	+107
7. ENGLAND, N.W. ...	1 below	82	0	-360	+117
8. ENGLAND, S.W. ...	0 (aver.)	95	0	-467	+254
9. IRELAND, N. ...	0 (aver.)	77	0	-279	+67
10. IRELAND, S. ...	3 below	73	0	-286	+113
— CHANNEL ISLANDS	1 above	124	0	-331	+154

DISTRICTS.	RAINFALL.			BRIGHT SUNSHINE.	
	More or less than the Mean for the Week.	No. of Rainy Days since Jan. 3, 1888.	Total Fall since Jan. 3, 1888.	Percentage of possible Duration for the Week.	Percentage of possible Duration since Jan. 3, 1888.
Principal Wheat-producing Districts.	Tenths of Inch.		Ins.		
0. SCOTLAND, N. ...	7 less	170	27.1	18	29
1. SCOTLAND, E. ...	7 less	148	20.9	55	31
2. ENGLAND, N.E. ...	6 less	138	19.8	46	27
3. ENGLAND, E. ...	5 less	143	18.9	47	29
4. MIDLAND COS. ...	4 less	129	18.6	28	28
5. ENGLAND, S. ...	6 less	130	19.3	51	29
Principal Grazing, &c., Districts.					
6. SCOTLAND, W. ...	9 less	139	29.5	33	32
7. ENGLAND, N.W. ...	9 less	140	20.7	46	29
8. ENGLAND, S.W. ...	11 less	142	24.3	49	35
9. IRELAND, N. ...	8 less	147	26.1	26	28
10. IRELAND, S. ...	9 less	131	25.9	39	34
— CHANNEL ISLANDS	9 less	155	20.7	67	41

ANEMONE JAPONICA ALBA, HONORINE JOBERT.—This is well said to be one of the most beautiful ornaments a garden can possess during the autumn. A fine bit of it may be seen in full flower at the present time at the Royal Horticultural Society's Gardens, Chiswick. Those in search of a subject that will produce a long succession of flowers, should not fail to add this Anemone to their collection. B.

ENQUIRIES.

"He that questioneth much shall learn much."—BACON.

TREES FOR SANDHILLS.—What kind of forest or ornamental trees will best grow upon the sandhills which extend along portions of the north-west coast of England, and are composed entirely of the sea-sand blown up from the shore by the prevailing west winds, and will any kind of tree grow in it without first enriching it (the soil) with manure or other soil? What is the best treatment to give the sand to make it fit for gardening purposes generally, and what fruit or vegetables is it best adapted for? *Doubtful.*

NOTICES TO CORRESPONDENTS.

BOOKS—BUDDING AND GRAFTING OF FRUIT TREES: J. R. The work by Du Breuil is one of the best; Lockwood & Co., Stationers' Hall Court, Ludgate Hill, London. Bait's *Art of Grafting*, Robinson, 37, Southampton Street, Strand.



FIG. 50.—PINE BEETLE.



FIG. 51.—PINE SAWFLY.

CORRECTION.—In article entitled "Ardgowan," p. 332, first line of col. c, for "present Baronet," read "present Baronet's mother." W. S.

DISEASED BULBS: *Puzzled.* They were badly infested with the bulb mite, and the parts worst decayed with a species of yeast-fungus. In the state in which the bulbs sent were, there is no remedy for them. Burn them and the soil in which they grew. See a note on diseased Eucharis in our issue for September 8 last, p. 274.

EXHIBITING: *Reader.* In the case represented we think the judges were right in disqualifying your exhibits, the larger number of things shown being salad plants and fruits, and not "vegetables," in a culinary sense.

FICUS REPENS: *Young Gardener.* This is an accommodating plant, growing well either in a cool or warm temperature; indeed, it takes several degrees of frost to destroy it when well established. It grows with the most vigour in a moist hothouse.

FUNGUS: *N. N.* It was probably *Phallus impudicus*. It can be got rid of by digging up the soil and extracting the spawn. Manuring and cultivation are inimical to its growth. If there are no plants to injure, you might water the soil with strong brine made hot before applying it.

FUNGUS ON GRAVEL PATH: *P. B.* An Agaric; too young to be named.

FUNGUS ON SENECIO PULCHER: *X.* *Coleosporium senecionis*.

GRUB: *W. S., Melton.* The caterpillar of the death-head moth (*Sphinx atropos*). Destructive to Potatoes, &c.; generally feeds at night.

LAVENDER: *Admiral Cator.* Loamy soils of medium texture, and easily worked. Plants could be obtained from Mr. Perks, of Hitchin, a large grower; or of the growers at Mitcham, Surrey. Cuttings (slips) could be put in well prepared beds next month, and after remaining there for one year may be set out. The number required for 1 acre is about 3547, at 1 yard apart, and 4 feet between the rows.

MELON PEAR, OR PEPINO: *F. G. C.* It is not hardy in this country; and is of very little value as an edible fruit.

NAMES OF PLANTS: *W. M. C.* *Ophiopogon Jaburan variegatus*; *A. C. H.* *Trifolium arvense*.—*B. P.* 1, *Atriplex hortensis* var. *sanguinea*; 2, *Tanacetum vulgare*; 3, *Datura Stramonium* (poisonous); 4, *Lupinus polyphyllus*; 5, *Helianthus decapetalus*; 6, *Oenothera* (*Godetia*) *Duchess of Albany*.—*C. E.* 1, *Hieracium aurantiacum*; 2, *Doronicum austriacum*; 3, *Veronica longifolia*; 4, *Spiraea filipendula*; 5, *Lychnis chalcidonica*; 6, *Trollius europaeus*; 7, *Achillea Ptarmica*, fl.-pl.; 8, *Oenothera linearis*; 9, *Pentstemon gentianoides*.—*J. M. G.* 1, *Ceanothus azureus*; 2, *Reineckia carnea*; 3, *Cineraria maritima*; 4, *Aspidium falcatum*.—*H. J. Ross.* *Epidendrum chondrophyllum*.—*H. S.* *Veronica*: a seedling form of *V. Andersoni*.—*L. C. H.* 1, *Helianthus atrorubens*; 2, *Gaillardia pulchella*; 3, *Helenium autumnale*; 5, *Mesembryanthemum* sp.; 6, *Senecio (Jacobaea) purpurea*.—*J. C.* *Lilium longiflorum*; *Pleroma macranthum*.—*W. F.* 1, *Pteris tremula*; 2, *Muhlenbeckia confusa*; 3, *Pittosporum undulatum*; 4, *Hydrangea Thunbergii*; 5, *Adiantum Capillus-veneris*; 6, *Zephyranthes minima*.

NECTARINES SHRIVELLING: *A. J. A.* The immature fruits shrivel from deficiency of vigour in the trees, or from exhaustion due to over-cropping. Examine the borders, and water them thoroughly if found to be dry, manuring with bone-meal; or taking the old soil away, if very poor, replacing it with fibry loam which has been stacked one year, and an eighth of nearly fresh horse-droppings. Stem-scorching by sun-heat will often paralyse the energies of a tree, and that may readily have happened in the last and preceding years.

PELARGONIUM AT THE ZOOLOGICAL GARDENS: *Alexander.* We do not know. You should apply to the Superintendent at the gardens.

PINE PESTS: *D.* We suspect from your description that the culprit is the grub of the Pine Beetle, or, perhaps, the Pine Sawfly. We give illustrations (figs. 50 and 51) of both. Burn all rubbish that falls from the tree as far as possible.

POTATOS: *Frythe.* The tubers furnish a good example of what is known as supertuberation, of course at the expense of the stores in the parent tuber. The tubers on the haulm are generally the consequence of some injury to the underground portion from wireworm, slugs, or other cause. They show very clearly that the tuber is only a modified branch, or shoot.

SILVERING LIQUID: *F. J. C.* Apply to any large chemist.

TABERNEMONTANA LEAVES: *Lee.* The leaves are covered with little pimples, analogous to warts on Vines, which are the result of too little ventilation in proportion to the heat.

CATALOGUES RECEIVED.

A. ROBINSON, 8, Leadenhall Street, London, E.C.—Flowering Bulbs.

MESSRS. R. VEITCH & SON, Royal Nurseries, Exeter—Dutch Bulbs, and other Flower Roots.

MM. ROBICHON-LOYER ET FILS, Route d'Olivet 7 and 9, Olivet, near Orleans, Loire—Azalea indica and Roses.

W. SAMSON & Co., and W. and T. SAMSON & Co.,
8 and 10, Portland Street, Kilmarnock, N.B.—
Dutch Flower Roots, Roses, Trees and Shrubs,
Stove and Greenhouse Plants, &c.
T. BUTCHER, Station Road, South Norwood, Surrey
—Dutch Bulbs, &c.
MESSRS. E. H. KRELAG & SON, Kleinen Houtweg,
Haarlem—Miscellaneous Bulbs and Tubers,
Dutch Flower Bulbs.
MESSRS. DOBBIE & Co., Rothesay, N.B.—Dutch
Bulbs, Narcissus, and Roses.
W. WATT, Cupar-Fife, and 26, High Street, Perth—
Dutch Flower Roots.
W. DRUMMOND & SONS, Stirling, N.B.—Bulbs and
Flower Roots.
WM. RUMSEY, Joyning's Nursery, Waltham Cross, N.
—Roses.
WM. BAYLOR HARTLAND, 24, Patrick Street, Cork,
Ireland—Abridged List of Dutch and Cape
Bulbs.
EDMONDSON BROS., 10, Dame Street, Dublin, Ireland
—Bulbs and Herbaceous Plants.
T. S. WARE, Hale Farm Nurseries, Tottenham—
Daffodils and Lilies; A. B. C. Bulb Guide.
A. M. C. JONGKINDT-COINCK, Tottenham Nurseries,
Dedensvaart, near Zwolle, Holland—Wholesale
List of Trees and Shrubs, &c.
J. CHEAL & SONS, Lowfield Nursery, Crawley, Sussex
—Trees, Roses, Fruit Trees, &c.
ISAAC DAVIES & SON, Brook Lane Nursery, Ormskirk,
Lancashire—Rhododendrons and Azaleas.

COMMUNICATIONS RECEIVED.—W. B.—H. A. G.—Mrs. Wil-
kinson.—W. S.—S. A.—W. S. B.—H. C.—F. A.—J. S.—
G. W.—R. D.—M. Lemoine.—B. S. W.—C. E.—W. C.—
W. B.—N. N.—H. W. W.

Correspondents sending plants or fruits to be named, or
asking questions demanding time and research for their solution,
must not expect to obtain an answer to their enquiries in the
current week.

MARKETS.

COVENT GARDEN, September 27.

TRADE, generally speaking, as last week. James
Webber, Wholesale Apple Market.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Aralia Sieboldi, doz.	6 0-18 0	Foliage plants, vari-	
Asters, per dozen	3 0-6 0	ous, each	2 0-10 0
Balsams, per doz.	2 0-4 0	Ficus elastica, each	1 6-7 0
Chrysanthemums, doz.	4 0-9 0	Fuchsias, doz.	3 0-6 0
Cockscombs, per doz.	3 0-6 0	Heliotropes, dozen	3 0-6 0
Coleus, dozen	2 0-4 0	Hydrangeas, dozen	9 0-18 0
Cyperus, per dozen	4 0-12 0	Liliums, var., doz.	18 0-30 0
Dracena terminalis,		Marguerites, doz.	6 0-12 0
per dozen	30 0-60 0	Mignonette, 12 pots	3 0-6 0
—viridis, per doz.	12 0-24 0	Palms in var., each	2 6-21 0
Euonymus, in var.,		Pelargoniums, doz.	6 0-12 0
per dozen	6 0-18 0	—scarlet, dozen	2 0-6 0
Evergreens, in var.,		Scented Verbenas,	
per dozen	6 0-24 0	per dozen	4 0-6 0
Ferns, in var., doz.	4 0-18 0	Solanums, dozen	9 0-15 0
		Verbenas, per doz.	4 0-6 0

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Asters, 12 bunches	1 6-4 0	Marguerites, 12 bun.	3 0-6 0
—French, per bun.	1 0-1 6	Mignonette, 12 bun.	1 0-2 0
Bouvardias, per bun.	0 6-1 0	Pansies, 12 bun.	1 0-2 0
Carnations, 12 blms.	1 0-2 0	Pelargoniums, 12 spr.	0 6-1 0
—dozen bunches	4 0-6 0	—scarlet, 12 spr.	0 3-0 6
Chrysanthemums,		Pinks, 12 bun.	3 0-6 0
12 blooms	0 6-3 0	Poppies, 12 bun.	4 0-6 0
—dozen bunches	1 0-3 0	Primulas, double, 12	0 9-1 0
Dahlia, doz. bunches	3 0-6 0	—sprays	0 9-1 0
Forget-me-nots, 12		Pyrethrums, 12 bun.	2 0-4 0
bunches	2 0-4 0	Roses, doz. bun.	3 0-9 0
Gardenias, 12 blooms	1 6-4 0	—coloured, dozen	2 0-4 0
Gladiolus, doz. sprays	0 6-1 6	—red, per dozen	0 6-1 0
Heliotropes, 12 spr.	0 6-1 0	—12 bunches	2 0-6 0
Lavender, 12 bun.	3 0-4 6	—Safrano, dozen	0 6-0 9
Lilium longiflorum,		Stephanotis, 12 spr.	3 0-4 0
12 blooms	3 0-5 0	Sweet Peas, 12 bun.	2 0-4 0
—lanceifolium, 12 bl.	1 0-3 0	Sweet Sultan, 12 bun.	2 0-4 0
Lapageria, 12 blooms	1 0-2 0	Tuberose, 12 blms.	0 4-0 9

VEGETABLES.—AVERAGE RETAIL PRICES.

	s. d. s. d.		s. d. s. d.
Artichokes, p. doz.	4 0-...	Mustard and Cress,	
Beans, kidney, lb.	0 4-...	punnet	0 4-...
Beet, red, per dozen	1 0-2 0	Onions, per bunch	0 5-...
Carrots, per bunch	0 6-...	Parsley, per bunch	0 4-...
Cauliflowers, each	0 3-...	Potatoes, per cwt.	4 0-5 0
Celery, per bundle	1 6-2 0	—kidney, per cwt.	4 0-5 0
Cucumbers, each	0 6-0 9	Shallots, per lb.	0 6-...
Endive, per dozen	2 0-...	Spinach, per bushel	3 0-...
Green Mint, bunch	0 4-...	Tomatoes, per lb.	0 9-1 0
Herbs, per bunch	0 4-...	Turnips, per bunch,	
Leeks, per bunch	0 4-...	new	0 5-...
Lettuce, per dozen	1 6-...	Veget. Marrows, each	0 1½-...
Mushrooms, punnet	1 6-2 6		

POTATOES.—English Myatt's, 80s. to 90s.; Beauty of Hebron,
60s. to 80s.; and Regents, 100s. per ton.

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Apples, half-sieve	2 0-4 6	Peaches, dozen	2 0-6 0
Cobs, 100 lb.	65 0-70 0	Pine-apples, Eng., lb.	2 0-3 0
Grapes, per lb.	0 6-2 0	Plums, half-sieve	2 6-4 6
Lemons, per case	12 0-21 0	—St. Michael, each	2 0-5 0
Melons, each	1 0-3 0		

SEEDS.

LONDON: Sept. 26.—Messrs. John Shaw & Sons,
seed merchants, of 37, Mark Lane, E.C., write
that the chief feature of the last few days' trade has
been a strong speculative demand for Alsike and
White Clover-seed, under which a substantial
advance has been established. Red Clover seed
keeps firm. It now looks as if the English crop
would be a complete failure. Extreme figures are
obtained for Trefoil. Italian and perennial Ryegrasses
unchanged. Winter Tares are steadier:
supply about meets the demand. Trifolium realises
former rates. Canary seed tends upwards. There is
no alternation in Hemp seed. Blue Peas are in good
request at improving rates.

CORN.

Averages.—Official statement showing the average
price of British corn, imperial measure, in the week
ended September 22:—Wheat, 34s. 11d.; Barley,
32s. 5d.; Oats, 17s. 2d. For the corresponding
week in 1887:—Wheat, 29s. 9d.; Barley, 23s.;
Oats, 14s. 11d.

FRUIT AND VEGETABLES.

SPITALFIELDS: Sept. 26.—Trade continues some-
what dull for very fair supplies of fruit and vege-
tables generally, at following quotations:—Apples,
3s. to 5s. 6d. per bushel; do., 1s. 6d. to 2s. 9d. per
half-bushel; Damsons, 3s. 3d. to 3s. 6d. per half
sieve; English Green Gages, 7s. to 8s. per bushel;
Pears, 3s. to 5s. do.; English Plums, 2s. to 3s. 6d.
per half-sieve; English Tomatoes, 5s. to 8s. per peck;
foreign do., 3s. to 4s. 6d. per box of 18 lb.; foreign
Plums, 1s. 3d. to 2s. 3d. per basket; Vegetable
Marrows, 1s. 6d. to 2s. 6d. per tally; Cabbages, 1s. to
2s. do.; Cauliflowers, 9d. to 1s. 3d. per dozen; French
Beans, 1s. 6d. to 1s. 9d. per bushel; Scarlet Runners,
9d. to 1s. 3d. do.; foreign Onions (Belgian), 2s. 3d.
to 2s. 6d. per bag of 110 lb.; Dutch Onions, 3s. to
3s. 3d. per bag; Turnips, 2s. to 2s. 6d. per dozen
bunches; Carrots, 1s. 3d. to 1s. 6d. do.; Beetroots,
1s. 3d. to 1s. 6d. do.; Mint, 1s. 3d. to 2s. 6d. do.;
Parsley, 1s. to 1s. 6d. do.; pickling Onions, 3s. 6d. to
4s. per bag; common do., 4d. to 6d. per dozen bunches;
Endive, 1s. 6d. per dozen; Cos Lettuce, 5d. to 8d.
per score; Carrots, 2s. to 3s. per ton.

STRATFORD: Sept. 25. Both trade and supply
have been good during the past week. Prices:—
Cabbages, 2s. to 3s. per tally; Cauliflowers, 2s.
do.; Turnips, 2s. per dozen bunches; do., 30s.
to 35s. per ton; Carrots, household, 30s. to 40s.
do.; Mangels, 16s. to 20s. do.; Swedes, 18s. to 20s.
do.; Pears, 2s. 6d. to 5s. per bushel; Apples, 3s. 6d.
to 5s. do.; do., 6s. to 6s. 6d. per case; Plums, 3s.
to 3s. 6d. per half-bushel; Carrots, 2s. per dozen
bunches; Celery, 10d. to 1s. per roll; Beetroot, 3s.
per dozen.

POTATOES.

BOROUGH AND SPITALFIELDS: Sept. 25.—With only
moderate supplies prices are firm for best samples,
but all other grades show no improvement:—Regents,
50s. to 90s.; Hebrons, 50s. to 90s.; Early
Roses, 50s. to 80s.; Magnum Bonums, 50s. to 90s.;
Myatts, 45s. to 60s. per ton.

SPITALFIELDS: Sept. 26.—Quotations:—Beauty of
Hebron, 60s. to 70s.; English Regents, 69s. to 75s.;
do. kidneys, 65s. to 75s.; Early Rose, 50s. to 60s.;
Imperators, 60s. to 65s.; and Magnums, 50s. to 60s.
per ton.

STRATFORD: Sept. 25.—Quotations:—Magnums,
50s. to 60s.; Beauty of Hebron, 40s. to 70s.; Early
Rose, 50s. to 60s.; Imperators, 55s. to 70s. per ton.

Imports.—The imports into London last week
consisted of 8 bags from Hamburg.

HAY.

Averages.—The following are the averages of the
prices obtained at the various metropolitan markets
during the past week:—Clover, prime, 90s. to
140s.; seconds, 100s. to 126s.; inferior, 40s. to 80s.;
hay, prime, 90s. to 132s.; seconds, 90s. to 115s.;
inferior, 40s. to 60s.; and straw, 30s. to 48s. per
load.

BEESON'S MANURE.—The Best and
Cheapest Fertiliser for all purposes. Write for Circular
containing the Leading Gardeners' and Market Growers'
Reports. Sold in Tins, 1s., 2s. 6d., 5s. 6d., and 10s. 6d. each,
or 1 cwt. Bags, sealed, 13s. By all Seedsmen, or apply direct to
W. H. BEESON, Carbrook Bone Mills, Sheffield.

SULPHIDE OF POTASSIUM (Harris).—A
certain cure for Mildew on Plants, Red Spider, Aphids,
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The only kind to use is "Harris's specially prepared Sulphide
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Two Prize Medals.
Quality, THE BEST in the Market. (All sacks included.)
PEAT, best brown fibrous ... 5s. per sack, 5 sacks for 22s. 6d.
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PEAT, extra selected Orchid ... 7s. 6d. ... 5 sacks for 35s.
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LEAF, or PEAT MOULD ... (sacks included).
SILVER SAND, coarse, 1s. 6d. per bush, 14s. half-ton, 24s. ton.
RAFFIA FIERE, best only ... 1s. per lb.
TOBACCO CLOTH, or PAPER ... 1s. lb.; 28 lb., 27s.
SPHAGNUM MOSS, all selected, 3s. per bush, 8s. per sack.
CHUBB'S "PERFECT" FER-
TILIZER (the Best Food for
all kinds of Plants, Flowers,
Fruits, Vegetables, &c. ... 1/6 3/- 5/- 8/- 14/- 22/-
CRUSHED BONES, or Bone Dust 1/2 3/- 6/- 12/-
VIRGIN CORK (Best Quality only) ... 3/- 5/- 10/- 17/-
RUSSIAN MATS, BAMBOO CANES, PERUVIAN GUANO,
NITRATE OF SODA, HORTICULTURAL CHARCOAL, &c.
PEAT MOSS LITTER, cheapest and best Bedding for Horses and
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COCO-NUT FIBRE REFUSE (by Chubb's special process),
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30 sacks, 25s.; 40 sacks, 30s.; Truck-load, loose, free on rail,
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PERFECTLY } to the Hands and Skin, but will cure
HARMLESS } Ringworm in Animals, and all diseases
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A combination of Hydrocarbon Oils, made soluble in
Water, for destroying ALL INSECTS & PARASITES
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Sold by Seedsmen and Chemists, 1s. 6d., 2s. 6d., & 4s. 6d.;
½ gallon 7s. 6d., 1 gallon 12s. 6d., or less in larger quantities.
A Treatise on FIR TREE OIL as an INSECTICIDE,
its application to Plants and Animals, sent Post free
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Important Notice.

FIR TREE OIL so well-known as an Insecticide, is
effective for washing household Cotton, Linen, and
Woolen Fabrics, and its disinfecting, bleaching,
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purposes, will, after the first trial, recommend itself.

No Dry Soap or any such preparations must be used
with Fir Tree Oil.

Half a wineglass-full of Fir Tree Oil to 10 gallons of
water for steeping, and the same quantity to an ordinary
size boiler for boiling, with half the usual quantity of
household soap, will do the work splendidly, and with
half the trouble.

For washing Dogs, Pigs, and other animals, half a
wineglass-full to a bucket of water, and used with ordi-
nary soap, will do better than any of the prepared soaps
for killing fleas, preserving the skin healthy, and making
the coat silky and very beautiful. One trial will be
conclusive.

P.S.—Paraffin Oil will mix with Fir Tree Oil in propor-
tion of a quarter of a pint of the former to a pint of the
latter, and become soluble in water.

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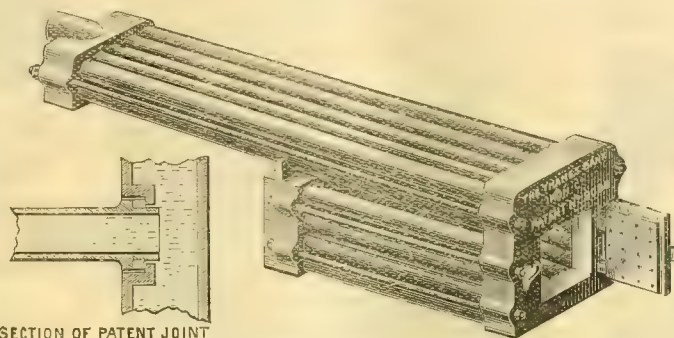
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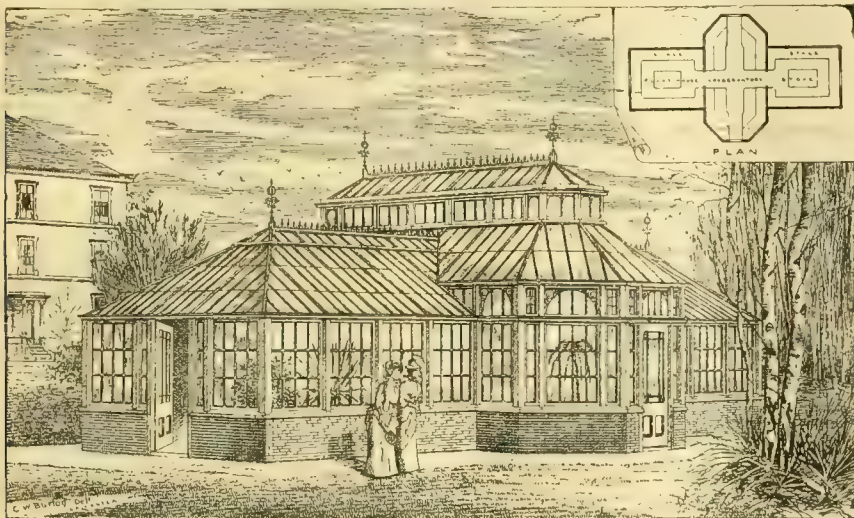
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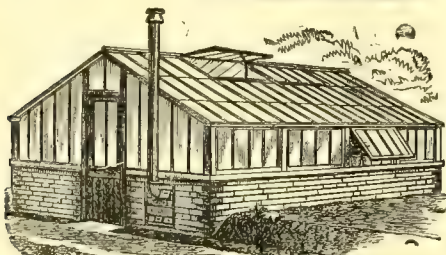
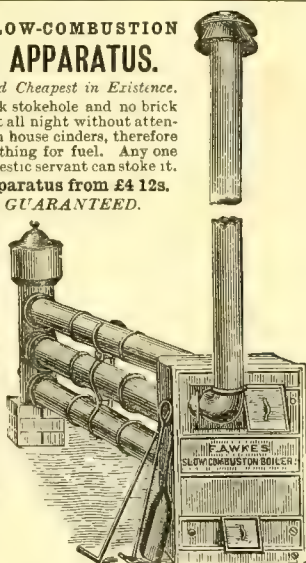
Most Efficient and Cheapest in Existence. Requires no sunk stovehole and no brick setting. Will last all night without attention. Will burn house cinders, therefore costs next to nothing for fuel. Any one can fix it. A domestic servant can stoke it.

Complete Apparatus from £4 12s.
SUCCESS GUARANTEED.

Enormous numbers in use all over the country. Only Slow-Combustion Apparatus of the kind.

CAUTION. Beware of inefficient incomplete Apparatus, which will not last all night.

Full particulars and Prices of every sized Apparatus, and numerous Testimonials for last five seasons, showing enormous success, post-free on application.



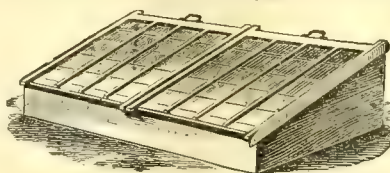
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2-LIGHT MELON AND CUCUMBER FRAMES



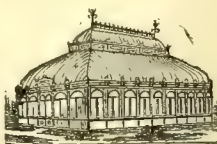
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Made of the best red deal, English 21-oz. glass, painted 3 coats best colour.

3-LIGHTS, 12 by 6 feet, £4 5s.

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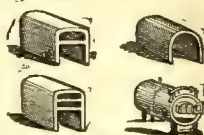
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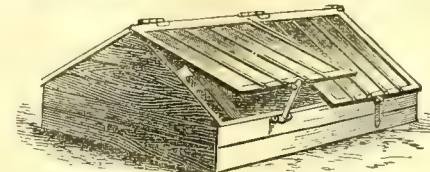
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6 feet long, 4 feet wide, packing cases free	£2 15 0
12 feet long, 4 feet wide, " " "	4 15 0
6 feet long, 5 feet wide, " " "	3 15 0
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The glass is nailed and puttied in.

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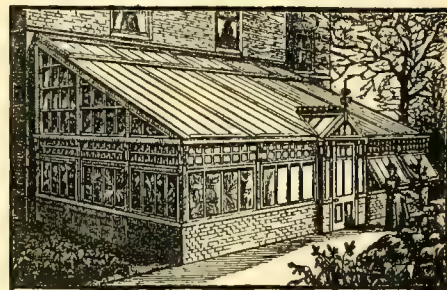
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
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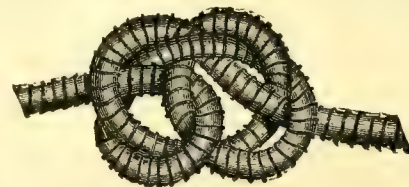
	STOCK		SIZES	
	Inches.		Inches.	
	14x12		20x15	
	16x12		20x16	
	18x12		22x16	
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	18x14		20x18	
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The Original and Only Genuine Sphincter Grip
Armoured Hose,

APPLY TO THE

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GLASS.—CHEAP GLASS.

8s. 6d. per 100 feet 15 oz. 12x10, 18x12, 18x14, 24x14, 14x12, 20x12, 18x16, 24x16, 12s. per 100 feet 21 oz. 18x12, 18x14, 20x18, 24x18, &c. Putty, 6s. 6d. per cwt.; White Lead, genuine, 21s.; Our Speciality, 17s. 6d. per cwt.; Paints ground in Oil, Stone Ochre, 20s.; Oxford Ochre, 24s.; Green, 16s.; Black, 16s. per cwt.; Varnish, from 5s. 6d. per gal.—Full Price List on application to **THE CHEAP WOOD COMPANY, 95, Bishopsgate Street Within, London, E.C.**



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HORTICULTURAL ENGINEERS to HER MAJESTY THE QUEEN, call Special Attention to their Patent Wrought-Iron Municipal or Angular Chambered and Tubular

HOT-WATER BOILERS,

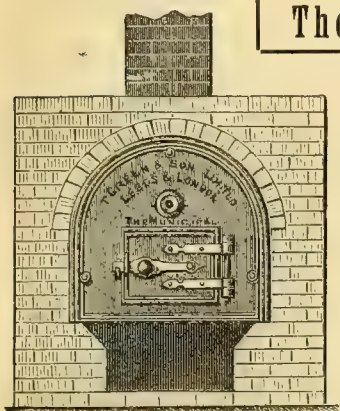
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SADDLE BOILERS, With WATERWAY BACKS and WELDED BOILERS, any of which are specially adapted for Heating Greenhouses, Conservatories, Churches, Chapels, Schools, Public Buildings, Entrance Halls, Warehouses, Workshops, &c. They are the neatest, cheapest, most effective, and durable of any extant.

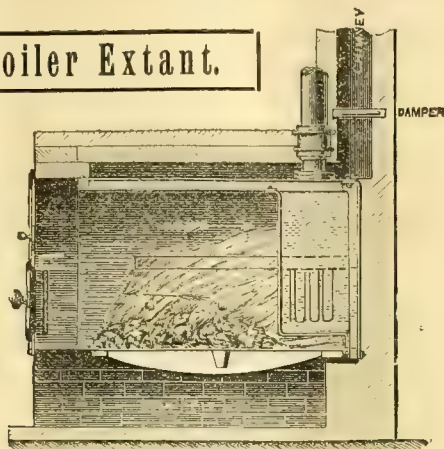
The MUNICIPAL and TUBULAR ones are remarkable for their great heating power, slow combustion, and the length of time the fire will burn without requiring attention.

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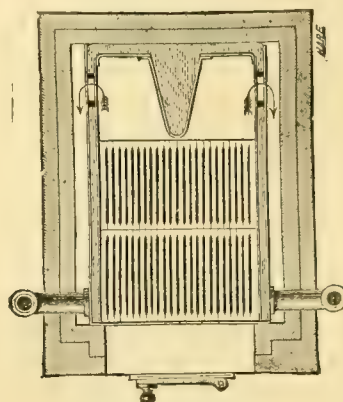
The Best Boiler Extant.



— FRONT ELEVATION —



— LONGITUDINAL SECTION —



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The longitudinal section gives a view of the fire-box, water space, flues, &c.

The front elevation shows it set in brickwork, which is necessary for this class of boiler.

The cross section gives a view of the fire-box, water space and V-shaped back.

SIZES AND PRICES.

	3 ft. 2 in. long	by 2 ft. 0 in. wide	by 2 ft. 0 in. deep		1000 ft.	Price £15 0 0
M B 1	4 0	by 2 0	by 2 0	Calculated to heat 4-in. piping as follows:—	1280	21 0 0
M B 2	5 0	by 2 3	by 2 6		2200	32 0 0
M B 3	6 6	by 3 0	by 3 0		4000	60 0 0
M B 4	8 6	by 4 0	by 3 9		7000	85 0 0
M B 5						

TESTIMONIALS.

MESSRS. THOS. GREEN AND SON, LTD., NORTH STREET, LEEDS.

Re HEATING APPARATUS.

Borough Engineer's Office, Municipal Buildings, Leeds, January 9, 1886.

GENTLEMEN,—I have great pleasure in bearing testimony to the efficiency and satisfactory working of the Hot-water Heating Apparatus you erected in these public buildings. The buildings are four storeys high, and we have a total length of about 28,000 feet of piping in them, varying in size from 1½ in. to 6 in. diameter, with their connections, &c. The several offices and rooms can all be in operation at one time or separately, and the heat regulated by means of the valves to the temperature required, even in the coldest weather.

Two of your Patent Municipal Pattern Boilers, No. 4, work the whole of this piping easily, although we have three of them fixed. They are very powerful and economical in the consumption of fuel, and I am pleased to be able to report of them and the apparatus so favourably.

I am, Gentlemen, yours truly,

THOS. HEWSON, Borough Engineer.

GENTLEMEN,—The large Municipal Boiler which you sent me last year is doing its work satisfactorily; it is heating 5,000 feet of 4-inch pipe in one of my vineries, and I am quite sure that it has power to work a much greater length, while in cost of fuel it compares favourably with my other Boilers.

I have now five of your Boilers in use, and I cannot speak too well of their heating powers, or their comparatively small consumption of fuel.

Yours faithfully,

(Signed)

G. W. BASHFORD.

AND HUNDREDS OF OTHER REFERENCES CAN BE GIVEN IF REQUIRED.

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FROM

To

W. RICHARDS,

41, WELLINGTON STREET, STRAND,

LONDON, W.C.

1888.

Please send me "THE GARDENERS' CHRONICLE" for _____ Months, commencing _____, for which I enclose P.O.O. _____.

Please Note that all Copies Sent Direct from this Office must be paid for in advance.

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G. C.
Sept 29, 1888.

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Accidents all the Year Round.

Provide against them by Policy of the
RAILWAY PASSENGERS' ASSURANCE
COMPANY, 64, Cornhill, London, E.C.
Hon. EVELYN ASHLEY, Chairman.

Annual Income, £248,000.

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A Descriptive Account of Hardy Coniferous Trees Cultivated in Great Britain. Dedicated, by command, to the illustrious memory of H.R.H. the Prince Consort. Illustrated with Maps, Photographs, Fac-similes of the Original Water-colour Drawings, made expressly for the work, and 643 Engravings on Wood. Edited, with the assistance of Robert Brown, Dr. Lindley, Dr. Maxwell T. Masters, Messrs. Peter Lawson & Son, by EDWARD RAVENSCROFT. Three vols., royal folio, with fifty-three large Coloured Plates and 643 Woodcuts (subscription price £7 6s. unbound), now offered at a reduced price, plain plates, hf. bd., £10 10s; or, coloured plates, hf. bd., olive morocco, £21.

At length we are enabled to congratulate Conifer lovers, subscribers, authors, and publisher, upon the completion of the *Pinetum Britannicum*. The work is one of great magnitude and beauty, and one that has involved labour and pecuniary outlay, it is to be feared, beyond hope of recompense. In the preface Mr. Ravenscroft, the enterprising and chivalrous publisher and part author, tells the story of the book—how it grew out of a small catalogue *raisonné* prepared for Messrs. Peter Lawson & Son. As a considerable amount of materials had accumulated, the larger work, with its large-sized coloured plates, was undertaken. Messrs. Lawson lent substantial aid by taking 100 copies; the Emperor Napoleon distributed thirty copies among the Schools of Agriculture and Forestry in France, and royal patronage was not wanting in our own country. Such aids, however, were not sufficient to secure the uninterrupted progress of the work. The firm of Peter Lawson & Son met with misfortune, the French Empire underwent still greater disaster, and, as a consequence, the publication of the work was necessarily for a time suspended. In order, however, to keep faith with the remaining subscribers, Mr. Ravenscroft lately resumed the publication, and has now, as we have seen, brought it to a close, thus fulfilling all his obligations to his subscribers, if not fulfilling the whole of the ambitious programme with which he set out.

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SMOKELESS ANTHRACITE.—For information as to the mode of using this coal, and prices delivered to any railway station, apply to the TRIMSARAN CO. (Limited), 62, Leadenhall Street, London, E.C.

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OUR SHOW ROOMS

are now fully furnished with every novelty in

DRIED FLOWERS, GRASSES,

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GENERAL SUNDRIES

Required for the Autumn and Winter Season.

Early inspection especially solicited.

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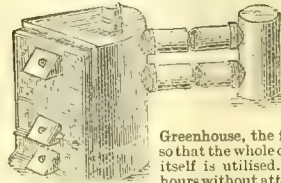
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HOT-WATER APPARATUS.



This is the simplest, cheapest, and most powerful apparatus made. It requires no brick setting, no stoke-hole, and no hot-water filter for fixing. The Boiler stands in the

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Estimates and Illustrated Lists Free.

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WANTED, a NURSERY PROPAGATOR—a rising young man, who has been in a Country Nursery, and can grow and propagate two things—Clematis and Rhododendrons. He must start at a moderate wage, and he will be under close supervision until he proves his capability and reliability.—CHARLES NOBLE, Bagshot.

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WANTED, Two Youths as APPRENTICES (about 16), where Fruit and Tomatoes are extensively Grown under Glass. Both and vegetables found. State wages.—F. KENT, Market Gardener, Lambley, Nottingham.

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B. S. WILLIAMS begs to intimate that he has at present in the Nursery and upon his Register some excellent Men, competent either to fill the situation of HEAD GARDENER, BAILIFF, FOREMAN, or JOURNEYMAN. Ladies and Gentlemen requiring any of the above will please send full particulars, when the best selections for the different capacities will be made.—Holloway, N.

Gardeners, Farm-Bailiffs, Foresters, &c.

DICKSONS (Limited) are always in a position to RECOMMEND MEN of the highest respectability, and thoroughly practical at their business. All particulars on application. Telegraphic and Postal Address "DICKSONS, CHESTER."

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GARDENER (HEAD); age 40, married, no family.—JAMES WATSON, Esq., late of Langley House, wishes to recommend his late Head Gardener, who has been with him six years, to any Lady or Gentleman requiring a thoroughly practical man. First-class testimonials.—Apply, stating full particulars, to R. H. TAYLOR, 21, High Street, Camden Town, N.W.

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<i>Cypripedium Harrisonianum</i>	<i>Coezygne cristata</i> Lemoniana
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On view morning of Sale, and Catalogues had.

Special Sale of Orchids in Flower and Bud.

MR. J. C. STEVENS begs to announce that his NEXT SPECIAL SALE OF ORCHIDS IN FLOWER and BUD will take place at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, October 18, at half-past 12 o'clock precisely, and he will be glad if Gentlemen desirous of ENTERING PLANTS FOR THIS SALE will send List not later than Thursday next.

Dutch Bulbs.

Every MONDAY, THURSDAY, and SATURDAY, Great Unreserved Sales.

MESSRS. PROTHEROE AND MORRIS will **SELL** by AUCTION, at the Central Sale Rooms, 67 and 68, Cheapside, London, E.C., every MONDAY, THURSDAY, and SATURDAY, at half-past 12 o'clock precisely, extensive consignments of first-class HYACINTHS, TULIPS, CROCUS, NARCISSUS, and other BULBS, from Holland, lotted to suit the Trade and Private Buyers.

On view morning of Sale, and Catalogues had.

Lea Bridge Road, E.

ANNUAL UNRESERVED SALE of Winter flowering HEATHS, &c.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. John Fraser to **SELL** by AUCTION, on the Premises, the Lea Bridge Nurseries, Lea Bridge Road, Leyton, E. (close to the Hoe Street Station, Great Eastern Railway), on MONDAY, October 8, at 12 o'clock precisely, in consequence of the large quantity of lots, a large quantity of WINTER-FLOWERING and other PLANTS, including:—

6000 <i>Erica hymenalis</i>	500 <i>Marcheal</i> Niel and other
2000 „ „ <i>gracilis</i>	Roses
4000 fine named Hollyhocks, from seed	2000 <i>Clematis</i> Jackmannii and other sorts
1000 <i>Lapageria rosea</i> superba	3000 <i>Bouvardias</i> of the finest sorts
5000 <i>Cyclamen persicum</i> (Fraser's superb strain)	3000 <i>Solanums</i>
1000 <i>Clematis flammula</i>	3000 <i>Gemsta</i> fragrans

and considerable quantities of Epacris, Passion-flowers, Jasmines, Honeysuckles, Green and Variegated Ivies, Ampelopsis Vetchii, Escallonia pyracantha, Tree Carnations, Clematis indivisa lobata, Early-flowering Chrysanthemums, &c.

The whole of the Stock is in the best condition, and ready for immediate Sale.

May be viewed. Catalogues had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, E.C.; and Leytonstone, E.

Tuesday Next.

SALE OF NURSERY STOCK and GREENHOUSE PLANTS from Sample.

MESSRS. PROTHEROE AND MORRIS will **SELL** by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on TUESDAY NEXT, October 9, at half past 12 o'clock precisely, the following items of NURSERY STOCK, &c., from Sample:—

20,000 strong Thorns, 2 to 4 feet	1,500 Black Naples Currants
11,000 Conifers, of sorts, 2 to 4 feet	1,500 Ruby Castle Red Currants
3,000 Cupressus Lawsonii, 1½ to 2½ ft.	3,000 2-yr. untrained Apples
10,000 Thunb Lobbi, 8 inches to 2 feet	200 Silver Queen Ivies
1,500 Rhododendrons	400 Clematis in 60 pots
40,000 Native Scotch Fir	Tea Roses in 48 pots
500 Sweet Bay	10,000 Forest Trees
3,000 herbaceous plants, in variety	10,000 Spiræa japonica (imported clumps)
	1,000 Azalea indica, from Belgium

Samples will be on view on the morning. Catalogues of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Peterborough.

Under a Deed of Assignment.—Unreserved CLEARANCE SALE by order of the Trustees of the Estate of Mr. John House, the Freehold Nursery having been disposed of.

MESSRS. PROTHEROE AND MORRIS are instructed to **SELL** by AUCTION, on the Premises, the Branch Nursery, Peterborough, a short distance from either of the Peterborough Railway Stations, on TUESDAY, October 9, at 12 o'clock precisely, without reserve, the whole of the well-grown NURSERY STOCK, consisting of a great variety of Conifers and Evergreen Shrubs, 2000 Spruce Firs, 1000 Cupressus Lawsonii, 1000 Aucubas, 500 Box, 3000 Fruit Trees, including a fine batch of Maiden Apples, 3000 Gooseberries and Currants, 2000 Limes and other Standard Trees, &c.

May be viewed one week prior to the Sale. Catalogues may be obtained at the Seed Shop, Church Street, Peterborough; of J. ADRIFF, Esq., the Trustee, Oriel House, New Road, Peterborough; and of the Auctioneers, 67 and 68, Cheapside, E.C., and Leytonstone, E.

Birmingham.

VERTEGAN'S NURSERIES.

IMPORTANT SALE of one of the most valuable NURSERY, SEED, and FLORIST'S BUSINESSES in the Provinces. Established upwards of 30 years.

MESSRS. PROTHEROE AND MORRIS, of London, in conjunction with Mr. W. C. B. CAVE, of Birmingham, are favoured with instructions from the sole proprietor, Mr. R. H. Vertegan (who is retiring from the business), to **SELL** by PUBLIC AUCTION, at the Royal Nurseries, Harborne Road, Edgbaston, on TUESDAY, the 9th day of October next, at 2 o'clock punctually, the various NURSERIES, DWELLINGS, &c., in lots, as under, and including the Leases, Stock, Goodwill, and Possession, as going concerns:—

Lot 1.—THE ROYAL NURSERIES, RESIDENCE, and COTTAGE (Hans Niemand & Co.), Harborne Road, Edgbaston.

Lot 2.—THE METCHLEY PARK NURSERY and COTTAGE, Edgbaston.

Lot 3.—THE SHELLEY NURSERIES and TWO COTTAGES, Great Malvern.

Lot 4.—THE RICHMOND HILL NURSERY, Edgbaston.

Lot 5.—THE CHAD VALLEY NURSERIES and RESIDENCE, Edgbaston, and the BIRMINGHAM MARKET HALL BUSINESS.

Plans and particulars may be had at the several Nurseries; also from Messrs. PROTHEROE AND MORRIS, Auctioneers, 67 and 68, Cheapside, London, E.C.; and from Mr. W. C. B. CAVE, of Birmingham.

The Milford Nurseries, near Godalming, Surrey.

One mile from Milford Railway Station, and a mile and a half from the new Godalming Railway Station.

FOUR DAYS' UNRESERVED SALE of beautifully grown NURSERY STOCK in excellent condition for removal, by order of Mr. Maurice Young.

Important to Noblemen, Gentlemen, Nurserymen, and others extensively engaged in planting.

MESSRS. PROTHEROE AND MORRIS are instructed to **SELL** by AUCTION, on the Premises, the Milford Nurseries, Milford, Surrey, on WEDNESDAY, October 10, and three following days, at 12 o'clock punctually each day, several Acres of unusually well grown NURSERY STOCK, which has been carefully prepared for removal, including a splendid assortment of Specimen Conifers and Evergreens, 6 to 12 feet; fine examples of Young's Golden Juniper, 3000 Border Shrubs, 3 to 6 feet; 1500 Aucubas, 2 to 3 feet; 3000 Conifers, 1 to 4 feet; 6000 Laurels of sorts, 2 to 3 feet; 5000 Evergreen Privet, 3 to 4 feet; 5000 Ornamental and Forest Trees, 6 to 12 feet; 8000 choicest named Hybrid and Ponticum Rhododendrons, 1000 Standard and Dwarf Roses, 357,000 Transplanted and Seedling Forest Trees, including 60,000 strong Quick, Flowering Shrubs, Climbing Plants, &c.

May be viewed any day prior to the Sale. Catalogues may be had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, London, E.C., and Leytonstone, E.

N.B.—Goods can be loaded at Milford Station, and conveyed to any part of Great Britain without change of trucks.

Lee, S.E.

Ten minutes' walk from Lee, Lewisham, and Blackheath Stations. UNRESERVED SALE, by Order of the Executors of the late Mr. W. North, in consequence of the expiration of the Lease.

MESSRS. PROTHEROE AND MORRIS are instructed to **SELL** by AUCTION, on the Premises, the Manor Lane Nurseries, Lee, S.E., on WEDNESDAY, October 10, at 12 o'clock precisely, without reserve, the well grown NURSERY STOCK, in capital condition for removal, comprising thousands of Evergreen Shrubs for potting; 2000 strong oval-leaved Privet, 500 Golden Yews, 1000 English and other Yews, Dwarf Rowan, 1500 Border Shrubs, 1000 Laurels, 500 bushy Aucubas, 3 to 4 feet; 500 Jasminums in pots, 500 Evergreens in pots, 5000 Gooseberries and Currants, 5000 Ivies, 3 to 5 feet, and other Stock.

May be viewed any day prior to the Sale. Catalogues may be had on the Premises; and of the Auctioneers, 67 and 68, Cheapside, London, E.C., and Leytonstone, E.

Wednesday Next.

2000 English-grown LILIUM AURATUM, splendid bulbs; also L. HARRISII, L. ALBUM, and L. RUBRUM, specially suitable to the Trade; Japanese IRIS, a large assortment of NARCISSUS, and various other BULBS, Dutch FLOWER ROOTS, 500 CAMELLIAS and AZALEAS, of the best sorts from Belgium; GREENHOUSE PLANTS, in variety, &c.

MESSRS. PROTHEROE AND MORRIS will **SELL** the above by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on WEDNESDAY NEXT, October 10, at half-past 12 o'clock precisely.

On view morning of Sale, and Catalogues had.

Wednesday Next.

2000 LILIUM AURATUM, English-grown, splendid bulbs, lotted to suit the Trade.

MESSRS. PROTHEROE AND MORRIS will include the above in their SALE on WEDNESDAY NEXT, October 10.

Lower Norwood, S.E.

THIRTEENTH ANNUAL SALE, a portion of the Land having been sold for Building Purposes.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. H. James, to **SELL** by AUCTION, on the Premises, the Castle Nursery, Lower Norwood, S.E., about two minutes' walk from the station, on THURSDAY, October 11, at 12 o'clock precisely, about 200 lots of beautifully grown ESTABLISHED ORCHIDS, clean healthy plants, including Odontoglossums, Dendrobiums, Lælas, Cattleyas; several splendid specimen Exhibition AZALEAS which have been exhibited with such great success by Mr. H. James; a quantity of STOVE and GREENHOUSE PLANTS in variety, FOLIAGE PLANTS, ROSES in Pots, CLIMBERS, &c.

May be viewed two days prior to the Sale. Catalogues had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, London, E.C.; and Leytonstone.

Lower Norwood, S.E.

SPECIMEN EXHIBITION STOVE and GREENHOUSE PLANTS, including several unusually fine examples of Azaleas and Ericas, which have been so successfully exhibited at the leading shows, and so well known throughout the country, having taken numerous First-class Prizes. By order of Mr. H. James.

MESSRS. PROTHEROE AND MORRIS desire to call attention to the above VALUABLE PLANTS, which they will **SELL** by AUCTION, on the Premises, The Castle Nursery, Lower Norwood, S.E., on THURSDAY NEXT, October 11, at 12 o'clock.

May be viewed. Catalogues now ready and may be had on the Premises; and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Friday Next.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. F. Sander & Co., to **SELL** by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on FRIDAY NEXT, October 12, at half past 12 o'clock precisely, *CATLEYA ELDERADO*, in splendid condition, with fresh green leaves, plump pseudobulbs; the leaves and bulbs are very varied, and we have no doubt that many grand varieties will be bloomed from this importation, as aurea, carnea, conspicua, superba, Wallisii, &c.

Also a few *CATLEYA SUPERBA SPLENDENS*. These two species grow together in the locality where these plants were collected, and from former importations we have flowered the magnificent natural hybrid, *C. Brymeriana*, which combines all the grandeur and beauty of its parents—*C. Elderado* and *C. superba splendens*.

CATLEYA GASKELLIANA, just received per ss. *Lorne*, a magnificent importation, in very fine condition, abundantly furnished with healthy green leaves, and sound dormant eyes.

A very fine lot of ODONTOGLOSSUM VEXILLARIUM varieties. The plants were collected in a new district in Colombia; the varieties LOBBIANUM, LEUCOGLOSSUM, PULCHERRIMUM will be found among them. Fine lot of ODONTOGLOSSUM LUTEO-PURPUREUM SCEPTRUM, a few fine plants of the splendid *CATLEYA HOLFORDII*, *C. VIOLACEA*, and plants of ONCIDIUM AMPLIATUM MAJIS, O. HASTATUM ROSEUM, O. SPHACELATUM MAJIS, splendid lot of TRICHOPILOIA SUAVIS, well grown plants of superb new CATASETUM in flower, the rare and beautiful SCHOMBURGKIA MARGINATA, and a quantity of other valuable ORCHIDS; together with a large assortment of ESTABLISHED ORCHIDS, and the *Orchid Album* complete.

On view morning of Sale, and Catalogues had.

Norbiton and Long Ditton, Surrey.

SIX DAYS' UNRESERVED CLEARANCE SALE of the whole of the well grown NURSERY STOCK, by order of the Executors of the late Mr. T. Jackson.

MESSRS. PROTHEROE AND MORRIS are instructed to **SELL** by AUCTION, on the respective Premises, the Branch Nurseries known as the Kingston Hill Nursery, Kingston Hill, the Norbiton Park Nursery, Norbiton, and the Nursery, Long Ditton, Surrey, on MONDAY, October 15, and following days, the whole of the well-grown NURSERY STOCK, extending over several acres, and in capital condition for removal, comprising thousands of Conifers and Evergreen Shrubs in the borders, for effective planting; also 3000 Standard Roses, 2000 Laurels, 2500 Privet, 3000 Cupressus and Pines, 3000 Green Hollies, 4000 Fruit Trees, growing Crops, loose Utensils, &c.

May now be viewed. Catalogues may be had on the respective Premises; of G. C. SHERARD, Esq., Solicitor, 18, Lincoln's Inn Fields, W.C., and Kingston; and of the Auctioneers, 67 and 68, Cheapside, London, E.C., and Leytonstone, E.

The Auctioneers desire to call attention to this important Sale, being particularly worthy the attention of gentlemen who are engaged in planting. The various Nurseries are to be let, and an opportunity is thus afforded to an incoming tenant of purchasing only what stock might be required at unreserved auction prices.

Sunningdale.

Five minutes' walk from the Sunningdale Railway Station, London and South-Western Railway.

Extensive UNRESERVED SALE of beautifully grown NURSERY STOCK, a large portion of which is growing on Land recently Sold, necessitating an immediate Clearance, and affording a rare opportunity to Gentlemen as well as the Trade who are engaged in planting. The Sale will include a large quantity of Specimen Conifers and other Shrubs, symmetrically grown, and adapted for immediate effective purposes.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. Charles Noble (who has placed in their hands the disposal of his long-established Business and Freehold Estate) to **SELL** by AUCTION, on the Premises, the Sunningdale Nurseries, Bagshot, Surrey, on MONDAY, October 22, and five following days, at half-past 12 o'clock precisely each day, an extensive quantity of remarkably well grown NURSERY STOCK, extending over about 60 Acres, and embracing a great assortment of Evergreens and Conifers, including 10,000 Thunb americana and Lobbi, some thousands of Cupressus Lawsoniana, Laurels of sorts, Green and Variegated Aucubas, Mahonia aquifolium, Retinosporas, Picea Nordmanniana, 2000 Ligustrum ovalifolium, 500 Ilex shepherdi, and other Hollies, Ornamental and Forest Trees in variety, Andromeda, Hardy Azakas, 1000 Berberis of sorts, Hardy Climbers, and other Plants.

May be viewed prior to the Sale. Catalogues may be had on the Premises; at the Sunningdale Hotel, Sunningdale Railway Station; and of the Auctioneers and Estate Agents, 67 and 68, Cheapside, London, E.C., and Leytonstone, E.

Dorking.

Five minutes' walk from Dorking Station, L.B. & S.C.R., and Box Hill, S.E.R.

MESSRS. PROTHEROE AND MORRIS will **SELL BY AUCTION**, on the Premises, the Dorking Nursery, Dorking, Surrey, on **FRIDAY, October 12**, at 12 o'clock punctually, by order of Messrs. Ivery & Son, a great variety of **TREES and SHRUBS**, in good condition for transplanting, ranging from 1 to 5 feet in height, and particularly suitable for effective planting; a choice lot of handsome **SPECIMEN PLANTS** in the border, Flowering Trees, Conservatory, Greenhouse, Flowering and Foliage Plants, specimen Camellias and Azaleas, Dracunas, Ferns, &c.

May be viewed. Catalogues had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Bath.—Expiration of Lease.

SALE of well-grown **NURSERY STOCK, GREENHOUSE PLANTS, and GLASS ERECTIONS**, by order of Mr. E. Lilley, the land being required for other purposes.

MESSRS. PROTHEROE AND MORRIS will **SELL BY AUCTION**, on the Premises, the Bathwick Nurseries, Bath, fifteen minutes' walk from the Bath Railway Station, G. W. R., on **MONDAY and TUESDAY, October 15 and 16**, at twelve o'clock precisely each day, without reserve, a large assortment of well-grown **NURSERY STOCK** of the usual description—2000 Aucuba japonica, 2 to 3 feet; 1200 Shrubs in border, 1 to 7 feet; Dwarf Roses, 3000 Herbaceous and Alpine Plants, 600 Standard, Pyramid, and Dwarf Fruit Trees; great variety of Greenhouse Plants; a few Orchids; seven large Orange Trees, 7 to 10 feet, in boxes. Erections of three Greenhouses, one Pit, and Hot-water Piping, &c.

May now be viewed. Catalogues had on the Premises; and of the Auctioneers, 67 and 68, Cheapside, London, E.C., and Leytonstone.

Isleworth.

(5 minutes' walk from the Isleworth Railway Station.)

SPECIAL TRADE SALE of beautifully grown young **CONIFERS and GOLDEN EUONYMUS**, for immediate potting, window-boxes, or for growing on; by order of Messrs. Charles Lee & Son.

MESSRS. PROTHEROE AND MORRIS will **SELL BY AUCTION**, on the Premises, the Wood Lane Nursery, Isleworth, on **TUESDAY, October 23**, at 12 o'clock precisely, 7000 of the best Silver and Golden **EUONYMUS**, splendidly coloured, 400 **CUPRESSUS LAWSONI ERECTA VIRIDIS**, 1 to 3 feet; 1200 **AZALEA MOLLISS** and **A. ALTA-CIARENSIS**, 9 to 15 inches; 500 **CLEMATIS JACKMANII SUPERBA**, in pots; 1200 **THUJA LOBBII**, 2 to 3 feet; 1000 **RETINOSPORA**, of sorts, 1½ to 4 feet; thousands of various **CONIFERS**, for potting; 500 **AUCUBAS**, 2 to 2½ feet; 500 **Standard APPLES**, of the best sorts; 500 **Standard VICTORIA PLUMS**; an assortment of **GREENHOUSE PLANTS, ERICAS**, &c.

May be viewed one week prior to the Sale. Catalogues may be had on the Premises; at the Royal Vineyard Nursery, Hammersmith; and of the Auctioneers, 67 and 68, Cheapside, London, E.C., and Leytonstone.

Friday, October 26.

IMPORTANT SALE of **SELECTED DUPLICATE PLANTS** from his well-known Collections of **ESTABLISHED ORCHIDS**, by order of F. G. Tautz, Esq.

MESSRS. PROTHEROE AND MORRIS are instructed to **SELL BY AUCTION**, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on **FRIDAY, OCTOBER 26**, and not Friday, October 19, as announced in previous Advertisements, **SELECTED DUPLICATE PLANTS** from this well-known collection, including a large number of valuable **CYPRIPEDIUMS**.

Catalogues are in course of preparation, and further particulars will appear in future Advertisements.

Sunbury, Middlesex.—Preliminary Notice.**VALUABLE FREEHOLD NURSERY.**

MESSRS. PROTHEROE AND MORRIS are favoured with instructions from the owner to **SELL BY AUCTION**, on the Premises, on **MONDAY, October 29**, the **VALUABLE FREEHOLD NURSERY**, known as Osborn's Nursery, Sunbury, comprising 17 Acres of very productive Land, Brick-built Residence, 21 Greenhouses, 2 miles of Hot-water Piping, numerous Pits, Stabling, and other Trade Buildings. The Estate possesses extensive frontages to the public roads, and these frontages could be utilised for building purposes, without interfering in any way with the carrying on of the present Nursery and Florist's Business.

Particulars and Plans can be had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, E.C.

N.B.—The Extensive STOCK of **STOVE and GREENHOUSE PLANTS and OUTDOOR NURSERY STOCK** will be **SOLD BY AUCTION**, on the Premises, on **MONDAY and TUESDAY, October 29 and 30**.

Tansley Nurseries, near Matlock, Derbyshire.

MESSRS. ELSE and SON beg to announce that they are favoured by instructions from Mr. James Smith to **SELL BY AUCTION**, at the above well-known Nurseries, without reserve, on **TUESDAY, WEDNESDAY, and THURSDAY, October 9, 10, and 11, 1888**, several acres of highly valuable **NURSERY STOCK**, comprising hardy Scarlet and other Rhododendrons; also about 250,000 transplanted Seedlings from hybrids and named sorts, in sizes up to 3 feet upwards of 150,000 Willows, in sorts; common and ornamental Hollies; Irish, English, and Golden Yews; common, Evergreen, and oval-leaved Privets; Cupressus and Retinosporas, in choice variety; Laurels, Berberis, Tree Box, Aucubas, and a numerous variety of other Ornamental Shrubs, Forest Trees, &c.

The Home Nursery, Tansley, is 2 miles distant from the Matlock Bridge Railway Station, Midland Railway. Conveyances attend all trains.

Catalogues may be had ten days prior to the Sale on application to Mr. JAMES SMITH, at the Nurseries; or to the Auctioneers, Matlock Bridge.

Whittington Nurseries, near Lichfield.**IMPORTANT SALE OF NURSERY STOCK.**

MESSRS. WINTERTON and SONS are instructed by Mr. Edward Holmes to submit for **UNRESERVED COMPETITION** at the above well-known Nurseries, on **TUESDAY, WEDNESDAY, and THURSDAY, October 9, 10, and 11**, at half-past 10 o'clock each day, a large quantity of **FRUIT TREES** of the best sorts, in Standards, Pyramids, and Dwarfs; **FOREST TREES**, including Scotch, Austrian, Larch, and Spruce Firs; a complete collection of **EVERGREEN, DECIDUOUS, and ORNAMENTAL TREES and SHRUBS**, viz., Box, Laurels, Hollies, Aucubas, Lilacs, Spiraeas, Syringas, &c.; a grand collection of Conifers, in many varieties, suitable for pots and boxes; a quantity of named Rhododendrons, Ghent mollis Azaleas, and other American Plants; Herbaceous and Rock Plants, in lots to suit all purchasers.

Particulars in Catalogues to be obtained from the place of Sale, or the Auctioneers, Lichfield and Walton Warren, Barton-on-Trent.

Idlerocks, Moddershall, near Stone, Staffordshire.**IMPORTANT and EXTENSIVE SALE OF NURSERY STOCK.**

MR H. WALTERS has been favoured with instructions from Godfrey Wedgwood, Esq., to effect a **CLEARANCE SALE BY AUCTION**, without Reserve, on **THURSDAY and FRIDAY, October 11 and 12**, of the whole of the **NURSERY STOCK** on the above-mentioned land, recently purchased for building purposes, and which consists of **Forest Trees** in great variety, Ornamental Trees, Shrubs, Thorn Quicks, Evergreens, Fruit Trees, &c.

Luncheon by Ticket at the "Wild Boar" Inn, Moddershall, at 12 o'clock.
Sale to commence each day at 1 o'clock prompt.
Conveyances will be in attendance at the Blyth Bridge and Stone Railway Stations on the morning of each day's Sale to convey intending purchasers to the Nursery, and returning each evening immediately after the Sale.
Auction Office, Stone.

WANTED, a Small FLORIST'S BUSINESS, or a SHOP suitable for same. State full particulars to **FLORIST, 41, Wellington Street, Strand, W.C.**

TO BE SOLD, as a concern in working order, an old-established **SEED BUSINESS** (Retail and Wholesale), in the best part of the City of London. Capable of much extension.

A. B. W. Gilks, Esq., 15, Lincoln's Inn Fields, W.C.

FOR SALE, a NURSERY, SEED, and CUT FLOWER BUSINESS, situated in a rising town in Yorkshire. The Nursery is 6 acres, and is well stocked with a first-class General Nursery Stock. There are 4 Plant Houses and a number of Pits, all well suited for Market work. The shop trade is mostly cash, and satisfactory reasons will be given or shown why disposing. This is a rare opportunity for a retiring Gardener.—Apply to S. Gardener's, Chronicle Office, 41, Wellington Street, Strand, W.C.

To Florists, Nurserymen, and Others.

Suit Growers, or admirable chance to start a good local business. **TO BE SOLD**, most compact **PREMISES**, on the main road, about 5 miles from Marble Arch, containing 8-roomed Residence, 2 Greenhouses, 85 feet long each; Forcing Pits; Show House 45 by 16 feet, and accommodation to erect more if desired. Price £900, which includes 87 years' lease at a ground rent; stock, plant, utensils. Greater portion can remain.

HERBERT DRAKE, 343, Harrow Road, Paddington, W.

FOR SALE, a NURSERY and SEED BUSINESS, in a County Town between Edinburgh and Glasgow, in the midst of a planting country. Has been in existence for over a century. The Nursery extends to 14 acres, very moderately rented, and contains a well assorted stock of Forest Trees, Shrubs, &c. The stock is light, and must be taken at a mutual valuation. Only given up on account of the great age of the proprietor. For full particulars apply to **JOHN LAMONT, 2, Hope Street, Edinburgh.**

South of England.

LARGE GARDEN, 20 Acres, with Twenty Greenhouses and Vineries. £7000 has been spent on the property. Seven years' lease. Two Cottages inclusive. £150 a year. **ELDRIDGE, Portsmouth.**

TO LET, a Small JOBBING and FLORIST'S NURSERY, consisting of 4 Houses and several Pits, excellently situated, in most fashionable part of Leicester. An advantageous opportunity for an energetic and enterprising man. Apply, **HARRISON and SONS**, Royal Midland Seed Establishment, Leicester.

ORCHIDS.**THE LIVERPOOL HORTICULTURAL CO.**

(JOHN COWAN), Limited,

Have just received a fine Importation of

ODONTOGLOSSUM REZLII.

" **VEXILLARIUM.**

ONCIDIUM KRAMERIANUM.

" **WELTONI.**

" **UNDULATUM, &c.**

Circular with full particulars of these and other Importations, also copy of their new Illustrated and Descriptive CATALOGUE OF ORCHIDS, will be sent free on application.

THE VINEYARD and NURSERIES, GARSTON, near LIVERPOOL.

Fifty Nurseries, Market Gardens, Florist and Seed BUSINESSES to be DISPOSED OF.

MESSRS. PROTHEROE and MORRIS' **HORTICULTURAL REGISTER** contains full particulars of the above, and can be obtained, gratis, at 67 and 68, Cheapside, London, E.C.

THE GARDENERS' ORPHAN FUND.**DONATIONS and SUBSCRIPTIONS**

WILL BE THANKFULLY RECEIVED BY

A. F. BARRON, Hon. Sec.,

Royal Horticultural Society's Gardens, Chiswick, London, W.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.

NOTICE IS HEREBY GIVEN that an **ADDITION** will be made to the **LIST of PENSIONERS** of this Institution in **JANUARY NEXT**. All Persons desirous of becoming Candidates are required to send in their application to the Committee, with their Testimonials and Certificates, on or before the 5th November next, after which day they will not be received. Preference will be given to those Candidates or their Widows who have been Subscribers for Fifteen clear years at least. Should there not be a sufficient number of these candidates to fill the vacancies, then the applications of those who have not subscribed so long or not at all will be considered.

By order, **EDW. R. CUTLER, Secretary,**
50, Parliament Street, London, S.W., October 3, 1888.
P.S.—Printed Forms of Application may be obtained from the Secretary.

UNITED HORTICULTURAL BENEFIT and PROVIDENT SOCIETY.

The **ANNUAL DINNER** of the above Society will be held on **THURSDAY, October 11, 1888**, at the Cannon Street Hotel, E.C., at 5.30 P.M.

Chairman.—**Dr. ROBERT HOGG, F.L.S.**
Vice-Chairman.—**H. J. VEITCH, Esq., F.L.S.**
Tickets, 5s. each, to be obtained of the Secretary, **W. COLLINS, 5, Martinhoe Terrace, Balham, S.W.**

TENDERS for SUPPLY of young TREES and SHRUBS, are invited by the Harris Orphanage Committee. Particulars on application to **Mr. J. CUMMING, Clerk, 4, Chapel Street, Preston, Lancashire.**

THE PARKS COMMITTEE of the Halifax Corporation

are prepared to **RECEIVE TENDERS** for the **SUPPLY of 100 TREES, 14 feet to 16 feet in height**, of any of the following species—Western Plane, Lime, Sycamore, Wych Elm—delivered at Savile Park, Halifax, before **November 30, 1888**. Tenders, enclosed "Tender for Trees," must be sent to the undersigned before **November 10, 1888**.

By order, **KEIGHLEY WALTON, Town Clerk,**
Town Hall, Halifax, September 27, 1888.

Borough of Penzance.**TO LANDSCAPE GARDENERS.**

THE PENZANCE TOWN COUNCIL invites **PLANS for LAYING OUT as PUBLIC WALKS and PLEASURE GROUNDS** the Morab House Property. A Report explanatory of the details of the plan and estimated cost must accompany each design. Premiums of Twenty and Ten Guineas will be given for the best and second best Designs respectively. Should the Author of the Premiated Plan be selected to carry out the work the Premium will merge in the Commission. The Premiated Plans to become the property of the Council. The Grounds to be laid out—4 acres in extent, and having throughout a southern slope—can be seen on application to the Borough Surveyor, from whom a Plan may be obtained on payment of 2s, which will be returned to those forwarding designs.

Plans, &c., with distinguishing motto and name in sealed envelope, to be sent to me at my office, Public Buildings, on or before **October 20 next**.

THOS. CORNISH, Town Clerk.
Penzance, September 29, 1888.

23, Market Street (off Parliament Street), York.**CLUES BROTHERS,****SEEDSMEN, FLORISTS, & DUTCH BULB IMPORTERS.**

In succeeding to the business lately carried on by G. H. Hewson, at the above address, wish to intimate to the Customers and the Public generally that their intention is to supply everything connected with the trade of the purest quality and on the most reasonable terms, trusting thereby to insure the confidence and support so liberally accorded to their predecessor. The experience of **W. CLUES (Manager)**, in some of the leading firms—viz., Messrs. Downie, Laird & Laing, Florists to the Queen, Edinburgh and London; Messrs. Fisher, Holmes & Co., Sheffield; and Messrs. Edward Webb & Sons, the Queen's Seed-men, Wordley, Stourbridge—will, we trust, be sufficient guarantee of his efficiency in the trade.—September 25, 1888.

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Anemones, Spiræas,
Snowdrops, and all
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COLLECTIONS FOR
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Collection B containing	3496	finest flower-roots.	Price	5 Gns.
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will be ready to lift in October; and I would advise early orders
to secure them, as the stock of fine clumps is very limited.

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A robust variety, the largest of the group, and very orna-
mental as a foliage plant. It flowers in October and November,
the blossoms are large and white, shaded with rose on the
exterior, and generally produced in twos, but if shaded or a
glass placed over the plants, the flowers are then pure white.
By shading the flowers can be retarded even to December. It
is the most vigorous of the section, and succeeds where many
of the others fail to grow.

MAJOR.

Although this plant is frequently offered, it is seldom to be
obtained true to name, owing to its great value for cutting
purposes. The flowers are pure white under glass, but have a
slight rosy tinge in the open; it is the greatest favourite
among market growers, producing flowers from December to
January. It is a grand variety for potting, the foliage is so
close and compact, and the flowers abundant.

RUBRA.

One of the most distinct and novel of this group. The flowers
are large, produced about the end of January, and of a lovely
colour. It is a robust grower, free blooming, and a decided
acquisition for cutting.

RIVERSTONI.

A fine distinct variety, somewhat in the way of H. maxima,
but with smaller foliage, yet a strong robust variety. The
flowers are produced in pairs, pure white, and blooming in the
open at Christmas, a little earlier than major and later than
maximus, thus forming a nice succession, and will be found a
fine addition to our list of these useful winter-blooming plants.

COLLECTED PLANTS.

These are far superior to the ordinary stuff generally offered,
which are usually dried up and half dead before received,
being collected by inexperienced men; those now offered are
fine healthy plants, and usually are as fresh as when first
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50 Tulips, single, early	50 Ranunculus, Persian
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50 Narcissus biflorus	50 Tritelesia uniflora
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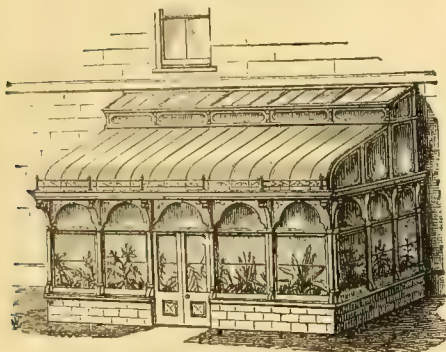
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INVITES AN INSPECTION FROM INTENDING
PLANTERS TO

THE FOLLOWING TREES,

*Having stout straight stems, fine heads, and
splendid roots. All have been trans-
planted within two years:—*

ACACIA BESSONIANA, 12 to 14 feet.
" SEMPERFLORENS, 12 to 14 feet.
ACER DASYCARPUM, 12 to 16 feet.
" WIERII LACINIATA, 10 to 14 feet.
" NEGUNDO VARIEGATA, Standards, 8 to 10 feet.
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" REITENBACHII, 12 to 14 feet.
" SCHWEDLERII, 12 to 16 feet.
" WORLEYII, Standards, 12 to 14 feet.
ASH, Mountain, 10 to 14 feet.
BEECH, Common, 10 to 12 feet.
" Purple, Pyramids and Standards, 10 to 16 feet.
BIRCH, Silver, 12 to 16 feet.
CHESTNUT, Horse, 14 to 16 feet.
" Double White, 10 to 16 feet.
" Scarlet, 12 to 16 feet.
" Spanish, 12 feet.
ELMS, English, 10 to 12 feet.
" Guernsey, 12 feet.
LIMES, 12 to 16 and 20 feet.
" Silver-leaved, 10 to 14 feet.
LIQUIDAMBAR, 6 to 10 feet.
MAPLE, Norway, 14 to 16 feet.
OAK, English, 10 to 14 feet.
" Scarlet American, 12 to 14 feet.
PLANES, 12 to 16 feet.
POPLAR BOLLEANA, 10 to 16 feet.
" CANADENSIS NOVA (the true variety), 12 to 16 feet.
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OAK, Weeping, English, Standards, 10 to 12 feet.
POPLAR, Weeping, Pyramids and Standards, 10 to 12 feet.
SOPHORA JAPONICA PENDULA, Standards, 8 to 9 feet.

Evergreens of large size, for immediate effect.

ABIES CANADENSIS (Hemlock Spruce), 5 to 8 feet.
" DOUGLASII, 5 to 10 feet.
" GLAUCA, 4 to 6 feet.
CEDRUS ATLANTICA, 4 to 5 feet.
" GLAUCA, 3 to 7 feet.
" DEODARA, 6 to 10 feet.
" LIBANI (Cedar of Lebanon), 4 to 7 feet.
CUPRESSUS LAWSONIANA ERETA VIRIDIS, 5 to 8 feet.
" LUTEA, 3 to 6 feet.
JUNIPER, Golden Chinese, 3 to 8 feet.
" VIRGINIANA GLAUCA, 5 to 7 feet.
PICEA CONCOLOR, 4 to 6 feet.
" GRANDIS, 4 to 9 feet.
" LASIOCARPA, 4 to 8 feet.
" MAGNIFICA, 2 to 4 feet.
" PUNGENS GLAUCA, 3 to 4 feet.
PINUS AUSTRIACA, 3 to 6 feet.
RETINOSPORA PISIFERA AUREA, 4 to 6 feet.
SPRUCE FIR, 4 to 8 feet.
" Black and White, 4 to 7 feet.
THUOPSIS BOREALIS, 4 to 5 feet.
" DOLABRATA, 3, 4, and 6 feet.
THUJA LOBBII, 4 to 8 feet.
" OCCIDENTALIS.
" LUTEA (Golden), 3 to 6 feet.
YEWS, Common, 3, 4, and 5 feet, thousands.
" Golden, of all sizes, up to 10 feet.
We have a large quantity of Pyramids, Globes, and
Standards, in point of variety and size unequalled.
" Golden Seedlings, 3, 4, 5, to 8 feet.
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AUCUBA JAPONICA, 2½ to 4 feet.
BAMBUSA METAKE, fine clumps, 5 to 7 feet.
BOX, Green and Variegated, 3, 4, 5, to 8 feet.
HOLLIES, Common Green,
" Altacularensis,
" Hodgins,
" laurifolia,
" myrtifolia,
" Scottica,
" Yellow berried and other sorts,
" Variegated, of sorts,
" Golden Queen, 4, 5, 6, 7 to 10 feet, hundreds of beautiful
specimens.
" Silver Queen, 4 to 10 feet.
" Weeping, Perry's, on straight stems, with heads of ten
to fifteen years' growth.
" New Gold Weeping, a large quantity of beautiful plants.
AZALEAS, the finest varieties known, 2, 3, 4, and 5 feet.
" MOLLIS, Seedlings and Named Varieties,
RHODODENDRONS, 2, 3, 4, 5, 6, 8 to 10 feet, thousands of
finer plants than can be found in any other Nursery.

*The Rhododendrons and Azaleas in Rotten
Row, and at the Royal Botanic Gardens, Regent's
Park, are supplied by ANTHONY WATERER.*

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THE GARDENERS' CHRONICLE,
Vol. III., Third Series, JAN. to JUNE, 1888.
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THE
Gardeners' Chronicle.

SATURDAY, OCTOBER 6, 1888.

EARLY ENGLISH GARDENING.
IV.

TO all those interested in the primitive phases of English gardening, there is no more valuable a book than Professor Thorold Rogers' *History of Agriculture and Prices in England*, a work which represents the study and research of over a quarter of a century, and of which six out of eight goodly volumes have already appeared. It commences with the year 1259 and will conclude with 1793. Scattered throughout its pages are numerous items, directly bearing upon the gardening of the more remote ages of English history. The prices paid at different times for various commodities are exceedingly interesting and instructive. We learn, for example, that in 1403 Mustard seed was sold at fifteen pence per bushel, but which in 1418—probably through some very unusual circumstance—was selling for 8s. for the like quantity. In the former year, also, Garlic was fetching 4d. per bunch, and Onions 7d. per bushel. At about this time, also, the wages of an unskilled labourer were threepence and fourpence per day; whilst women, who were employed in the lighter agricultural works, such as weeding, received twopence per day. Again, in 1403, a pound of Saffron was sold for 16s. 4d., of Cloves for 3s. 2d., of Currants sixpence, of Dates twopence, of Figs and Raisins and Rice one penny. The prices of all these foreign spices and fruits were, naturally, subjected to fluctuation, sometimes of a very erratic character. In 1503 Saffron had fallen so low as 7s. per pound, in some places; whereas in others the price varied from 10s. to 12s. In 1502 Cloves were selling for 2s. 6d., but in the year following 8s. per pound was the market value. Other commodities were selling at about the same prices in 1503 as in 1403. It will, of course, be understood that these figures do not represent the currency of to-day;

to get at an approximate equivalent in our present coin the figures should be multiplied by six, or even eight.

The records whence Professor Rogers derived his data afford the interesting facts that 1*l.* per day was paid in 1326 for felling trees, and that 1*l.* was paid for the hoeing of an acre of land. Also, that in 1502 twenty trees for gardens were sold for 4*d.* at Oxford, but we are left to conjecture as to whether these trees were ornamental or fruit-bearing. In 1537 a garden spade was sold at Cambridge for 7*d.*, and there are several shovels mentioned in the records.

Professor Rogers is strongly inclined to believe, from the absence of proof to the contrary in his researches, that there was no such thing as horticulture until the last two decades of the sixteenth century. He advances some remarks of Hartlib's to the effect that English gardening was very backward, and that the better kinds of fruits and vegetables were imported from Holland, though the English soil and the English climate were quite adequate to supply what came from a foreign land.

We may take for granted that none but rich people indulged in the luxury of vegetables until the seventeenth century. The diet of previous times was "copious but coarse," and through several months of winter hundreds and thousands of people subsisted on salted meat. The fact is in many ways an interesting one. It shows, for example, that the almost universal predilection for vegetables is a comparatively recent one, that the strongly urged principles of vegetarianism are purely of modern growth, and that in many respects our scientific efforts to live longer are not, after all, much more conducive to that end than the "copious but coarse" curriculum of the Englishman of four or more centuries ago. It must be clearly understood that the present writer has no wish to disparage vegetarianism, but the fact or two indicated above could not but induce a reflection upon "some certain truths." "The familiar vegetables of our experience," writes the Professor (iv., 653), "were generally unknown up to nearly the end of the sixteenth century." Onions were, apparently, in common use. There are numerous entries of garden Peas, and a few of edible Beans. I have found one record of the purchase of Cabbage-seed. But garden roots, the Turnip, Parsnip, and Carrot, are, as far as my researches supply me with information, unknown, and remained unknown until, in the reign of James I., they were introduced from Holland. Potatoes came in at about the end of the sixteenth century, for I have found purchases made on the great Queen's account at two shillings and sixpence per pound. The only native flavours were a few wild plants."

It is perhaps of more importance to know when a particular vegetable was actually in commerce than the mere date of its introduction—which in many instances occurred first in a dried state. The following facts, therefore, are of considerable interest and importance. In 1593 a London merchant purchased seeds of certain pot-herbs, such as Hyssop, Thyme, Marjoram, and Winter Savory. There is a record of the New College, Oxford, buying, in 1644, Cabbage plants at 1*s.* per 100, Carrot seed at 4*d.* per ounce, and Turnip seed at 2*d.* per ounce. The first reference to Cauliflower is 1635. In 1653 the owner of Mount-hall, near Saffron Walden, is recorded to have bought seeds of Carrot, Radish, Cabbage, Lettuce, Parsnip, Spinach, Colewort, curled Radish, Succory, Cucumber, Skirret, Rounse-falls, Clove Gillyflowers, Gillyflowers, Clover, Sainfoin, and Asparagus plants. In the follow-

ing year the same individual purchased, in addition to the foregoing, Striped Lettuce, Smooth Spinach, Parsley, Scurvy-grass, Leek, Purslane, Musk Million seeds, Cabbage plants, Artichoke plants, Sandwich Peas, Winter and Summer Savory, Sweet Marjoram, Short Cucumber, and Turnip seed.

There is yet another important phase of early gardening which finds place in Professor Rogers' valuable contributions to the history of British commerce; and that is in reference to gardeners' wages. We believe we are safe in saying that this subject has hitherto been wrapped in the most complete obscurity. The wages were low,—as low, in fact, as those of the ordinary labourer. At Oxford, in 1589 and 1591, 6*s.* per week was the amount paid; in 1599, and until two years later, the sum had dwindled down to 4*s.*; it rose to 5*s.* 4*d.* in 1602, only to fall back in 1609 to 5*s.*; and still further, in 1610, to 4*s.* All Souls' College gardener received 6*s.* per week in 1612 and in 1617, but he of the New College 1*s.* less in 1621. A certain Lord Spencer "beat the record" with his munificent allowance, in 1621, of 3*s.* The wages of gardeners in London appear to have been best, for in 1593 and 1595 7*s.* 9*d.* and 8*s.* were paid to those who worked in or near the metropolis. A movement for the better transpired at the end of the first quarter of the seventeenth century, when 9*s.* appear to have been the average weekly wage of a gardener. W. R.

NEW OR NOTEWORTHY PLANTS.

CATTLEYA GUATEMALENSIS (T. Moore) VAR. WISCHHUSENIANA, *n. var.* (See T. Moore, *Floral Magazine*, 1861, pl. 61.)

The earliest record we have of this little known variety is to be found in Dr. Lindley's Herbarium. There are to be seen on the same sheet flowers of Cattleya Skinneri guatemalensis, and of Barkeria Skinneri, with the remark—"All from one stock; Guatemala, Skinner."

The plant was exhibited by Messrs. J. Veitch in March, 1861, as coming from Mr. Skinner. It has the bulbs nearly like those of Cattleya Skinner, or Epidendrum aurantiacum, a rather well-developed acute spathe, and a corymboid raceme with flowers as large as those of Cattleya Skinneri, sepals and petals more acute, and an oblong acute lip, rather obscurely trilobed in the middle, with blunt angles, convolute at the superior half, showing then a yellow basilar disc, with some radiating series of dark blackish-purple spots, purple around, and at the apical part. The sepals and petals are light yellow, with light purple margins. Later on I had just the same form from my late friend, Mr. John G. Veitch, who imported it from Panama, and from Lord Londesborough's collection near Combe Wood, in April, 1873. Both have the yellow disc of the lip. I find a memorandum with the last, declaring it a hybrid between Epidendrum aurantiacum and Cattleya Skinneri, it having been collected among the two species. This is a very good suggestion, which I prefer by far to Mr. Skinner's first-mentioned statement.

Finally, Mr. B. S. Williams has favoured me with an inflorescence and a photograph of the plant prepared by Messrs. H. Johnson & Co., of Wood Green, N. The flowers have very light reddish-purple sepals, rose-purple petals, and a brown lip without a yellow disc, but at the very base with a small white plate. Column white. The lip is not so distinctly lobed, but rhomboid or oblong-acute. It flowered with Mr. W. Wischhusen, whose name it bears, and who sent flowers and a photograph to Mr. B. S. Williams, who kindly favoured me with them.

I have to thank Mr. F. Sander for a copy of the plate quoted, and Mr. J. Godseff for information from the description, obtained through Mr. Nicholson at Kew Gardens. H. G. Rehb. f.

ODONTOGLOSSUM ANDERSONIANUM LOBATUM VAR. LEMOINIERIANUM.

This is an unusually fine variety (individual?) Its flowers are very large. The sepals and petals are bordered with fine yellow. There is some yellow on the base of the unbordered lip. A very light mauve hue spreads over the white disc of two of the sepals.

It was kindly sent me by Mr. A. Lemoinier, of Lille, who raised that showy Cypripedium so much admired at the Exhibition at Ghent. H. G. Rehb. f.

CATTLEYA GUTTATA LEOPOLDI ODORATISSIMA, *n. var.*

This is very near the fine Cattleya guttata Leopoldi immaculata, which appeared in 1886 with Mr. A. A. Peeters of St. Gilles, Bruxelles. The petals and sepals are yellow on both sides. The side laciniae of the lip are white, its disc and anterior lacinia purple. Column very strong, purple at the top and a little at the base. The remaining part white. There is an angle on each basilar side in front of the column, which is remarkable. "The plant is not distinct from the others in growth. As soon, however, as a ray of sun shines on the plant the whole house (25 metres in length) is fully perfumed by a delicious smell of Heliotrope, from five flowers only." This is what Mr. A. A. Peeters writes me about this very remarkable novelty. H. G. Rehb. f.

ONCIDIUM MACULATUM (Lindl.) PSITTACINUM, Rehb. f., in Lindl. "Folia Orchid." *Oncidium*, pl. 113 (1855).

This lovely variety was kindly sent me by Mr. Alfred van Imschoot, from Mont St. Amand, Gand. All the ground colour of the sepals, petals, and lip is of the finest yellow; sepals and petals much blotched. Having named it as early as 1855, I felt very pleased to see it again after thirty-three years. H. G. Rehb. f.

CATTLEYA GUTTATA MUNDA, *n. var.*

Cattleya guttata Leopoldi immaculata is for the Leopoldi variety what this is for the old typical Lindleyan Cattleya guttata. It has both sepals nearly green, without any spots. The lip and the column are like those of the old plant. I should have liked to name it in allusion to its green colours, but, as so frequently happens, the colour eventually changed to a light yellow. Messrs. Seeger & Tropp kindly sent it to me. H. G. Rehb. f.

AERIDES HOULLETIANUM, Rehb. f.

Mr. Ortgies, the Curator of the Zurich Botanic Gardens, kindly sends me a splendid inflorescence and leaf of what he received from Paris as Aërides Picotianum. There is no difference between the two, excepting the priority of the name of Aërides Houlettianum. H. G. Rehb. f.

ROSES.

A PLEA FOR TEA AND NOISSETTE ROSES.

As the period of the year is now at hand when lovers of a garden will be considering what alterations shall be made, and what additions indulged in, and as all gardeners are lovers of Roses, I make no apology for putting in a plea for two classes of Roses (running very often into one another) which have greatly increased in popularity of late years, about which erroneous notions have prevailed, and concerning whose beauty there cannot be, I think, a second opinion.

Amongst the errors which have prevailed concerning them is their great delicacy of constitution, and this is a fallacy. Of course, we all can remember the time when Tea Roses would die off, but that was not in all cases the fault of the Rose so much as of the stock it was budded on. There were, it is true, delicately constitutioned Roses in those days, such as Vicomtesse de Cazes, La Boule d'Or, Madame de St. Joseph, Monsieur Furtado, and when these died off it was concluded it was owing to their weakly constitution, but other and

stronger ones did the same, and the cause was not far to seek. Except on standards and half-standards, when the wild Brier was used, all Roses, Tea and hybrid perpetual alike, were budded on the Manetti. Now this stock has many advantages for hybrids on some soils, and for nurserymen it is invaluable; it is easily worked, and strikes from cuttings most readily, but it has two disadvantages for Teas—it is very strong, full of vigorous sap, and is apt to assert its position rather too much; moreover, it is very precocious. The sap rises early in the season, pushing the scion into growth, and exposing the shoots to the attacks of those May frosts which are so injurious to the well being of many things, but especially to that of the Rose. The introduction of the seedling Brier as a stock by Mr. George Prince, of Oxford, and the use of the tree cutting, very warmly advocated by Mr. Ben. Cant, of Colchester, have changed the whole character of Tea Rose growing. We get stocks more suited to the growth of the scion, and which do not push so early in spring, and do not expose their foster-children to the rude embraces of King Frost.

There are, I am aware, districts where the growing of Tea Roses is a difficulty owing to climate, and some of our midland and northern counties are the worst off in this respect. It does not follow that the further north one goes the greater the difficulty there is in growing Teas. Some of the best plants of Teas I have ever seen were some of Messrs. Cocker & Son's, of Aberdeen; and I have had blooms sent to me by a lady correspondent at Christmas time, from Forres, which bore witness to a fine climate; while my friend, Mr. A. Hill-Gray, has shown how he could grow Tea Roses in the Perthshire Highlands; and I have seen in the south-west of Scotland plants which it was impossible to exceed in vigour and beauty; still I know there are many places where it is a difficult, if not an impossible, matter to grow Teas. These are mostly in the north midland counties, which boast of some of the coldest spots in these islands. I would, however, say to all who love the Rose, Don't determine you can't grow Teas until you've tried.

In making a selection of Roses in these days, I would first of all bear in mind that the beginner (and I am not writing for experienced growers) requires Roses that will grow. There are so many vigorous growers now-a-days, of all shades of colour, that a good selection of them will give a grower all that he can desire, even when eliminating some, which, although vigorous, are, from some cause or other, not effective; thus, Riza du Parc, although of a very tinging colour, and vigorous in habit, yet has the bad habit of throwing malformed flowers, so that not one in fifty comes as it ought to do. Then there is Jean Ducher, which, although very beautiful, is a fair-weather Rose, and in wet seasons you will in vain look for a good bloom. Then, again, Marie Guillot, although a very fine Rose, is too difficult to open, and it is of no use beginners worrying themselves, and reaping disappointment. Let me advise then the following:—Anna Ollivier, a beautifully shaped flower, flesh-coloured, with a deeper tinge at the base; Caroline Kuster, bright lemon-yellow—a very good Rose; Catharine Mermet, a lovely flesh-coloured Rose, of fine form, and one of the very best. I may add here to it her offspring, The Bride, which is, if possible, more lovely than her parents, a beautifully pure white. Etoile de Lyon, bright sulphur-yellow, perfect in form and vigorous in habit; Hon. Edith Gifford, white, slightly tinted with delicate flesh colour, very like our old English Rose *Devoniensis*, but better in habit, and altogether a most desirable Rose. Madame Cusin, rosy-purple with yellow base; Madame Lambard, one of the most protean Roses I know—you can never tell what colour it will be, sometimes bright rose, sometimes yellow, and at other times of all shades of the two combined: generally it comes darkest in autumn. Madame de Watteville, very distinct, pale lemon, with distinct margin of pinkish rose, a great improvement on *Homère*. Marie van Houtte, probably the most vigorous of all Teas,

yellowish-white, edges of the petals margined with rose, and a wonderful combination of the two colours. It is very vigorous, very fine, and a grand autumnal bloomer. The petals have not the solidity of some other Teas, and occasionally the flowers are loose. *Perle des Jardins*, very large, full, and well formed, bright straw, passing into deep canary; *Rubens*, large flower, white, with yellowish centre; *Souvenir de Paul Nèron*, beautiful white, with a very delicate tinge of rose in the centre; *Souvenir de Thérèse Levet*, deep rosy-crimson, the darkest Tea in growth; *Souvenir d'un Ami*, salmon and rose shaded, large and full; *Sunset*, an orange-coloured sport from *Perle des Jardins*.

For pillar or climbing Roses there are no better Roses than the *Noisettes*, especially those of the *Gloire de Dijon* race. "Old Glory" is very fine, but I think some of her progeny even better—*Bouquet d'Or*, for example, while very vigorous and beautiful in flower, is also better covered with foliage. Madame Berard, a deeper shade than *Gloire*, is also a freer bloomer in autumn. Madame Emilie Dupuy is a pale form of *Gloire*, while Madame Eugene Verdier, deep chamois-yellow, good in shape, is also a fine autumn bloomer. To these I would add *Rève d'Or*, which comes between the Teas and *Noisettes*, and is a most beautiful flower—a climbing Madame Falcot. These are all good Roses for concealing fences, walls of houses, or training as pillar Roses. *Wild Rose*.

FRUIT REGISTER.

PEAR CLAPP'S FAVOURITE.

This early Pear, which is of American origin, is not mentioned in the report of the Pear Congress held at Chiswick, as suited to the Southern Counties. That it is a variety for the South of England can be seen in the nurseries of Messrs. J. Cheal & Son, at Crawley. It is of medium size, handsome in shape, rather higher in colour than *Louise Bonne* of Jersey, and it does well either on the Quince or the Pear stock, growing and cropping freely. It will take a place amongst early market Pears, coming in just before Williams' *Bon Chrétien*. *R. D.*

THE WILSON JUNIOR BLACKBERRY.

There are two long rows of this Blackberry in the gardens of Mrs. Clay, Comyn Hill, Ilfracombe. The rows run north and south, are 4 feet apart, the canes being trained at from 6 to 9 inches apart, to a series of wires strained to stout posts, and are bearing heavy crops of large conical shaped fruits which are nearly three times the size of the ordinary Blackberry, and about three weeks earlier than it in ripening. The fruit of the Wilson Junior possesses a pleasant sub-acid flavour. The soil at Comyn Hill is yellow loam, from 12 to 15 inches deep, the situation high, and the air bracing. The combined effect of these favourable conditions is very marked, not only in the subject of this communication, but especially so in the growth of shrubs, flowering and otherwise, in the gardens at Comyn Hill, the keep of which reflects credit on Mr. John Dodds, the head gardener there.

DIAMOND PLUM.

This is a good grower, and a very free-bearing kitchen Plum. The fruit, of a rich dark purple colour, is large, globular, and handsome. In ordinary seasons it ripens early in September, but this exceptionally wet and cold season it is, like all other kinds and varieties of fruits, a couple of weeks later than usual in ripening. This excellent variety should be included in every collection of Plums.

COLUMBIA AND APRICOT PLUMS.

Considering the excellent quality of these two golden round Plums, the wonder is that they are not more extensively grown than they appear to be. During ordinarily warm summers they ripen by the end of August. The fruit attains to a good size, is

very juicy, and of excellent flavour. The trees, too, are good growers and pretty free bearers.

VICTORIA AND POND'S SEEDLING PLUMS.

These red egg-shaped Plums are two of the surest croppers and best all-round kitchen Plums that I am acquainted with. During the last seventeen years I have not known them to miss bearing a heavy crop of fruit. From two to half-a-dozen trees each of the above-named varieties, according to circumstances, should be in every collection of Plums. They are both capital varieties for bottling in syrup for use during the winter months. The trees, too, are of good constitution, and, owing to the immense crops of fruit which they annually bear, they make a short-jointed growth every year. *H. W. Ward*.

THE COPENHAGEN FUNGUS EXHIBITION, 1888.

"Do the Copenhagen Exhibition" is an easy enough command to be issued from the editorial sanctum, but the special mycological correspondent of the *Gardeners' Chronicle* had many misgivings before he put pen to paper to write an account of the Danish fungus show of 1888. He did the Paris show last year, and got into terrible hot water for his pains. He had then the audacity to suppose it possible for the French mycologists to be able to correct certain errors into which their English colleagues had fallen; but, alas! how wrong he was! The fierce storm of criticism which fell upon his devoted head was something never to be forgotten. He would at once take leave, therefore, to say, that "We English know everything that there is to know about fungi," but to add, *sub voce*, "at least, some of us think we do." Some of our British mycologists have never been really happy since the account of the Paris show appeared in the columns of the *Gardeners' Chronicle* twelve months ago. They have during the past year spent their days in striving to make our *Agaricus russula* into two species, and their nights in terror lest *Russula delicata* should, after all, have a tinge of green on its gills.

How the Editor of the *Gardeners' Chronicle* should have known that a fungus exhibition was to be held this year in Copenhagen is one of those inscrutable mysteries which can never be solved [We dissent, Ed.]; but the fact is, that his special correspondent found himself in the capital of Denmark in due course, with his battered vasculum in one hand and his portmanteau in the other. On his arrival the first thing which perplexed him was that there were two exhibitions going on simultaneously—a minor one, known only to the general public as the "Den nordiske Industri-, Landbrugs- og kunstudstilling," and the important one of fungi at the Botanic Gardens. The latter began by an excursion on Sunday, September 23, under the direction of Dr. E. Rostrup, to Gelskov. The party had a pleasant day, returning in the afternoon laden with spoil for the exhibition. Their finds included, *inter alia*, *Peziza bulbosa*, *A. ramentaceus*, and *Clavaria pistillaris*.

On Monday morning a start was made at 8 A.M. for the grand Beech woods at Frederiksdal; the party included a Swedish botanist from Upsala, and a small Dane, who carried two immense baskets. The latter were in due time filled to overflowing. The species collected included fine specimens of *Strobilomyces strobilaceus*, *Lactarius pigraemus*, *Clavaria botrytis*, *Boletus felleus*, *Phallus caninus*, and *Peziza succosa*. Under some Spruce Fir were found *Marasmius perforans*, *Hygrophorus agathosmus*, and *Telephora palmata*. An exceedingly beautiful *Polyporus* was found on a stump; to the writer it recalled the *P. croceus* he saw at Paris last year, but as a portion was sent to Dr. Robert Fries, of Gottenburg, we shall, in due course, authoritatively know its name (Dr. Fries has since reported it to be *P. croceus*). Not a single specimen of *Paxillus involutus* was seen all day, but thousands of *P. atro-tomentosus* were observed; this will show how the fungus-flora of the two countries, Denmark and England, differs.

On returning to Copenhagen in the afternoon the work of naming and arranging the specimens was found to be in progress by Mr. Petersen and Professor Warming with great vigour. What aid your special could give, of course, was given, but the lion's share was done by the Danish mycologists. In the collection a number of specimens appeared from Dr. Robert Fries, from Sweden; these included *A. depilatus*, *decorus*, *icterinus*, *rosellus*, *pessundatus*, and *caperatus*; *Lactarius helvus*, and *Cortinarius brunneus*. On the tables were also *Peziza onotica*, *leporina corium*, *Geoglossum glabrum*; *Boletus radicans*, *Agaricus porphyreus*, *murinaceus*, and a host of others. The specimens were neatly arranged on white plates, with their names, in their proper botanical sequence; on side tables were collections of edible and poisonous species. Around the room was a large number of specimens of rare species, preserved in spirits, such as *Hydnum coralloides*, *erinaceum*, *Morchellæ*, *Gyromitræ*, &c. There was also a collection of parasitic fungi in the recent state, and, what was of special interest, the unique collection of *Gymnosporangia* and *Ræstelæ*, of classical interest, from having been made by the late Professor Oersted.

On Wednesday (September 26) an excursion was made to Klampenborg, where the Beech forest produced some *Strobilomyces strobilaceus* in fine condition, the rare *Lactarius volemus*, and the exquisite *A. eucrous*, as usual, on an Alder stump. High up on a Beech tree, far above our reach, was observed a splendid cluster of *A. aurivellus*, a common Danish, but a rare British species, and one with which the writer was particularly anxious to become acquainted. The persistent endeavours to displace the fungus by hurling sticks and stones at it by Mr. Rostrup, jun., were at length rewarded with success, greatly to the delight of your special.

In the afternoon time was found to visit the minor exhibition, where a collection of diseased plants and trees made by Dr. E. Rostrup was the centre of attraction.

The last day of these pleasant meetings always comes too soon. This was spent at Ruderhegn, with Dr. E. Rostrup and his son; there we were shown living and dying specimens of trees, principally Firs, *Pinus sylvestris* injured by *Cæoma pinitorquum*. *P. Strobus*, killed by *Peridermium pini*; the ravages of *Peziza Wilkommii* on young Larches; of *Agaricus melleus* and *Polyporus annosus* on other trees. These with the ravages of *Hypoderma microsporum*, *Lophodermum brachysporium*, *Melampsora pallida*, *Sphæria fimbriata*, and a host of other parasites, greatly interested, even if they somewhat confused your special. Amongst the large fungi *Boletus felluus*, *Hygrophorus caprinus*, and *Agaricus bufonius* were gathered.

Later in the day the writer dined at the house of Mr. J. L. Jensen with Dr. and Mr. Rostrup; the evening was spent most agreeably in the interchange of views and the discussion of mycological problems; he retired late, to dream of Svampe, of Hexenbesen, of Heterœcism, and of High-moulding.

It need not be added that the whole visit was most enjoyable, the kindness and courtesy with which the writer was received by his Danish friends was extreme, the weather was magnificent and fungi plentiful: what more could one have wished! *Charles B. Plowright.*

THE COLOUR OF GRAPES.

In an exhaustive treatise by Messrs. Thudicum and Dupré upon wine, the colouring matter of the skins of Grapes is more or less studied. The authors say that the juice of most Grapes is perfectly free from tannin; the skin and stalks however, contain a considerable quantity of a substance which, though not ordinary tannin, closely resembles it in its properties. It is also asserted that the colour in wine from Grapes is produced by the oxidising effect of the air upon matters contained in the fruit—the so-called extractive, or bodies not yet known, and the tannic acid. From this circum-

stance we learn that colour is the effect of sunlight acting upon the tannic acid of the skins, and upon unknown bodies, that play so important a part in the colours of wine.

Mr. D. S. Marvin, of New York, considers there are causes outside of any chemical action and reaction that have led up to and originated the colour of the Grape. For instance, the influences of birds, and occasionally animals, the interchanges of action and reaction they have produced upon the slow and gradual development of the fruit. He says:—"It is as yet unknown from what plant the Grape originated, but from a careful study and personal consideration of the varied tendencies of the plant, the seedlings gradually diverging and, finally, breaking in such a number of species far away in the past, and each of these species again into such a multitude of varieties, the varieties sporting into so many new tints and colours of skin and pulps and seeds; we must, therefore, conclude that these causes have exerted such an important influence upon some one or more of the vital economics, that the colour of the fruit had come to be of very great importance to the development, growth, and welfare of the plants themselves.

The writer adds:—"In some varieties of Grapes, like the Concord, for instance, there is little or no colouring pigment in the pulp, the colouring matter, as is supposed from its herein suggested origin, residing in the skin. There are other varieties—those of which port wines are made—in which the pigments have spread from the skins into the pulp, and even the seeds are dark in most of the Riparia Grapes. *John J. Willis.*"

PTEROCARYA FRAXINIFOLIA.

It is so seldom in this country that we see produced the female catkins of this tree that we gladly avail ourselves of specimens forwarded to us from Devonshire by Sir John Walrond. The tree is a native of the Caucasus, never attaining any great height, but one which, from its bold Walnut-like foliage, is deserving of cultivation. The leaves are from 6—10 inches in length, and bear from seven to twelve oblong serrated leaflets. In autumn the leaves assume a clear lemon-yellow colour. The male flowers are borne in short sessile catkins, while the female catkins, as may be seen from our illustration (fig. 52), are pendulous elongate, reaching in the specimens sent us from 12 to 15 inches in length, the nuts provided on each side with a roundish or oblong membranous wing. The plant is nearly allied to the Walnut, and has the same curious stalked buds, but the nuts offer no attractions, save to the eye. The tree is also known as *P. caucasica*.

THE VICTORIA REGIA IN THE OPEN AIR.

THE plant in question was raised from a seed sown under glass January 13, 1888. Until the seed germinated (which was about February 1) the temperature of the water was kept steadily at 90°, after that time a uniform temperature of 85° was maintained. By May 5 the plant had made rapid progress, having leaves at that time 4 feet in diameter. It was then decided that the plant should be placed in its summer quarters—a large pond 30 feet wide and 2½ feet deep, artificially heated from the greenhouse. Good rich soil to a depth of 12 inches was wheeled in, and the plant carefully planted in the centre, care being taken to first well warm both soil and water.

As the mean temperature of the month of May in this latitude is much too low for any plant of a tropical nature, some protection for this Lily was necessary for the first few weeks; this was given in the shape of a thin cotton cloth rolled down over the pond, the framework to support the cloth consisting of stout galvanised iron wires stretched from side to side.

By heating the water in the pond to 90° sufficient heat was thrown off to well warm the volume of air under the cloth, and no difficulty was experienced in

maintaining a temperature of 65° or 70°, when it was much more severe outside. Since warm weather set in we have dispensed with the cloth except on windy days, which, by the way, are very numerous on Cape Cod, and are by far the worst enemy we have to contend with in growing the *Victoria Regia*.

When once established in its new quarters the leaves rapidly increased in size until they reached a diameter of 6 feet; and June 17, five months and four days after sowing the seed, the first flower opened. From that date until the present time, July 9, it has flowered every third or fourth night. The flowers are from 10 to 12 inches in diameter, and of a beautiful creamy-white colour the first night, while opening on the afternoon of the second day they rapidly change to a deep pink, and soon start on their downward journey to the bottom of the pond.

Since flowering no increase in size of leaf has been observed, rather otherwise; still considerable gain is made in the size of the plant, which is now 23 feet in diameter, and still increasing. *James Brydon, in the "American Florist."*

NURSERY NOTES.

ORCHIDS IN MESSRS. VEITCH'S NURSERY, CHELSEA.

SINCE visiting this nursery a few months ago I find that nearly the whole of the older Orchid-houses have been swept away, and have been replaced with new ones, and others are in course of construction. A large house has been erected at the north end of the new Cattleya-house, and is intended for flowering Orchids, on what may be termed the natural system. The house has been tastefully arranged as a rock garden with Matlock Bath stone, with an arrangement of rock in the centre down which water trickles when it is thought desirable. Ferns are planted in crevices and pockets in the rocks; the Orchids themselves are not turned out of the pots, but are placed in certain positions when they are in flower. This of course is the only way in which the house can be kept gay with Orchids all the year round. When a plant has passed out of flower it can be at once removed to the house again to make its growth; whereas, if allowed to remain amongst the Ferns and other foliage plants, it might not make a flowering growth at all. This artistic arrangement of Orchids in hothouses is not quite a new idea. It is nearly fifty years since Mr. J. D. Llewellyn, of Penllergare, constructed what he called an epiphyte-house on this system. Mr. Llewellyn obtained his idea first from reading Schomburgk's description of the waterfalls of Berberice and Essequibo, on the occasion of his first discovery of *Huntleya violacea*. He says, "I was delighted with the beautiful picture which his words convey, and thought that it might be better represented than is usual in the stoves of this country." An arrangement of rockwork was planned, with warmed water falling over a cascade, and the Orchids grew remarkably well in the moist atmosphere caused by the spray falling over the artificial rock. A drawing of the house after the plants were arranged and growing is given in the first volume of the *Journal of the Royal Horticultural Society* (1846). The house, I believe, still remains at Penllergare. In those days the number of Orchids available was not so great as now; and it will be easy for Messrs. Veitch, with their fine collection of these plants, to keep up the gay appearance of their house all the year round. At present the stately forms of *Cattleya maxima*, *C. bicolor*, *C. Harrisoni*, *C. Bowringiana*, and the lovely *Lælia elegans* may be seen rising above the Ferns and other plants; and overhanging the rocks, and suspended from the roof, are examples of *Cattleya pumila*; and graceful plants, such as *Oncidium Jonesianum*, and the golden *O. varicosum*. A good specimen, well-flowered, of *Pholidota imbricata* stood on a ledge of rock; it is an interesting species, but not very striking in appearance. In the other houses many species and



varieties were observed in flower. The *Odontoglossum-house* is well-furnished, and in the warmer houses is seen a greater wealth of bloom. *Cynoches chlorochilum* is a very robust plant, and of it there were some strong spikes; the yellowish-green flowers are not very showy, but their peculiar formation produces a novel effect.

Several racemes of the lovely purple flowers of *Barkeria Lindleyana* were observed; *Epidendrum Brassavola* was freely in flower; its large, peculiar-coloured flowers, have a distinct and handsome appearance. A fine dark-coloured form of *Odontoglossum Harryanum* was in flower, and I noted a large specimen of *Oncidium microchilum*, which had an immense spike of flowers. This is a species very seldom seen in cultivation, although it was introduced from Guatemala so long ago as 1838. The sepals and petals are of a yellowish-green ground colour, heavily blotched with brown; the lip is crimson, with a prominent white wing on each side.

Another uncommon Orchid in flower was *Geodorum candidum*, which is very pretty; the flowers are produced in a cluster at the top of the stem, and are of greenish-white colour, the lip being of a reddish-brown tint. Several species of *Phalænopsis* were in flower, many species of *Dendrobium*, and *Cypripedium*. Numbers of the choice Chelsea hybrids of the last-named are to be seen in flower throughout the year. Some of the best at the present time are *C. grande*, *C. selligerum*, *C. ænanthum superbum*, *C. albo-purpureum*, *C. vexillarium*, a dark form of *C. Harrisianum*, &c. The very remarkable *Lælia Novelty*, described recently in these columns, was finely in flower. It is a garden hybrid raised by crossing *Lælia elegans* with *Cattleya pumila* and, as usual, is intermediate in general characteristics between the two species. The sepals and petals are twisted, and of a light rosy-purple colour; lip maroon-purple, shading off to paler purple at the margin.

Cattleya porphyrophlebia × is also in flower in variety, it is a Chelsea hybrid also, produced by crossing *C. intermedia* with *C. superba*. The flowers are of a large size; sepals and petals clear pale lilac-rose, lip purplish, the throat cream-coloured, with purplish streaks in the centre. *J. D.*

A MIDDLESEX FRUIT-NURSERY.

In view of the approaching National Apple and Pear Conference at the Royal Horticultural Society's Gardens, Chiswick, the record of visits to some of our leading fruit nurseries may be of interest. We have already alluded to that of Mr. Bunyard, at Maidstone, and in due course we shall speak of others.

We now give some account of the well-known fruit nurseries of Messrs. Charles Lee & Son, situated in the parish next to Chiswick.

An inspection of the fruit quarters in the nursery under notice would almost dispel the prevalent idea (unfortunately too true with respect to many horticultural matters) that we have passed through such a dismal summer(?) season. The opinion of Mr. George Cannon (the able manager here) as to the effect of the season, in his own immediate locality, may be summed up as follows:—There is a good crop of Plums and Cherries of all sorts, also of Pears, but many of the latter are cracked, and will not develop their normal size. Apples are a thin crop, and the fruits will be below the average size. Peaches, Nectarines, and Apricots are a thin crop—in some places quite a failure—and will be late and below their usual size. The partial failure of the Apple crop was almost, if not entirely, owing to the continuance of cold, rainy weather during the time they were in bloom. Pears and Plums were set in bright, dry weather before the Apple blossom had developed.

The soil of Ealing is of a loamy nature, in most parts resting upon gravel, some portions deep loam with heavy loamy clay subsoil, rather late, not being so warm as some of its southern neighbours, such as Chiswick. It is, however, well suited to the cultiva-

FIG. 52.—*FILICARYA TEXANIFOLIA* LOW TREE. HARDY FOLIAGE AND NUTS. (SEE P. 380.)

tion of fruit trees and Roses. Attention should be given to the draining of the heavy soils—an important point. The soil of this nursery is a good deep loam, in every way suited to the cultivation of fruit trees and Roses, as is to be seen in the healthy condition of the stock growing in it.

On entering by the middle walk we come upon a fine quantity of pyramid Apples, three to four years old, worked upon English Paradise stock, many sorts bearing in a remarkably free manner, the following being the most noteworthy:—Lord Suffield, that truly never failing sort, the largest and earliest Apple that goes into market; it bears well on almost any kind of soil, but prefers a warm loam to keep the tree healthy and to have fine clear fruit. These remarks may also be applied to such sorts as Cox's Orange, Duchess of Oldenburg, American Mother, Melon Apple, and Northern Spy. A few of our best dessert sorts delight in warm gravelly or sandy loam, while some of the large culinary sorts, such as Wellington, Ecklinville Seedling, Warner's King, Blenheim, Northern Greening, and Alfriston, are not so fastidious as to soil; they like a good heavy loam. To refer again to Stirling Castle—twenty years' experience of this Apple with Mr. Cannon has taught him that it is a tree that wants all the nourishment it can get—liberal top-dressings—and then in the form of bush trees it will produce fruit nearly as fine as Blenheims. We counted on one small tree thirty of its fine fruits! Continuing sorts noted, may be mentioned King of the Pippins, Cox's Orange Pippin, Cox's Pomona, Cellini, Annie Elizabeth, Lord Derby, Potts' Seedling (what a fine sort!), Dutch Mignonne, Ecklinville Seedling, Frogmore Prolific, Winter Hawthornden, Lord Grosvenor, Manx Codlin, Warner's King, and Stirling Castle. Frogmore Prolific and Potts' Seedling should be noted as never failing croppers, and deserve to be more largely planted than is at present the case. These excellent cookers are held in high esteem at Ealing. A late-keeping free-bearing sort is Winter Hawthornden. Many newly introduced sorts seem to lack keeping qualities, with the exception of Lane's Prince Albert (excellent here), Bramley's Seedling, &c. So many sorts of Apples coming into use in the autumn at one time enhances the valuable qualities of Winter Hawthornden. Another good keeper is Northern Greening—it is especially valuable on account of its keeping good until March. Worcester Pearmain, that brilliantly coloured Apple, was well represented. Another good coloured Apple is Scarlet Pearmain. What a handsome and fine-bearing sort is Warner's King! Lady Henniker may also well be classed amongst the handsome Apples. Ecklinville Seedling, that fine Apple, always bears well here. Dutch Mignonne is a splendid sort, and is a good keeper: Peasgood's Nonsuch was observed in good condition; Lord Derby, very large; Cox's Pomona, highly coloured; Sturmer Pippin, good late sort; Ribston Pippin, light crop; Lord Grosvenor, very free.

We noticed thousands of Apple stocks worked this season with all the popular and new sorts, such as Lady Sudeley, Bismarck, The Queen, Sandringham, Brown's Codlin, Bramley's Seedling, Baumann's Red Winter Reinette, Gascoigne's Scarlet Seedling, &c. Near to the pyramid Apples are a quantity of cordon Apples on Paradise stocks, bearing good crops of the sorts already referred to. We noted a few good fruit of Peasgood's Nonsuch; near to this fine new sort is the old Nonsuch, very like the first-named, but much smaller, the abundance of its fruits making up for the size of the former.

As we journeyed through the various quarters we were struck with the very large stock of standard Apples grown, having clear stems and good heads, of such sorts as Lord Suffield, Lane's Prince Albert, Worcester Pearmain, Mr. Gladstone, Frogmore Prolific, Ecklinville Seedling, Keswick Codlin, King of the Pippins, Cellini, Potts' Seedling, Golden Noble, Warner's King, Hanwell Souring, Irish Peach and Blenheim Orange.

Mr. Cannon regards Blenheim Orange as the best Apple to plant for orchard, especially where the ground is heavy. To those having capital, and

who can therefore afford to wait, this is the Apple to plant. It does not begin to fruit for six or seven years after planting; by that time the tree attains large size, and commences to bear fine fruit which (desirable qualification to the grower!) fill the bushel, and always command, no matter how much the market may be glutted, a high price. It bears well, and so makes up for lost time. Even in old age this fine Apple is to be found doing well—an instance of which we recorded recently of a tree 50 years old, bearing 9 bushels of fruit.

Pears are fruiting best here on the Quince stock. Care is taken only to work such kinds as do best on it. A good many sorts, especially late ones, fail to grow on this stock unless double worked. Attention is given to this operation in order to include some of our best Pears on this stock.

Standard Pears are largely grown, also a considerable quantity of pyramids on Pears. On these and horizontal we noticed some good fruits of Souvenir du Congrès, Williams' Bon Chrétien, Beurré Capiaumont, Beurré Clairgeau, Beurré Diel, &c. Of other desirable kinds that we noted as doing well may be mentioned:—Louise Bonne of Jersey, Marie Louise d'Uccle, Marvellous, Pitmaston Duchess, Fondante d'Automne, Belle Julie, Fôrelle, or the Trout Pear, Bergamotte d'Esperen, &c.

Amongst miscellaneous fruits worthy of note may be recorded the fine collection of Peaches and Nectarines—a noteworthy feature here. Very close personal attention is given to these, every sort is studied as to the best stocks upon which to work them. Several thousands of fine trees are grown. We noted a lot of good extra-sized trees with from twenty to thirty shoots, and although the season has not been one of the best for even growth, we certainly never saw them so fine at Ealing before. The same may be said of the standard, half-standard, and trained trees. The last fortnight's fine weather has done much to ripen the wood. There is evidently special attention given to this stock. Standard Plums are plentiful, especially of such sorts as Victoria, Black Diamond, Gisborne's, Pond's Seedling, that largest of Plums; Orleans, Prince of Wales, and Early Prolific. Some of the pyramids are also bearing well. McLaughlin's Gage is regarded here as a fine early Gage, larger and earlier than the old Green Gage, very richly flavoured. A large stock is being worked up of The Czar, one of Mr. Rivers' seedlings. This Plum is an immense bearer, large, red, culinary, coming in at the end of July; therefore a variety to be looked after, and well suited to market growers to fill the void between Early Prolific and Victoria. We noted a fine breadth—quite a thicket, in fact—of that popular market Damson, Crittenden Cluster—very fine stock.

THE FLORAL NURSERY, MAIDENHEAD.

Mr. Owen is one of the few nurserymen who have made a special culture of Chrysanthemums and Begonias, his nursery at the present time being well worth a visit by admirers of these flowers. Of Chrysanthemums the season is yet early for the majority of varieties, but a grand lot of plants is in course of development, and includes many novelties, promising a fine display at a later date. A good selection of early-flowering novelties is now in bloom, both indoors and in the borders outside. These are admirably adapted for planting in herbaceous borders, to succeed earlier flowering plants in the flower garden, and will continue to flower until cut down by frost. A selection should include the following, which are now nicely in flower:—Mrs. Cullingford, very free white of dwarf habit; Fiberta, bright golden pompon; Nanum, blush-white, good; Frederic Marmonet, orange striped scarlet; La Vierge, fine white; Canary, dwarf yellow pompon; William Bealby, creamy-pink; Mrs. Burrell, primrose. Others, flowering in pots, were Feu de Bengale, bronzy-orange; Capucine, buff; Sam Henshaw, rosy-purple, a seedling from Comte de Germiny; M. Pynaert van Geert, golden-yellow; and Mr. William Holmes, dark crimson with golden reverse, a fine early decorative variety.

Begonias are, however, just at this season the leading flowers here, both indoors and out. Several houses are filled with a magnificent collection, the doubles being very fine. Mr. Owen has been successful in raising some excellent varieties, and some of very large proportions. I noted among the best Mrs. Graham Smith, delicate flesh-colour, very good; Miss Hammersley, apricot; Shirley Hibberd, deep rose; General Gordon, red; Scarlet Gem, bright orange-scarlet, very showy; Serapis, deep pink of drooping habit; Dr. Livingstone, rich crimson; Lord Beaconsfield, primrose; Royal Purple, distinct purple; and Davisii fl.-pl. superba, of dwarf habit, erect flowering, and very free, a good decorative variety. Arranged on shelves suspended on either side of the pathway in the houses, the drooping varieties had a very good effect.

Among single varieties, Mr. Owen's Imperial strain includes some of the largest and best yet raised, and is characterised by an erect habit, rendering sticks in most instances unnecessary. On comparing some of the individual blooms with that figured in a recent work on the tuberous Begonia, it was found that several flowers were decidedly wider, the blooms more circular, and therefore of better shape. Many of the best have been named, and are increased by cuttings, for which there is a demand, although good flowers may be obtained from the seeds of this strain—and this is the quickest means of raising a stock. Some 25,000 plants—this year's seedlings—are planted out in soil which is rather poor and stony, the situation exposed and bleak, yet they are flowering freely. Some thousands of last year's raising, similarly treated, are now a mass of flowers, quite eclipsing the bedding Pelargonium this season. Those of similar habit and colour are grouped together as much as possible, with a view to raising distinct batches of seedlings. C.H.D. [We have not observed that these flowers have done very well generally this year. It has been too cool and rainy for them. Ed.]

COLONIAL NOTES.

NEW ZEALAND.

AUCKLAND.—The summer season, which commences here about December 21 (corresponding with June in Great Britain), has entered very bright and dry, the past few days having been extremely warm—a rather sudden change after the late frequent and copious showers.

At mid-day the thermometer ranges from about 70° to 75° in the shade. The temperature to-day (December 24) at noon was, in complete shade, 73½°; under verandah, subject to sun's rays 82½°. The following are meteorological observations taken at Auckland in December, 1886:—Mean temperature, 63°·4 (average for previous twenty-one years, 65°·2); maximum temperature, 73°; minimum temperature, 49°. Total rainfall, in month, in inches, 2·50 (average for previous twenty-one years, 3·225); number of days on which rain fell, five (average for previous twenty-one years, ten).

The public gardens and recreation grounds of Auckland, of which the Albert Park and the Domain are the principal, have at present a very gay appearance, many of the principal kinds of European annuals and perennials, which here as at home have to a large extent superseded much of the old familiar bedding stuff, are forming just now quite a floral display.

The Albert Park is beautifully laid out on an eminence situated almost in the centre of the city, and from the highest elevation, on which an imposing fountain is erected, an excellent view of the spacious harbour and the greater part of the city is obtainable.

The domain is a very fine public reserve, upwards of 200 acres in extent, the greater portion being thickly wooded with indigenous and other trees and shrubs. A short time ago the City Council accepted a design for laying out this reserve, and the work, in the shape of carriage-drives and walks, is now being

carried on. On a level portion of the reserve the Auckland cricket-ground is formed, and a very fine and commodious ground it is.

Government House grounds are nicely kept, and contain several kinds of European deciduous trees and shrubs; amongst the former are fine examples of the Oak. A number of young trees have recently been planted in the grounds, and appear to be doing well; amongst others I noticed *Abies* Pin-drow, *alba*, *Picea orientalis*, *Menziesii*, *Smithiana*, *excelsa*, *Camphora officinalis*, *Photinia serrulata*, and *Magnolia purpurea*.

Among the host of plants now in full bloom the following are at their best:—Perennial and annual Phloxes, Pentstemons, Hollyhocks, Begonias, Gloxinias, Tuberoses, Lilies, Tritomas, Amaryllis, Gladiolus, Carnations, Picotees, Pinks, Balsams, Stocks, Aquilegias, Delphiniums, Verbenas, Heliotropes, Calceolarias, Pansies, Lobelias, Myosotis, Salvias, Petunias, Clematis, and Lonicera; these are now taking the place of Tea, coloured, and Bank-sian Roses, which have continued in bloom, and been very fine up till now. Pelargoniums and Fuchsias, in great variety, are plentiful, and flowering profusely, the late showers having been favourable to their growth.

Other conspicuous plants now in bloom comprise *Escallonia rosea*, *Ceanothus*, *Ruellia tuberosa*, Japanese *Hydrangea paniculata*, *Bouvardia splendens* and other vars.; *Magnolia grandiflora*, *M. purpurea*, *Ligustrum japonicum*, *Deutzia crenata flore-pleno*, Mock Orange, (*Philadelphus grandiflorus*), *Laurustinus*, and the Glory Pea (*Clianthus puniceus*), also known here by the name of Kowhiangutukaka; there are here some splendid examples of this gorgeous flowering plant.

I must not omit to mention the beautiful and picturesque Pohutukawa (*Metrosideros robusta*) belonging to the natural order Myrtaceae, and allied to the Callistemon; scattered along and overhanging the high cliffs and bluffs of the harbours the gnarled and twisted branches of these trees are now covered with charming deep crimson flowers, which are used here at this season as Holly is at home for decorative purposes, and the tree is generally known as the "Christmas Tree." The timber is highly valued in ship-building. This tree is the last that remains of the beautiful vegetation that once clad the shores of these bays and harbours.

Summer fruits are plentiful, and judging by the tempting displays in, and busy appearance of the market and fruiterers' shops on Christmas Eve, the demand was in proportion to the supply. There have been an abundance of Strawberries, and the cry of "Strawberries!—fine ripe Strawberries!" has been familiar through the streets for some time past.

The following extract, which I take from the *Auckland Weekly News*, will give your readers some idea of the extent of the Strawberry industry in Auckland:—

"By the courtesy of Mr. B. Dawson, we have been supplied with some figures which will show the Strawberry-consuming capacity of the inhabitants of Auckland. There are, in all, about 200 acres planted in Strawberries, the largest portion of this area being at Northcote. The Devonport district grows only a comparatively small quantity, while on this side there are only two or three large growers. Mr. W. Mason, of Ponsonby, is one of the largest. He has 18 acres under crop, and for a long time past has supplied from 500 to 600 boxes daily. He employs about forty boys to pick the fruit, and he has a 'tin-can band' to frighten away birds and other fruit stealers. The average crop this season has been about 40 quarts per acre per day; some farms have given a larger yield than this, and some less. The average weight of a quart of Strawberries is 23 oz. This gives us 11,500 lb. or rather over 5 tons of Strawberries consumed by the Auckland public every day during the season. Reckoning the price of Strawberries at 6d. per quart, this industry has returned to the growers the very handsome dividend of £200 per day as the gross receipts during the season. Another way to look at it is that during the season every acre under Strawberries has given a gross return of £1 per day. Although none are so

popular as Strawberries, there are many other small fruits which bring in very acceptable dividends to the growers. Clearly, gold-digging and gum-scrapping are not Auckland's sole salvation."

The New Zealand Frozen Meat and Storage Company have lately been turning their attention to the fruit-canning industry, which promises to become an important one to Auckland. Fruit growers have already taken advantage of the company's demand for Gooseberries, an instalment of something like 2 tons of fruit being sent from the Waikato district as a beginning. In all the company have received about 50 tons of Gooseberries, one grower forwarding as much as 3 tons.

The following are the prices at which fruits and vegetables were being sold by the principal fruiterers on Christmas Eve:—

Fruit.—Gooseberries, 5d. and 6d. per quart; Apples, 4d. to 6d. per lb.; Lemons, 2d. each; Pine-apples, 3d. each; Cocoa-nuts, 3d. each; Oranges, 1½d. to 2d. each; Cherries, black and red Kentish, 10d. to 1s. per pound; Loquats, 5d. per pound; Grapes, 2s. 6d. per pound; Plantains, 4d. to 5d. per pound. A few Apricots and red Currants were offered at high prices.

Vegetables.—Peas, 10d. to 1s. per peck; French Beans, 1s. 2d. to 1s. 4d. per peck; Scarlet Runners, 1s. 10d. to 2s. per peck; Cabbages, 1d. to 2d. each; Cauliflowers, 3d. each; Rhubarb, 4d. per bundle; Potatoes, 14 lb. and 16 lb. 1s.; Onions, 1½d. and 2d. per pound.

The advice of the Royal Horticultural Society of Auckland has lately been asked on the subject of exporting fruit from this province into the British market. This being to many here an important question, the Society have decided to call a special meeting to discuss the matter. When, no doubt, views will be expressed and information elicited on the subject that will help to develop the exportation of fruit from this province to England, which, if judiciously managed, should prove highly remunerative to Auckland fruit growers seeking an outside market for their produce. *Edgar Spooner, Auckland, N.Z.*

NOTES OF NATAL PLANTS.

Greyia Sutherlandii.—There seems to be a difficulty in flowering this fine shrub in England, but I think if cultivators could see it, as I have often done, in its home, the reputation it has for shyness in blooming would vanish. It certainly dislikes warm moist situations and rich soil. Never have I seen it under elevations of 4000 feet, or, in fact, growing in soil at all. Inserting its roots between clefts of sandstone rocks it holds on from year to year, and early in the spring, just before the leaves expand, sends out from the tip of each branchlet its beautiful and curious crimson flowers. Plenty of air at all times it must have. In winter it can be hardly kept too dry; in summer it needs abundant water; with as many stones as earth about the roots would nearly imitate its chosen home in Natal.

Cynium.—Some of the most lovely of South African flowers are those which have never flowered in Europe, and so peculiar are the conditions under which they grow that perhaps even the skill which flowered *Lissochilus giganteus* would find itself baffled before succeeding with the plants under-noted. Not to speak of *Disa grandiflora*, which Professor McOwan once informed me could not be got to thrive in the Cape Town Botanic Gardens, nor to mention certain *Stapelias* collected by Sir H. Barkly in remote parts of the Cape, many of which refused to grow in Cape Town, I would refer to some lovely members of the great order, Scrophulariaceae. And first to mention *Cynium*.

C. adoensis is a prostrate creeping herb with fine large snow-white flowers like a single *Petunia*, opening in early spring. A parasite on roots of sundry grasses. Figured in the "North" Gallery, Kew, No. 449.

C. tubatum.—A robust leafless species, 2–3 feet high, with very showy white flowers in pairs, 2

inches across. Flowering in midsummer, and a parasite on roots of *Labiata*, &c. In the "North" Gallery, No. 402.

C. racemostum.—A very lovely plant, 3–4 feet high, with erect racemes of brilliant magenta flowers, as large as the last-named. Grows at elevations of 1000–5000 feet, seemingly parasitic on grass roots. Blooms also at Midsummer, and called by colonists Christmas-flower.

Harveya (Aulaya) sp. This is a very good thing, though I am unable to give its specific name. A leafless herb, 12–18 inches high, with erect pale purple, Foxglove-like flowers, deliciously scented. Only found in dense shady bush, and is a parasite on roots of shrubs. See the "North" Gallery, 404, for a closely allied species.

Graderia scabra.—Habit like *Cynium advense*; flowers tubular, bright rose. Parasitic on grass-roots, and often grows in large patches with *C. adoensis*, the two making a very pretty sight when in flower.

Striga coccinea.—A little gem, about 9 inches high, with small, vivid-crimson flowers. I believe it is a parasite. Colonists believe it feeds upon and kills the roots of Indian Corn. Represented in the "North" Gallery, Nos. 402 and 449. All the above I have tried to cultivate, but in vain. Like the English Yellow Rattle (*Rhinanthus Crista-galli*) and Cow-wheat (*Melampyrum pratense*) they turn black when dried. *R. W. Allam, Maritzburg, Natal.*

THE SEED TRADE.

THE DUTCH SEED CROPS.—Large quantities of vegetable seeds are grown in Holland, and, in so far as advices up to date are to hand, it would appear that the yield will fall considerably below general expectations. In consequence of the long winter it was very late in the spring before the proper tillage of the ground could be accomplished, and the crops cultivated. The spring, at first wet, afterwards became dry, but, whether wet or dry, the weather was cold and infertile, and, as in this country, it was followed by a summer like that of our own—wanting in warmth and sunshine. Cauliflower, which is largely grown in Holland, is a very late crop, though the plants developed well; but lack of sunshine must materially affect the yield, which will, it is expected, be much below the average, while, for some reason, not so much was planted as in former years. As to Cabbages, Savoy, and Kales, the prospects of a crop are in general bad, and especially so in the case of Cabbage; such a bad crop of the latter has not been seen for several years. Swede seed is but a moderate yield; and Turnips, only partially planted, show about half a crop. Many plants of Beet perished during the winter, and those saved will give but a small return. Corn Salad has been sown so little, owing to the low prices obtained in late years, that it is doubtful if the crop to be harvested will meet the demand for seed. On the other hand, Spinach seeds were sown more numerously than is usual, but the yield does not exceed two-thirds of an ordinary crop. Peas have furnished less than an ordinary yield, and the seeds have suffered so from rain that a considerable bulk must be picked from them. Radish looked well early in the season, but during the time the crop was in flower rain fell almost incessantly; many of the flowers were washed off, and the seed-pods which set were comparatively few. Then, instead of ripening the seed, the plants went again into flower, so that not more than half a crop can be looked for. Of the black Spanish Radish there will be only a small yield. Onion seeds are standing pretty well, but are very late in ripening. English Broad and Longpod Beans show but a moderate yield. Kidney and Runner Beans will be a small crop; they podded so late there is not time enough to ripen. The Cucumber crop is regarded as a failure. Chervil was sown but little, on account of the low price it fetched, but the yield was a good one. Carrot is expected to prove a pretty good crop. The result may be summed up in the statement that crops will be below a poor average; all that have to be gathered ripen very

slowly, and the weather is too uncertain to admit of what is becoming ripe being harvested in good character.

A NEW WALNUT.

JUGLANS MANDSHURICA (fig. 53).^{*}—For the opportunity of illustrating this handsome, and, as far as gardens go, new Walnut, we are indebted to Mr. J. van Volxem, of Brussels, who kindly sent us specimens. The tree is a native of Amurland, and its botanical history is given in the works cited below. Here we need only say that it is a Walnut of very handsome appearance, the foliage (much reduced in our illustration) being of a very noble character. The fruit are obovate, somewhat pear-shaped, the nuts much more acutely pointed than in our ordinary Walnut, the shell hard and very coarsely ribbed. The kernel is not so good to the palate as the better kinds of Walnut; but considering that these represent the effect of long ages of selection and cultivation, there is reason to hope that the Mandshurian Walnut may be improved in like way. If so, the gain will be great, as the present tree is hardier than the common Walnut, and ripens its fruits some 2–3 weeks earlier in the season. As an ornamental tree, from the great size and noble aspect of the foliage (30–32 inches in length), it will be a great acquisition, while its hardiness suggests it as a good stock whereon to work the more tender kind.

"The fruit," says M. Van Volxem, "ripens several weeks before the ordinary kind, and the tree is perfectly hardy in Belgium, where, as with us, the common Walnut gets injured by spring frosts."

CULTURAL MEMORANDA.

MICHAELMAS ASTER.

The best of these are *A. novæ-angliæ*, *A. Drummondii*, *A. amethystinus*, and *A. novæ-belgii*, and if dwarf kinds are required for rockwork, *A. alpinus* and *A. discolor* will be found the most suitable, the last-named being very floriferous. All these Asters are readily propagated by division, for they spread freely. The shoots in spring should be reduced in number by pulling up the weakest, so as to leave only a fair number to bloom. To have those in borders at their best, it is necessary either to renew the soil or give the plants fresh positions, the latter being the most preferable, as the moving involves less labour; and when replanting, some rotten manure should be worked in below. *J. S.*

HYDRANGEA PANICULATA.

This is one of the most showy of hardy plants, and the wonder is, that, having been introduced some years, it is not more known and grown than it appears to be, as it is seldom one meets with it in gardens. Not only is this *Hydrangea* a desirable shrub for beds or borders, but it is a very effective greenhouse plant. In habit it is deciduous, and has small hard woody shoots, which should be cut back pretty close, as pruning it in causes the plant to break stronger and produce finer trusses of blooms. If grown in pots, or planted out in borders, *Hydrangea paniculata* should have rich loam soil, and the best situation for it is in the foreground of low evergreens, or a bed to itself on the border, where it can get plenty of sunlight. The way to propagate and increase the stock is to put in cuttings of the half-ripened wood, and if these are taken off with a heel they strike more readily; but they should be put in under cover of a handlight in sharp sandy soil, and kept close till they root. *J. S.*

PLANTS AND THEIR CULTURE.

SELAGINELLAS.—These form a very accommodating family of plants, some of which are largely used in floral arrangements, others for planting where little else would live; indeed, it would be difficult to find a greenhouse without a patch of the well known *S. Kraussiana* and *S. Martensii*; and perhaps it may be

under the plant stage, or some such out-of-the-way position, yet they rarely fail to live and clothe with pleasant greenery the bare soil or gravel. Still, the plants enjoy good positions, and where little specimens are required, plenty of light must be afforded them, or else they are apt to be attenuated and straggling. *S. Kraussiana* and other dwarf-growing species grown for the decorator's use are best grown in shallow pans, about 6 inches over. Drain them well, and fill with a light compost similar to that used for Ferns, then dibble them full of cuttings, selecting nice stout points of the shoots. When finished give a good watering, and stand them in a light position close to the glass, if in summer in an ordinary garden frame, but

named *S. apus*, and the varieties *densa* or *apoda*, also Browni; these are all of a dwarf, neat habit, more so, indeed, than *S. Kraussiana*, but not being so hardy as that species, and requiring more care in watering, they are less suited for general purposes from liability to damp off at the centre of the mass. To reduce this drawback as much as possible, avoid pouring water into the centre of the plants, this bears down the branchlets, and causes decay, that is, if the plants are full-grown and in a matted condition. Other low growing species are *patula* and *serpens*; both are distinct from the preceding, having a more rigid and wiry habit, but are scarcely so hardy. *S. Martensii* and its variegated form, when

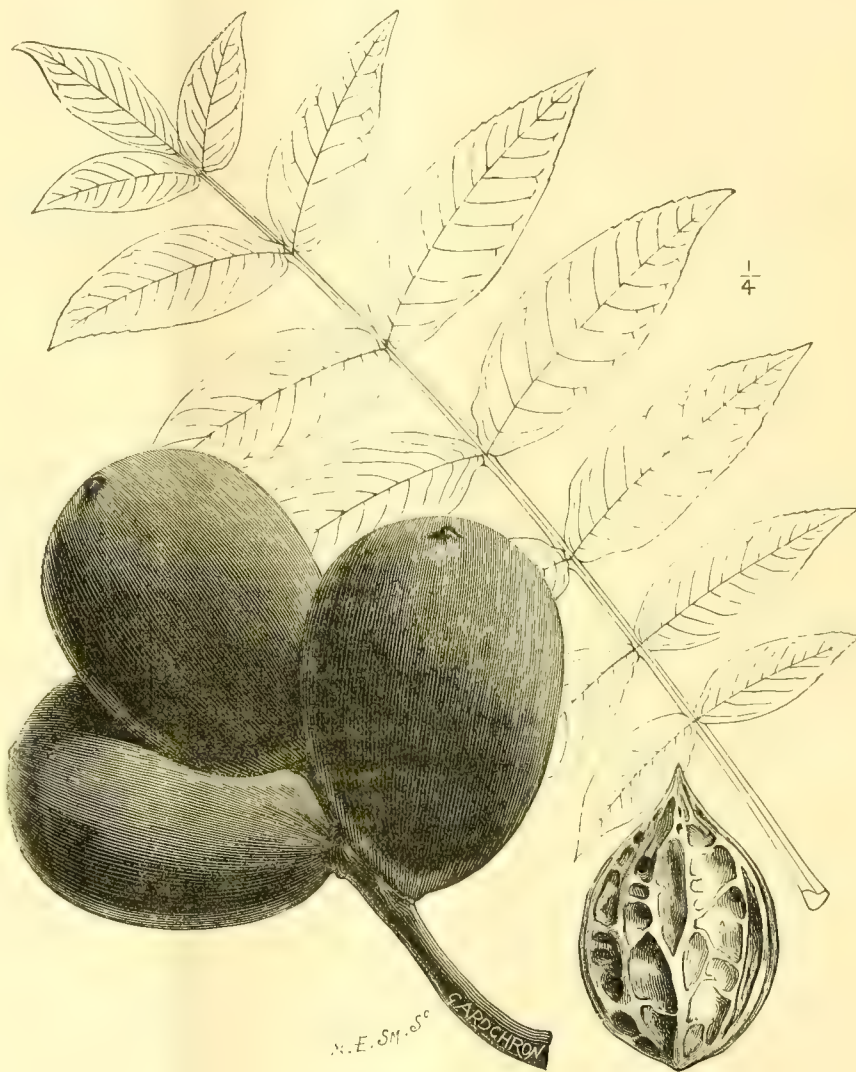


Fig. 53.—THE MANDSHURIAN WALNUT: LEAF GREATLY REDUCED.

time is saved if a little artificial warmth be afforded them, though it is not indispensable in the case of the first-named species, which is nearly hardy, and can be brought on in cold frames in the summer time. To induce a dense, even growth they should be several times clipped over, removing all straggling points, so that when they are turned out of the pans for use, they will be sufficiently matted together to prevent their falling to pieces; and the best way to put them on or round plants, is to cut through to the centre of the mass, and slip the stem of the plant through the cut, they will thus appear to have been grown in the pot or vase, and will last good for a long time. There is also a golden and a variegated variety, either of which is quite distinct, and may be included in any collection. Of others suitable for decorative purposes may be

grown in small pots, make capital substitutes or change for Ferns, and will stand a great deal of rough usage. Other species useful for growing in pots are *S. caulescens* and *inæqualifolia*, both with Fern-like branches. Of a still more erect and massive habit are *S. hamatodes* and *S. grandis*; both require a liberal allowance of root-room and stove heat. There are also several species which have a trailing habit, such as *S. Galeottii*, a free growing species, well adapted for growing in baskets or in pots to hang from the edges of shelves. *S. uncinata* or *cæsia* is also suitable for this purpose. It has a metallic steel-grey hue, much admired by some persons. Unfortunately it dies back considerably in autumn. To keep the stock neat frequent renewals must be made.

Pelargoniums.—All plants which have been cut back and have since broken should be shaken out and

^{*} *Juglans mandshurica*, Maximowicz, *Primit. Flor. Amuren.* (1859), p. 76; *Cus. de Candolle*, in *DC. Prod.*, xvi., 138 (1861). *J. Sieboldiana*, Maximowicz.

reotted before growth is far advanced. Turfy loam with some well decayed manure which has been rubbed through a sieve, a sprinkling of soot, and enough sharp sand to keep it open, is an excellent compost for them. The sweepings from a veterinary forge when thrown in a heap and allowed to lie until well decomposed, is splendid stuff for mixing in the compost for Pelargoniums. With old specimen plants it is usual to repot them into smaller pots, and again potting later on, which is an excellent practice; but good results may be had by placing them in their flowering pots at once—a very convenient method for large plants, but the other is preferable, generally. After repotting water must be sparingly afforded until the plants have fairly occupied the new soil. At this stage, when not exposed to very drying influences, I have known plants to go for weeks without requiring to be watered, other than being damped with a syringe on bright days for a short time after potting. Specially guard against the attacks of greenfly by occasionally fumigating with tobacco. Zonals for winter flowering, which have grown satisfactorily, but have not been placed in their flowering quarters, should be removed to them without delay, as if they are left out in cold frames the flower-trusses will be liable to injury by damp. The best position in which to flower these plants during winter is in rather narrow and low houses with a steep pitched roof; the range running east to west would catch every ray of sunshine, and being narrow the steep pitch of the roof would not favour drip. In arranging the plants avoid crowding, but place them in such a manner that the pots may be examined readily before giving water to the plants. A mild or rather dry air at a temperature of 50°–55°, and ventilation in small amount on bright days, will maintain a brilliant display. As the pots fill with roots liquid manure should be afforded the plants at regular intervals.

Ixoras.—To flower *Ixoras* well, a minimum temperature of 70° should be sustained, and at no season is this more requisite than the present. If there be any deficiency of heat, not only will their flowering period be short, but the flowers will lack size and substance. Keep the roots in a state of uniform moisture, but a sodden condition must be avoided, and in using liquid manure, it should be largely diluted with water, and may be applied to the plants often. Plants which are getting past their best may as well have their shoots cut back; taking any strong, clean points, which have not flowered to make cuttings. These, if rooted quickly and grown on, will make nice stuff with a large truss or two of flowers each, next year. *F. Ross, Bletchingley.*

THE FLOWER GARDEN.

FLOWER BEDS.—Sharp frosts will have been experienced generally over these islands, and the beauty of tender kinds of plants destroyed. No time should be lost in taking up all plants which are to be saved. Tuberous Begonias should have the stems cut down to within an inch of the tubers, placing the latter in a cool dry shed for a week or two, afterwards storing them away for the winter in sifted cinder-ashes or cocoa-fibre refuse, in some place where they will be safe from frost, and, at the same time, where they will neither get too damp nor too dry. I usually put them in an old stable at first, and afterwards under the staging in a lateinery. Zonal Pelargoniums of one year old should be preferred for keeping through the winter by shortening back the strongest roots; cleaning and trimming the tops in the usual way, leaving from four to six shoots to each, and afterwards put them in shallow boxes, 8-inch pots, or heel them in, on Vine or Peach borders under glass, and withhold water for the present. Alternantheras may be potted up into 3-inch pots, using plenty of drainage and a sandy loam and leaf-mould compost, placing them in warm pits or houses afterwards. *Echeveria secunda glauca* in southern counties can be safely wintered in cold frames; and, where large quantities are grown and this method is inconvenient, the better practice is to build them up in banks of cinder ashes against a south wall, outside; the only protection given being to cover them with garden mats on frosty nights. Succulents of a more tender character should be placed in pots or boxes, and put in a cool, airy greenhouse. Palms, Aralias, Phormiums, Dracanas, Grevilleas, &c., if not already moved

to their winter quarters ought to be forthwith. Avoid overwatering all such plants during the winter months, and afford free ventilation at all favourable times. Clear away to the rubbish heap all other plants not required, and if the beds are to be replanted with Wallflowers, Arabis, Myosotis, and other spring flowering plants, it is a good plan to give them a light dressing of old hotbed manure, to be dug in with the staple and left in rather a rough state for another week or ten days previous to planting. The beds for Hyacinths, Tulips, &c., will require special preparations if the best results are desired; the beds ought to be well drained, and a liberal dressing of rich manure and sandy loam dug in—planting to be deferred to a later period; meantime the bulbs should be in readiness, and a decision come to in regard to the arrangement of colours, height, &c. Beds, borders, and clumps in the winter garden which are to be filled with Conifers and dwarf evergreen shrubs, ought to be got in readiness before the end of the month.

Bedding Calceolarias.—If not already done, cuttings of these should now be put in; fortunately there is no lack of them this autumn. They are best rooted and wintered in cold frames or turf pits—the latter are preferred by many practitioners, and should be made about 4 feet wide inside measure, 2 feet high at the back, and 18 inches in front, using for the purpose turves about a foot in width and 2 or 3 inches thick, beat down with a spade, or make it firm by treading as the work proceeds. Fill the inside afterwards with half-decayed manure, such as has been used for linings to Cucumber or Melon frames, and tread it down quite firmly; on the top of this place a layer of sandy compost and leaf-mould with a surfacing of sharp sand about half an inch deep, and smooth over with the back of a spade, after which the cuttings may be inserted in rows about 3 inches apart. If the weather happens to be dry at the time give them a light watering overhead through a fine rose, cover with frame-lights, and keep them shaded from bright sunshine till rooted, and on frosty nights protect with mats. After they are rooted attend to ventilation on all favourable occasions. *J. Horsfield, Heytesbury.*

FRUITS UNDER GLASS.

PINE-APPLES which are swelling off should be kept steadily at 70°–75° at night, and 80°–85° by day. Do not use dung-water at this season of the year. When stimulants are given, dust the surface of the soil with Thomson's manure, and water alternately with water only just coloured with guano. Large-fruited varieties, as Cayenne, Charlotte Rothschild, Providence, &c., should be well watered just at the point of commencing to colour, and no more water afforded them, as a damp state of the soil during the ripening stage is liable to cause blackness at the core. Keep the bottom-heat at 85°–90° for fruiters in all stages of swelling, and any plants which may have started amongst the general stock should be removed to the fruiting division at once, as the temperatures in the other divisions will be too low to suit their requirements. If a few suckers are put in as they become large enough, they are certain to start at other times than the general stock, and require to be looked after.

Those plants which have been under special treatment for the past few weeks, and are intended to start early in the season, should now be kept perfectly quiet till the beginning of the year. If the plunging-bed be in a moist condition, little or no water will be necessary with the lowered temperature. Let the temperature for these be 60° for cold nights, and 55° for mild ones. When the sun shines and the thermometer exceeds 65°, give a little air. With the roots of the plants in a state of partial dryness the bottom-heat may be allowed to decline to 75° without fear of injury. When the bottom-heat is obtained by leaves and tan great care must be taken not to exceed 80° when fresh materials have to be added, which frequently happens at the decline of the year, when fresh material must be employed to freshen up the old. Let the bed be well trodden to prevent as far as possible a too sudden or a great rise, and to make sure partially plunge the pots until such time as the heat has declined to a safer point.

Successions should not be encouraged to grow much after this season, as the growth made now will be lacking in substance; and give only sufficient water to keep the plants in a state of health. As a plant

in a state of partial dryness will stand a much lower temperature than a wet one, 65° will be quite high enough as the night temperature, and air should be given to the pit when the thermometer reaches 70° by day. Suckers which were potted in August will have well filled their pots with roots. Should any of them be likely to require more pot-room before the winter is over it is better to give a shift into pots one size larger. Let the bottom-heat be lowered to 80° and air admitted when the thermometer reaches 70°. The night temperature should be 60°–65° at present. The fires should now be started in the afternoon to prevent a too rapid decline of the side warmth. *W. M. Baillie, Luton Hoo.*

THE HARDY FRUIT GARDEN.

LIFTING AND ROOT PRUNING.—The season is now at hand when these operations will demand attention, and in the meantime it would be well to get some sound fibry loam coarsely chopped up, so that when the work is taken in hand there shall be no delay. Loam is generally all that is needed for this purpose, unless the soil should be of a very heavy nature, when a little lime rubble or burnt soil may be added, to induce the trees to make plenty of fibrous roots and short-jointed fruitful wood. It is best to take this kind of work in hand as early in October as circumstances will allow, and while the trees still retain their foliage, so that advantage is taken of some slight root-action before the total fall of the leaf. Fruit trees, owing to loss of crop by frost and a too rich soil, are liable to make an excessive amount of unfruitful wood; such trees can always be brought to a fruiting state by being root-pruned or lifted. For bushes and low pyramids lifting the roots is the best, as they can then be examined readily, and can be laid out in a regular fashion and within a short depth from the surface. In fact by carrying out lifting in a systematic manner such trees can always be kept within bounds, which is a great desideratum in small gardens. The roots should always be lifted with a ball of soil attached in proportion to the size of the tree; the tap-roots, if any, must be cut away, and the ends of all roots that may be broken in the lifting neatly trimmed with a sharp knife, when the tree may be returned again to the same hole from which it was lifted, or planted in another situation. When filling in about the roots use a barrowload or more of the prepared soil, place some at the bottom of the hole, and mix the remainder with the staple soil, in which to lay out the roots, and tread all moderately firm. When all is finished give a good watering, and afterwards mulch the surface; and should the weather be sunny for any length of time an occasional syringing will be beneficial. For large trees root-pruning, and not lifting, must be resorted to. This will consist of taking out a trench a certain distance from the stem and securing all the roots found as the digging proceeds, taking great care to dig out the soil under the ball, and cut away the descending tap-roots. If the tree is a very large one it is not advisable to prune the roots the whole way round in one season, but to do a part one year and the remainder the next. The distances from the stem at which the trench should be taken out must always depend on the stretch of the branches, but as a rule the distance may vary from 2 feet to 3 feet 6 inches. The ends of the severed roots must be neatly trimmed off, and when filling the trench again, add a fair proportion of new soil—unless the staple is unsuitable, when it would be advisable to fill with new soil, proceeding as before. *A. Ward, Stoke Edith Park.*

VEITCH'S PERFECTION PEA.—When walking lately through the large well-cropped kitchen garden at Harewood House, in this county, I was much struck by several rows of the above-named Pea. Owing to the wet season we have had in the North, the haulm was fully 18 inches higher than is usual in drier seasons—it was close on 5 feet high. Each side of the rows was fairly thatched, for about 2 feet 6 inches, with large, well-filled pods of Peas, of first-class table quality. On the same quarter were a number of other Peas growing, including some of the newer varieties, but Mr. Fowler, the gardener, told me that none came up to Veitch's Perfection as a really trustworthy Pea during the month of September. *H. J. C., Grimston, Tadcaster, Yorks.*

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THE GARDENERS' CHRONICLE,
 Vol. III., Third Series, JAN. to JUNE, 1888.
 W. RICHARDS, 41, Wellington Street, Strand, W.C.

APPOINTMENTS FOR THE ENSUING WEEK.

SHOWS.

THURSDAY Oct. 11—Crystal Palace Fruit (three days).

MEETINGS.

MONDAY, Oct. 8—Chambre Syndicale of Ghent.

TUESDAY, Oct. 9 } Royal Horticultural Society: Fruit
 and Floral Committees.

WEDNESDAY, Oct. 10 } National Chrysanthemum Society:
 Floral Committee.

SALES.

MONDAY, Oct. 8 } Dutch Bulbs, at Stevens' Rooms,
 Dutch Bulbs, at Protheroe & Morris'
 Rooms.
 Greenhouse Plants, at Fraser's Nur-
 sery, Lea Bridge Road, by Pro-
 theroe & Morris.

TUESDAY, Oct. 9 } Vertegans' Nurseries, Birmingham,
 on the Premises, by Protheroe & Morris,
 in conjunction with
 W. C. B. Cave.
 Nursery Stock, at Tansley Nur-
 series, near Matlock, by Elze &
 Soa (three days.)
 Nursery Stock, at House's Nursery,
 Peterborough, by Protheroe &
 Morris.
 Nursery Stock from sample, at Pro-
 theroe & Morris' Rooms.

WEDNESDAY, Oct. 10 } Dutch Bulbs, at Stevens' Rooms.
 Collection of Orchids formed by M.
 Rouger-Chauvière, at 152, Rue
 de la Roquette, Paris, by MM.
 Dulong & Godefroy-Lébut.
 Nursery Stock, at North's Nursery,
 Lee, by Protheroe & Morris.
 Miscellaneous Plants, at Protheroe
 & Morris' Rooms.
 Nursery Stock, at the Nurseries,
 M Hord, Surrey, by Protheroe &
 Morris (four days.)

THURSDAY, Oct. 11 } Collection of Orchids formed by R.
 Warner, Esq., of Chelmsford, at
 Stevens' Rooms.
 Dutch Bulbs, at Protheroe &
 Morris' Rooms.
 Established Orchids and Greenhouse
 Plants, at Castle Nursery, Lower
 Norwood, by Protheroe & Morris.

FRIDAY, Oct. 12 } Imported and Established Orchids,
 at Protheroe & Morris' Rooms.
 Nursery Stock, at The Nurseries,
 Dorking, by Protheroe & Morris.

SATURDAY, Oct. 13 } Dutch Bulbs, at Stevens' Rooms.
 Dutch Bulbs, at Protheroe & Morris'
 Rooms.

The Chiswick
 Fruit
 Conference.

DECIDEDLY the most successful
 and the most generally appre-
 ciated of the Conferences that
 have been held of late years by

the Royal Horticultural Society was the Apple Congress and Exhibition held in the old gardens at Chiswick in 1883. The story has been told so often that we advert to it now only for the purpose of reminding our readers that a similar Congress, but on a more limited scale, is to be held in the same gardens on Tuesday, 16th inst., and two following days. The exhibition of Apples and Pears will be open to the general public on the Tuesday after 1 P.M., and the business of the Congress will be transacted on Wednesday and Thursday, beginning probably at 1 P.M., in the great Conservatory. The papers promised are, we believe, as to subject, of singular importance, variety, and interest; and from the known competence of the writers they are likely to be well handled.

The idea of holding this Conference at Chiswick is an excellent one. We earnestly hope that the Council will see to it that this grand opportunity is not thrown away, but that it may be utilised not only for its specific purpose but as one means of developing the garden, and rendering it the centre of all the practical work of the Society, while the library and offices in Victoria Street may be available as a "house of call," as also for business pur-

poses, lectures, and smaller exhibitions of new or interesting plants. The larger exhibitions could then be held in various localities, as circumstances might suggest or dictate. But these are matters for the future.

The second Apple Congress is about to be inaugurated, and although we cannot expect it to be so, we may still hope that it will be as successful as the former one. In the meantime we do not see that any special means have been taken as yet by the authorities to make the programme generally known to the public, and not much, if anything, has been done to apprise the Fellows, other than those specially interested in pomology. There is no time to lose.

The
 Weather.

THE dreary sunless summer was succeeded, at least, in the South, by a short spell of brilliant weather which raised our hopes and cheered our spirits. Realised visions of the Indian summer charmed us in their splendour, while other visions of "well ripened wood" and its consequences, gave us promise for the future. The realisation of this promise, however, seems destined to be visionary indeed. Some weeks ago even frost was experienced in many places, with disastrous results to Beech and other trees, specimens of which reached us without any intimation at the time of the frost to which they had been subject. Now, Mr. WEBSTER, writing from Kent, says:—

"In answer to several correspondents, I may state that the injury caused to the young (and old occasionally) shoots of the Beech proceeded directly from the untimely frost to which we were subjected some five weeks ago. In this district it is pitiable to see the Beeches, the branch tips of almost every tree being quite destroyed. No cure, save by pruning—and that would entail much labour and consequent expense—can be recommended. Nature will set matters right next spring."

This frost must have been local, but now a general visitation has occurred, and a sudden fall of temperature all over the country, but especially in the North, has given us experience in many places of "snow in harvest." Great is the wail accordingly. A week or two more of sun and drying wind would have been so acceptable, but it was not to be. The night of Sunday, September 30, was generally very cold throughout the country. Around London frost was registered in several localities, 2° at Chiswick.

On October 1, a correspondent writes from Doncaster, there was a heavy fall of snow, followed by 10° of frost. The havoc to the flower garden may be conceived. Young Conifers, Cherry Laurels, Yews, standard and dwarf Roses, had to be lightened of the weight of snow that rested on them. At Grimston, in the same county, 10° and even 14° of frost were registered on the same night. All tender vegetation was completely cut down, and Chrysanthemums were blackened.

On the night of October 2, in a garden near London exposed to the North, the frost must have been severe, though no actual record is available. Nevertheless, sufficient indications are afforded; the appearance of Sycamore leaves, as if they had been boiled; the African Marigolds reduced to the colour and substance of boiled Spinach, the foliage of tuberous Begonias looking as if they had had an attack of Potato disease, Sunflowers drooping their heads as if from very heartache at the cruel treatment to which they were exposed; Tropaeolums laid low, their stems blanched like the vegetable remains one sometimes sees thrown up on the sea-beach; white Japan Anemones reduced to the colour of

dirty rags; the beauty of *Lilium auratum* and *Tritoma* destroyed, and even *Chrysanthemums* much injured. The great severity, however, seems to have been limited to a small area. Within a few hundred yards, in a more sheltered position and in a different aspect, the havoc was not nearly so great. At Kew also, we learn that in one part of the garden one degree of frost only was registered, on the same night; while in another part six degrees were noted, with the result that *Salvias* were blackened (with the exception of *S. Greggii* and *S. Grahami*), and *Anemone japonica*, *Dahlias*, and bedding plants generally sadly cut.

But why prolong the miserable catalogue? The end has come a little sooner than was expected, that is all. The beds will be cleared for the bulbs sooner than could otherwise have been done, to the great advantage of the bulbs, and the beautiful tint of the evergreens, and especially of the young Conifers, compel attention, particularly the Colorado Spruce (*Picea pungens glauca*), whose lovely shade of colour persists throughout all vicissitudes of weather. It is worth while incidentally to mention, that among the seedling forms of this plant (better known under the erroneous name of *Parryana glauca*) every gradation of tint is observable; but even the green-leaved plant—the type, as it may be called—is a remarkably handsome Spruce. Those, however, who would know the full beauty of this shrub, should visit a nursery where large quantities are grown, as at Knap Hill, for instance, and select individual plants. Whether the plant will be handsome as it becomes adult, or whether it will become scraggy at the base, as so many Conifers, and especially Spruces, do, remains to be seen. We allude to the plant in this connection to remind any too despondent reader that the beauty of a garden need not by any means be destroyed because a smart snap of frost happens to have cut off the more tender occupants.

Another matter suggested by the frost may be mentioned. The Royal Horticultural Society has lately been reinforced by a large number of new Fellows, who, as well as many old ones, may like to be reminded that by far the most elaborate report on the effects of frost on particular plants in particular localities throughout the British Isles is that published under the auspices of the Scientific Committee by its Secretary, the Rev. GEORGE HENSLOW. Those who are interested in knowing what is likely to succeed and what is not in their respective localities, should provide themselves with a copy of this publication, which can be had for a small sum on application to the Assistant-Secretary of the Society, 111, Victoria Street, London, S.W., and to which some who were Fellows at the time of publication are probably entitled, but of this latter point we are not sure. At any rate, we know that many grumblers at the irregular appearance of the Society's publications do not avail themselves of their privileges when they might do so, while many are unaware of the value of what has been published.

THE PUBLIC GARDEN, FUNCHAL, MADEIRA (see Supplementary Sheet).—The public garden of Funchal is of recent formation, and though it has not yet had time for its full development, it has greatly improved the appearance of the capital of Madeira. Close by is the handsome little theatre—another important improvement. The garden is stocked with Palms, Dracenas, Screw Pines, Yuccas, Bamboos, Jacarandas, Astrapeas, and other inhabitants of warm climates, all growing, be it remembered, without any protection. Intermixed are



THE PHOTO. STUDIO OF THE GARDENERS' CHRONICLE, AND THE ST. MARY'S.

specimens of *Ficus*, *Araucaria*, *Brugmansia*, *Hibiscus*, *Abutilon*, &c. With these there is an undergrowth of *Mesembryanthemum*, *Gazania*, *Euphorbia*, &c. Amongst the showy climbers are *Passiflora*, *Bougainvillea*, *Tecoma*, and *Combretum*, besides the deliciously scented *Stephanotis* and *Trachelospermum*. Here and there are small pieces of water with plants suitable for such a habitat. In the course of time this mingling of vegetation derived from all quarters of the globe will produce a delightful effect. In former days there stood on this site a house of Franciscan Friars, which was suppressed by the Government more than forty years ago. To quote from Mr. J. Y. JOHNSON'S truly admirable *Handbook for Madeira*, the third edition of which was noticed in our columns a year or two ago:—"The ruined monastery and its single Palm are gone, and in their place we have a gay promenade. The chapel of the convent was entirely lined, both walls and ceiling, with human skulls and thigh-bones. The skulls were supposed to number at least 3000." More cheerful objects now meet the stranger's sight when he visits the spot.

NATIONAL APPLE AND PEAR CONFERENCE AT CHISWICK, OCTOBER 16 TO 20, 1888.—A meeting of the Executive Committee was held in the Royal Horticultural Society's Gardens at Chiswick, on September 27. Present:—The Rev. W. Wilks, in the chair; Messrs. Bunyard, Cheal, Herbst, Walker, Hibberd, Dean, Hudson, Turner, Rivers, W. Paul, and J. Smith. Papers to be read at the Conference were promised by Messrs. G. Bunyard, J. Cheal, J. Douglas, E. Tonks, S. Hibberd, J. Fraser, W. Wildsmith, E. J. Baillie, M. Dunn, McDonald, Tallerman, T. F. Rivers, Saunders, Bear, and W. Paul. Great interest was manifested in the proceedings, promises of support being received from the leading growers. It was agreed that the Conference be held in the Conservatory on Wednesday and Thursday, October 17 and 18, the first day (October 16) being devoted to the examination of the fruit, the General Committee meeting at 3 P.M. for the formal opening of the proceedings. It was agreed that no prizes be awarded, but cards of commendation for special merit will be given by the committee. It was decided that the various papers be put in type, previous to the Conference, for the more convenient use of the committee and Press. The Gardens will be opened to the public at 1 P.M. on October 16. Notices of intention to exhibit should be sent to Mr. A. B. Barron, Royal Horticultural Society's Gardens, Chiswick, not later than Wednesday, October 10.

"KEW BULLETIN."—The October number is devoted to a continuation of the reports on colonial fruits, showing the fruits produced in each colony, the price, and the supplies available for exportation.

THE NATIONAL FRUIT GROWERS' LEAGUE.

The following communication has been received without any name attached:—"The inaugural meeting of the National Fruit Growers' League will take place at St. Albans on Tuesday next in the Corn Exchange, at 7 P.M. Prior to the meeting a Fruit Conference and banquet will be held, at which several Members of Parliament are expected to take part. The Mayor of St. Albans will preside. A Conference to inaugurate a National Horticultural College at Swanley, founded by the League, will take place on the 15th inst. The grounds of the College cover 150 acres of land."

THE SCOTTISH HORTICULTURAL ASSOCIATION: POMOLOGICAL SECTION.—The subject of the formation of a pomological section in connection with this Association, which was remitted at last monthly meeting to the Council for consideration, was discussed at a largely attended meeting of that body on Friday evening, the 28th ult. It was unanimously agreed that steps should be taken to organise such a section, and the following small committee was elected to formulate the scheme, and report to the Council at a future meeting:—Messrs.

M. DUNN, ROBERTSON MUNRO (Secretary), ALEX. MCKENZIE (Treasurer), MORRISON, McHATTIE, GROSSART, and SUTHERLAND.

CODE OF JUDGING.—We understand that a book of rules for the guidance of judges at flower shows is in course of preparation by a Scottish exhibitor of great experience. It will comprise an account of an improved method of judging, with instructions for the growing and showing of all kinds of horticultural produce. We shall look for the publication with interest, as up to the present time we know of no modern treatise on the subject, except the admirable rules laid down by our late friend and colleague, THOMAS MOORE, and published in these columns, but, unfortunately, never reprinted.

MONTHLY STOCK-TAKING.—The following statistics are extracted from the "Trade and Navigation Returns" for August. The reasons for their publication are given with No. 1 of the series, published on p. 186. The Returns are divided into nine sections; we extract only such matters as concern home growers and our friends in the colonies. Table I. is made up of a summary of the imports from foreign countries and British possessions for the month of August, the total value amounting to £30,006,140, against £29,699,020 for August, 1887; or an increase of £307,120. The sections in this summary with which we are concerned are as follows:—

	Month ended August 31.		Increase (+) or Decrease (—)
	1887.	1888.	
	£.	£.	£.
Articles of food and drink—dutiable ...	2,149,332	2,291,199	+141,867
Chemicals, Dyestuffs, and Tanning Substances ...	517,310	562,960	+45,650
Raw materials for textile manufactures...	3,998,765	3,051,507	—947,258
Raw materials for sundry industries and manufactures ...	3,521,840	4,059,247	+537,407
Manufactured articles	4,644,565	5,095,674	+451,109
Miscellaneous articles	1,010,786	960,839	—49,947

Excerpt from Return of Imports for August.

Principal and other Articles.	Quantities.		Increase (+) or Decrease (—)
	Month ended August 31.		
	1887.	1888.	
<i>Articles of Food* and Drink.</i>			
Fruit:—			
Apples, raw bush.	45,229	172,713	+127,484
Oranges and Lemons "	59,633	47,906	—11,727
Unenumerated, raw "	597,663	752,789	+155,126
Hops cwt.	1,780	9,549	+7,769
Onions bush.	341,233	370,919	+29,686
Clover and grass cwt.	24,842	13,005	—11,137
Potatoes:—			
From Germany cwt.	201	281	+80
France "	90,172	39,585	—50,587
Other countries "	26,470	116,740	+90,270
Total "	116,846	156,609	+39,763
Yeast cwt.	25,623	22,912	—2,681
<i>Tanning substances.</i>			
Bark for Tanners', &c. cwt.	29,580	38,467	+8,887

A NEW FORAGE PLANT.—The *Revue Horticole* of August 1 contains an account of *Iris pabularia*. This plant was made known to the Société d'Acclimatation by M. ERMENS, who was formerly in the service of the Maharajah of CASHMIR. In Cashmir, it appears, *Iris pabularia* is extensively grown for fodder on account of its nutritive properties. It is

* In "vegetables, unenumerated," there is a decrease in value for the month of £7195.

thought that it would do well in Algiers and Central France, if the seeds were raised in a nursery and transplanted about February. In the Paris climate, which is not so congenial to it, it should not be planted out until March and April. When once rooted it is said to be almost impossible to extirpate this plant. The seed (which is offered for sale by Messrs. VILMORIN ANDRIEU ET C^{IE}.) should be well soaked before it is sown. There are many parts of India and Australia where it might be advisable to attempt the culture of this plant.

REPORT ON MACWARRIEBALLI.—This nice-sounding popular name is applied by the natives of Guiana to a new indiarubber-yielding plant, botanically known as *Forsteronia gracilis*. It was met with by Mr. JENMAN in the forests of the upper reaches of the Demerara River. Happening to strike a climber with his cutlass, Mr. JENMAN noticed a plentiful outpour of milky juice. No leaves or flowers were visible, and it became necessary to cut down the tree supporting the climber, when, though no flowers were obtained, it was evident the plant was a member of the Apocynaceæ. The rubber collected is very favourably reported on, and provision has been made to cultivate it in the Botanic Gardens for future distribution.

ALLAMANDA HENDERSONI.—If any one would realise the remarkable freedom of bloom of which this glorious New Grenadian stove creeper is capable, he should pay a visit to Gunnersbury Park, and see a stove-house there covered on the interior of the roof with this plant. The house is 27 feet by 9 feet, and the roof is a mass of yellow blossoms. It is planted out in a corner of the house, is yearly cut back very hard, and then for two months is kept without water.

BRITISH GUIANA.—Mr. JENMAN'S annual report of the Botanic Garden is an elaborate document, giving in detail accounts of the weather and the effect on the plants of a prolonged drought, albeit the annual rainfall amounted to 84.2 inches, the greater part of which fell in the early months of the year, leaving the subsequent months parched. Among the experiments recorded is that of a successful cross between *Peristeria alata* and *P. pendula*. A large portion of the report is occupied with the description of various sorts of Sugar-cane, and an analysis of their chemical composition.

EDUCATION IN HORTICULTURE.—On the occasion of the fourth annual meeting of the Society of American Florists, at New York, on August 21 last, President HILL, in the course of his address, alluding to the future of horticulture in the United States, said, in terms similar to those we have so often made use of here:—

"Fellow members, what we need, and what our profession demands, is a training-school for our children and the young men who are to follow in our footsteps, where they shall be taught a scientific and technical knowledge of the things pertaining to plant-life, and plant-growth, in their relations to soil, and heat, and water. Our need, and the need of the young men who are to follow, is such an education as will enable us to analyse soils, and to know scientifically their constituent parts, and their relation to the fibre and tissue of a plant; to be able to detect deleterious and injurious substances, to check and control the chemical action in soils, to adjust to a nicety the things termed heat, food, and water. Our most successful men are often confounded and amazed at their own failures, and can seldom assign an intelligent reason for the same. Often in the same house, under apparently similar conditions, with the same kind of soil, failure attends where in former years was had abundant success. Instances of the kind abound on every hand, and we are all familiar with them. This need not be, for with a right education and proper training—such as I hope awaits the young men of the future—these problems, so serious and difficult to ourselves, will to them disappear as the dew before the morning

sun. This knowledge, so desirable and important, can only be imparted by specialists and teachers devoted to such work. If we would have our profession keep pace with the industrial and material development of our country, it is incumbent upon us to dig deep, and lay wide the foundations on which the future of our profession is to rest. Industrial and scientific education is making remarkable progress the world over, and we, who have the good of the profession at heart, must see to it that it is kept abreast of the times. With all our boasted achievements in plant growing and flower production, the fact remains that it has been wrought out by an enormous waste of time and physical force. How to correct this, by what means, is the question uppermost in the minds of many thoughtful florists. Mr. THORPE, in his address to you at Philadelphia, expressed a desire that at no distant date there might be established a National Experimental Garden; if to that could be united a school for the special training of persons for our vocation, where a practical and scientific education would be imparted, such an institution would prove of incalculable benefit to every member of the trade."

SCOTTISH HORTICULTURAL ASSOCIATION.—

At a meeting held last Tuesday, the 2nd inst., Mr. HUGH FRASER, Leith Walk, read an interesting paper on the "Oaks of the World," Mr. M. DUNN, Dalkeith, occupying the chair. The lecturer referred to the old and historical Oak trees in the British Isles, and spoke of the merits of *Q. sessiliflora* and *Q. pedunculata* as timber trees. He also illustrated his remarks by a collection of about sixty species and varieties of *Quercus*. Among the exhibits were *A. rides Rohanianum* (ex SANDER'S importation, 1886), with three fine spikes of flower, the first that has flowered in Scotland; and *Catasetum macrocarpum*, both from Captain MAXWELL, of Terregles, Dumfries (ALEX. CHALMERS, gardener). The former is obviously a very free-flowering species. Mr. GROSSART, gardener, Oswald House, Oswald Road, Edinburgh, exhibited a dish of excellent Stirling Castle Peach from the open wall, the splendid colour of which was striking. Mr. FAIRGRIEVE, Dunkeld, sent ripe samples of Silver Peach from the open air, showing the peculiarities of the variety, and its adaptability for outdoor culture in the North. They were handsome and well developed fruit, having a creamy-white skin. From the same grower came also samples of Hale's Early and Lord Napier Nectarines, each very fine; and also COOPER'S Market Apple, a handsome dessert variety of American origin, which appears to adapt itself well to the climate of the North. A small branch, about 1 foot long, of *Abies nobilis*, bearing six cones, was exhibited by Mr. FRASER. It was taken from a tree about 9 feet high. He also exhibited a branch of *Vitis purpurea*. Mr. McMORAN, The Gardens, Glasserton, Wigtonshire, exhibited some extraordinary fruit of a variety of Fig known locally as the Glasserton Fig. The tree is over one hundred years old; fruit had been gathered from it from August 21, the average weight being 5 to 5½ oz. The tree covers an area of 600 square feet of wall,

LOBELIA CARDINALIS.—For brilliancy of foliage and flower this Lobelia is almost unsurpassed. Raised from seed, I find the red Iresine-like foliage varies a good deal, as many of the plants come green, and others only coloured slightly, but a good percentage remains true, and these can always be kept for stock. The way to increase the plant is by division, or taking the offsets. In moist situations it does very well outdoors, and is a striking object in beds mixed with patches of *Dactylis glomerata* variegata, or almost any other plants with a like foliage, white-flowered Lilies, Gladioli, &c., to afford contrast of colour. Although it will live through some winters in the open, it is safer not to leave the plants out, but to lift and lay them in boxes, and store in cold frames, when in spring they may be split up and increased. Those intended for pots should, about the end of May, be stood outdoors in some shady spot, and if supplied with plenty of water and liquid manure, they will be fine and strong for the autumn. J. S.

THE FERNERY.

GONIOPHLEBIUM SUBAURICULATUM.

WHEN seen under favourable conditions, this is one of the most beautiful of cultivated Ferns. It is especially suited for growing in hanging baskets; in fact, it can only be seen to advantage when growing in a suspended position, as the long drooping pinnate fronds cannot properly develop except where they are free. A peculiarity of this Fern is, that the fronds continue to elongate for a considerable time after the lower portion is fully developed. Under good treatment the fronds will attain to 6 feet, or even more, in length. This Fern requires a stove temperature, and is very easily damaged by allowing the temperature to fall too low. Discoloration of the fronds will surely be the result if once allowed to feel the cold. Baskets are not only preferable, by reason that they are more suitable for suspension than pots, but also allow the creeping rhizomes to spread more freely than when confined in pots. Where pots or pans, which are the most suitable of the two, are used, the plants should be kept well above the surface, using good porous soil and plenty of drainage. Although this Fern requires some care to succeed well with it, a well-developed specimen will amply repay any extra attention that may be bestowed upon it.

ADIANTUM MUNDULUM.

This pretty compact-growing Adiantum is sometimes confused with *A. Pacotti*, but it is quite distinct from that species or variety (whichever it may be considered). The habit of growth is dense and compact, the fronds are erect, the side pinnae curving inwards rather than outwards, which is the case with *A. Pacotti*; the pinnules are also smaller and more distant, and of a lighter shade of green. A very good example of this useful Adiantum was exhibited at the meeting of the Royal Horticultural Society on the 11th inst., the exhibitor being under the impression that it was a new variety, obtained by crossing *A. cuneatum* with *A. Pacotti*. This is one of the prettiest of the cuneatum section of Adiantums, and very useful for cutting from, especially for button-hole work, the fronds being a nice size for that purpose; as a pot plant, too, it may be recommended, as it forms a compact symmetrical little plant, very useful for many purposes. Pteris.

PLANT NOTES.

PRIMULA RUSBYI.

THE inquiry of an English correspondent concerning the habitat of this new Primrose prompts me to send to *Garden and Forest* a note on the beauty of the plant, its discovery and habitat. Early on the morning of May 4, 1881, I had left my camp at the end of a wagon road in one of the cañons of the base of the Santa Rita Mountains of southern Arizona, had mounted successive heights—the grassy slopes covered with a sparse growth of Oaks and Arbutus, the breezy ridges crowned with Pines, and the more difficult steep dark with the Douglas Spruce—and was clambering painfully up the long, bare crest of Mount Wrightson, the monarch of that mountain group, when I was reanimated by the exclamations of delight of my young assistant, then a little in advance, over the prettiest flower he had yet seen in Arizona, as he declared. I found it to be a Primula. It was much smaller than *P. Parryi* of the mountains of Colorado, but so nearly answering to the description of that species, that I puzzled over it, as I collected it again and again on those summits, trying to learn if it was really distinct, until Mr. Greene named it and described it from specimens collected by Mr. Rusby in New Mexico in August following. Its habitat is the meagre soil of bare ledges, and the verge and shelves of cliffs of summits of 7000 to 10,000 feet elevation. Its range from the mountains about Clifton, New Mexico, southward along the

Cordilleras certainly as far as 200 miles beyond the boundary. The beauty of this Primula must make it a choice addition to the list of plants for rockeries, &c.; and the fact that along the northern limits of its distribution it must be exposed to much freezing, is a guarantee of its hardiness. *Garden and Forest*.

THE CAPE HOYA (MICROLOMA UMBELLATA).

This pretty little creeper is abundant in some parts of the Cape, where it clothes tall grass and dwarf shrubs with a Dodder-like growth and pretty button-like umbels of rosy-red urn-shaped flowers. The leaves are linear, and the stems are thin and wiry. The flowers are developed from the leaf-axils, and they last several weeks. A plant of this species has been in flower all the summer in one of the houses devoted to Cape plants at Kew. It is planted in a bed of loamy soil, and the shoots are twined naturally about some twiggy branches. Although small, yet this plant is pretty enough to be worth growing for the decoration of the conservatory. Some one has stated that it is hardy in the neighbourhood of London, but a plant tried out-of-doors, in a sunny border at Kew, last year, did not survive the winter. The root is thick and tuberous. W. W.

THE BULB GARDEN.

NOTES ON THE LILY SEASON.

As the Lily season is now drawing to a close I send you a note of what it has been with us. The early blooming Lilies were very good, we never before had such fine *Lilium Browni* and *L. Hansoni*; *L. Szovitzianum*, *L. geminifolium*, and some *L. longiflorum* bloomed well. *L. candidum simplex* in a few situations was good, but in most the leaves were attacked, became brown, and made no growth. *L. Humboldtii* in sheltered situations was fine, but exposed on the hill went off quite suddenly in a few cold wet days, and all the buds became brown and spoilt. *L. pardalinum* and *L. californicum*, where moderately sheltered, was fine. *L. auratum* in exposed situations in full sun was good and much less affected by the wet weather than most of those which were sheltered from wind. It seems that with our two largest beds of these the one exposed on the hillside is finest in cold damp years, and the other sheltered in the wood, in dry hot years. The varieties, *rubro-vittatum*, *platypetalum* or *platyphyllum*, and *macranthum* have had some very fine flowers, but most had one or two damaged by the drip, or bruised by the unusually heavy rain to which they were exposed.

The finest growths we had were in beds in a wood at Weybridge, here the ordinary *L. auratum* had several stems from 2 to 10½ feet high, and perfect blooms, which showed finely among the trees; but even here, where bad weather has not till this year injured them, a good many were damaged. *L. Martagon dalmaticum* in most situations was good. *L. tigrinum splendens flore-pleno* and *Fortunei* bloomed well; but *L. tigrinum jucundum* had its buds injured, as was also the case with *L. Batemanniae*. *L. Leichtlinii* and *L. Parryi* were damaged, and had no good flowers. *L. polyphyllum* was not strong; our finest plant was damaged by the stem being cut to the ground for exhibition last year. *L. giganteum* bloomed well, *L. cordifolium* moderately, *L. superbum* was very fine in some situations, but very bad in others. *L. nilgherense* has grown well, but will be too late satisfactorily. The season was a late one, and I feared the varieties of *L. speciosum* (*lancifolium*) could not bloom before the frost came upon them, but the recent hot sun has brought them on fast; those exposed on the hills had their buds damaged by the heavy rain, but in most of the sheltered situations they were little injured, in some not at all, and are now blooming well. *Lilium Kramerii* bloomed well; we had one of the very high-coloured varieties; *L. columbianum* and *L. avenaceum* were good. George F. Wilson, Weybridge.

PLANTING SANDHILLS.

ON p. 365 of your last issue, "Doubtful" inquires what trees can be planted on sandhills composed only of sand blown from the sea in the North-west of England. Though the sandhills of the North-west are unknown to me, I have had considerable acquaintance with those thrown up on parts of the coast of Norfolk, and perhaps may therefore be able to impart a little useful information to "Doubtful" and other of your readers who take an interest in the subject.

If the sand shifts its position during high winds, the first thing to be done is to take steps to fix it, and nothing answers this purpose better in the most exposed parts than the planting of roots or tufts of Marram-grass (*Arundo arenaria*). Other good things in the same way, but rather more difficult to obtain in quantity, being *Elymus glaucophyllus* and *E. arenarius*. The roots of these grasses permeate the sand in all directions, and to great depths, holding and binding it together, while those parts of them which grow above ground protect the surface from the wind. No manure is actually necessary to be given towards the support of these plants—Nature provides all that is requisite for their sustenance.

The shifting sands having been specially attended to in the first instance, steps should next be taken towards the establishing of a taller growing vegetation, and for this purpose Furze, Broom, Tamarisks, Escallonias, Japan Euonymuses, Sea Buckthorn, common Elder, Willows of many sorts, Fir trees, such as the Austrian, Corsican, Maritime, and Highland Pine; and inside these Elms, Ash, Thorns, Beech, Birch, and almost any other trees that grow freely in light land may be planted. A good covering for the ground between the trees and shrubs will be found in the common St. John's Wort (*Hypericum calycinum*), and in the Periwinkles.

To establish Furze and Broom, in some instances scattering seed on the ground and roughly scratching it in will suffice; in others planting and immediately afterwards cutting off the tops almost level with the ground; and again in others it may be best to sow seeds in pots—five or six seeds to a small pot—and when grown planting out without breaking the ball of earth; hundreds or even thousands of pots may be prepared at a trifling cost. Escallonias and evergreen Oaks do not transplant freely in the usual way, but by removing a great portion of their tops and planting not much more than their roots success is insured. They may also be turned out of pots with safety, but the expense is much greater. The Japan Euonymus transplants as easily as Privet, to which it is nearly allied; and of this, as well as of Escallonias, it may truly be said that in the British Isles the nearer the sea the better they thrive. Most of these things will be much assisted by applications of manure, and the economical manuring and soiling of sand I purpose treating of later on. Tamarisks, Elders, and Willows thrive under the influence of salt blasts, and may be established in this way:—The plants having been obtained (whether small or large matters little), should have their tops cut off close to the roots and the stump then planted; the tops, then cut into lengths 18 to 24 inches long, should next be inserted in the soil, about two-thirds or three-quarters of their length being beneath, and one-third or one quarter above ground. A large percentage of them will strike root freely as the application of manure will cause vigorous growth. When shelter has been provided by these means and the site of the gardens (if it be desired to form these for the choicer products of horticultural skill), decided upon, the next consideration is the formation of good garden mould; and this, if required to be done quickly, will be a more or less difficult work according to the district. It is by no means necessary to wait till the shelter trees have grown up before commencing to form the garden, provided that all danger of sand being blown over the site determined on has been effectually prevented.

Materials for forming a good garden soil on sand

are, clay (this is indispensable), peat of some kind or other, bog peat being perhaps the best for the purpose, mud from ponds, rivers, &c.; chalk such as frost will pulverise, street and road scrapings, and rotten rubbish of various kinds. Where materials of this kind are difficult to obtain a good soil may be formed (and a permanently good one if small quantities of clay can be occasionally applied to the surface during frosty weather), by sowing grass seeds on the site where the garden is eventually to be, and grazing cattle or sheep on it, feeding them at the same time with oil-cake or other rich foods. Though this plan may take some few years to carry out, it will in most places be much cheaper than the other.

It should be remembered that there is nothing so effectual as clay in correcting the deficiencies of a sandy soil, but that to exert its influence in the highest

and in suitable combinations, nitrogen, phosphates, potash, and lime, possibly also magnesia. If they are applied in autumn these essentials need not be in so soluble a condition as when applied in spring or during a time of great root-activity. Sand has no power to hold these soluble manurial constituents, and therefore winter rains are apt to wash them down and away from the roots; but when roots are in full activity they would seize on them as the rain carried them in, and the above-ground portions of the plant would quickly show the benefit derived. In many places certain difficulties peculiar to the locality may exist. If any such appear to exist in "Doubtful's" locality, and he would mention them, I would gladly endeavour to point out such ways as seemed to me most desirable to adopt for overcoming them.

A hint as to the fertilisation of maritime sand-hills may be taken from the guano islands, where sea-birds are continually adding their dung to former deposits thereof—their bodies after death also making further additions to the accumulations. Sea-birds, to a greater or less extent, perform the same functions all round the coasts of Britain, but unless there is vegetation to make use of the materials they deposit, these are eventually dissolved and carried away by rain. Where vegetation is present it seizes on these materials by means of its roots, as they become washed into the ground by rain, and it profits immensely thereby. There are many berry-bearing plants which will be found extremely useful in sand-waste planting, and which will help greatly to attract and sustain game. Some of these likely to succeed well are Cotoneaster Simonsi and other Cotoneasters, the common English Blackberry, Privet, and Elder, Berberis of several kinds, the Blackthorn or Sloe, Whitethorn, common Holly and Snowberry; the more animal [query rabbits?] and vegetable life (within reasonable limits) that can be got to thrive together, the more quickly will a rich surface mould be formed from the decay of leaves, twigs, dung, &c. This accumulation of mould will go on to some extent without any aid from human art when once started, but human art may do much to increase the rapidity of the accumulation, and to retain it in a useful condition after production. Though "blowing" and shifting sandhills may be fixed by vegetation, and luxuriant vegetation may be established on these as well as on more level sandy wastes, yet there are a few places of the kind where it might not be advisable to attempt anything of the sort. I know of one long stretch of sandbank on the coast of Norfolk which, if it were once fixed by vegetation, its destruction would in a few years be insured, and disaster to the country now protected by it would inevitably ensue. It is a most interesting spot, and a description of it, the natural causes producing it, and its effect, deserve treatment in a separate article. With hardly an exception, however, I would undertake to cover any sandbank above high-water mark anywhere round the British Isles with more or less luxuriant vegetation in the course of four years or so, if the opportunity were given me; and in some cases I have no doubt but that the produce might be made to pay expenses. J. E. E.



FIG. 54.—ADVENTITIOUS BUDS ON PHALENOPSIS STUARTIANA.

degree it must be thoroughly pulverised and mixed with the sand, and that nothing pulverises clay like frost, to which, therefore, it should be as much exposed as possible before ploughing or digging it in. Usually it may be obtained and applied during frosty weather most cheaply, and certainly in a manner most likely to be effectual.

With regard to manuring these sandy tracts, there are, of course, many methods; and while some will be best in some districts, others will be best in others. Farmyard, stable, earth-closet, nightsoil, seaweed, fish, and many other "complete" manures (and by complete manures I mean those which contain in easily assimilable form all the essential combinations necessary to add to the poorest soil), may be best accordingly as the facilities for obtaining them exist. Where these natural manures cannot be reasonably obtained, complete artificial manures will suffice; they must contain in proper proportions,

PHALENOPSIS STUARTIANA.

THE accompanying sketch (fig. 54) shows the formation of leaf-buds on the inflorescence of this plant subsequent to the fall of the flowers—a fact which will be more gratifying to the amateur than to the nurseryman, as the buds afford a ready means of propagation. Our sketch was taken by Mr. Weathers from a plant in the Royal Gardens, Kew.

HORTICULTURAL CLUB.—The first dinner and *conversazione* for the session 1888-1889 of the Horticultural Club will take place at their new rooms, Hotel Windsor, Victoria Street, Westminster, on Tuesday, 9th inst., at 6 P.M. The subject for discussion will be "Peaches," to be opened by Mr. T. Francis Rivers.

PLANT PORTRAITS.

ACALYPHA TRIUMPHANS, Lind. et Rod., *Illustration Horticole*, September, t. 55.—Ornamental stove foliage plant, leaves copper-coloured.

ALSECOSMIA MACROPHYLLA, Mrs. Hetley, *Native Flowers of New Zealand*, t. 19b.

ANTHURIUM HOOKERI, Mrs. Hetley, *Native Flowers of New Zealand*, t. 14.

BRASSIA LEILLIANA VAR. *TRISTIS*, *Orchid Album*, t. 347.

CATTLEYA LABIATA, VAR. *MAGNIFICA*, *Garten Flora*, t. 1281.

CELMISIA GLANDULOSA, Mrs. Hetley, *Native Flowers of New Zealand*, t. 21b.

CELMISIA LONGIFOLIA, Mrs. Hetley, *Native Flowers of New Zealand*, t. 21d.

CISTUS CRISPUS, *Garden*, September 15, 1888. Flowers red.

CLIANTHUS DAMPIERI, *Illust. Monatshefte, f. d. Gesamt-Interessen des Gartenbaues, &c.*, September, t. 14.

CROCUS IMPERATI VAR. *PURPUREUS*, *Gartenflora*, September, t. 1280 (2).

CYRTANTHUS MCKENNII, *Gartenflora*, September, t. 1280 (3).

DENDROBIUM CUNNINGHAMI, Mrs. Hetley, *Native Flowers of New Zealand*, t. 17.—Leaves linear, flowers white, small.

DENDROBIUM MACROPHYLLUM, *Illustration Horticole*, t. 57.—Flowers green, spotted and streaked with purple. New Guinea.

DISA LACERA, *Journal of Horticulture*, September 6.

DISA RACEMOSA, *Journal of Horticulture*, September 6.

ERYTHRONIUM HENDERSONI, *Garden and Forest*, August 29.

EUCALYPTUS CALOPHYLLA, *Revue Horticole*, September 16.—South-west Australia; flowers greenish-yellow.

FORSTERA BIDWILLII, Mrs. Hetley, *Native Flowers of New Zealand*, t. 21c.

FUCHSIA PROCUMBENS, Mrs. Hetley, *Native Flowers of New Zealand*, t. 19a.

GENTIANA SAXOSA, Mrs. Hetley, *Native Flowers of New Zealand*, t. 24a.

LELIA PURPURATA BLENHEIMENSE, *Orchid Album*, t. 346.

LIBERTIA IXIOIDES, Mrs. Hetley, *Native Flowers of New Zealand*, t. 23.

LINUM MONOGYNUM, Mrs. Hetley, *Native Flowers of New Zealand*, t. 24b.

LYCUM PALLIDUM, *Garden and Forest*, September 12.—New Mexico. Hardy shrub.

MAGNOLIA CONSPICUA, *Garden*, September 22.

METROSIDEROS ALBIFLORA, Mrs. Hetley, *Native Flowers of New Zealand*, t. 18.

METROSIDEROS FLORIDA, Mrs. Hetley, *Native Flowers of New Zealand*, t. 16.

NARCISSUS PACHYBULBUS, *Gartenflora*, September, t. 1280 (1).

NARCISSUS PSEUDO-NARCISSUS, Horsefield's var., *Garden*, September 8.

ODONTOGLOSSUM VENILLARIUM ROSEUM, *Orchid Album*, t. 348.

OLEARIA ILICIFOLIA, Mrs. Hetley, *Native Flowers of New Zealand*, t. 21a.

ONCIDIUM FORBESII VAR. *SPLENDENS*, *Moniteur Horticole*, July 10.

ONCIDIUM INTERMEDIUM, *Orchid Album*, t. 345.

PIMELEA PROSTRATA, Mrs. Hetley, *Native Flowers of New Zealand*, t. 22.

PITHECOCTENIUM BUCCINATORIUM (*BIGNONIA CHERERE*), *Bull. Soc. Tosc.ortic.*, t. 11.

QUESNELIA WITTMACKIANA, *Garten Flora*, t. 1281.

SACCOLABIUM GUTTATUM GIGANTEUM, *Orchidophile*, September.

SENECIO ELEAGNIFOLIUS, Mrs. Hetley, *Native Flowers of New Zealand*, t. 15.

SENECIO HERCORTI, Mrs. Hetley, *Native Flowers of New Zealand*, t. 20.

SENECIO HUNTII, Mrs. Hetley, *Native Flowers of New Zealand*, t. 13.

SENECIO ROBUSTA, Mrs. Hetley, *Native Flowers of New Zealand*, t. 21.

USEFUL INVENTIONS.

THE new patent horizontal tubular boiler which is made by the Thames Bank Iron Company is shown in the illustration (fig. 55.) The boiler in itself differs in no way from the ordinary type of horizontal tubular boilers, which possess the advantage of requiring but little depth for a stoke-hole, and yield a great amount of surface to be heated by the fire, which is incased by pipes. The great drawback to these boilers, however, is in the joints, which are frequently sources of leakage. In the new boiler of the Thames Bank Iron Company the joints are not caulked—a tedious and troublesome job—but are formed by the compression of rubber rings between the tubes and boiler castings, the soundness of the joint being secured by wrought iron bolts and nuts, which tie the castings together. This form of joint provides for the expansion and contraction of the boiler due to the changes of temperature while in action, and by an inversion of the socket into the waterway of castings the rubber ring is surrounded by water, thus securing the joint from damage. Moreover, in caulking the joints, a considerable time is occupied, but by the new system a boiler may be put together in an hour or two.

Messrs. Gregory & Evans, nurserymen, &c., of Sidcup, have two of these boilers in constant use at their nurseries, where we recently inspected them.

THE BRITISH FRUIT GROWERS' ASSOCIATION.

ON September 8 last, at the conclusion of the Conference of fruit growers in the Crystal Palace, Mr. J. Cheal proposed a resolution to the following effect, namely:—"That it is desirable an Association of fruit growers should be formed for the promotion of profitable fruit cultivation, and to improve the methods of distribution—the Executive Committee of the Conference being requested to prepare a report on the subject, to be submitted to the next meeting at the Crystal Palace, on October 11 this year."

In pursuance of this resolution the Executive Committee met at 5 P.M. on Thursday, September 27, at Anderson's Hotel Fleet Street, T. Francis Rivers, Esq., in the chair, twelve members being present. A draft of the Association was then read, considered at some length, and finally adopted.

The adjourned Conference will be resumed at 2 P.M. on Thursday, October 11, at the Crystal Palace.

The following is the draft adopted at the above meeting, and all desirous of joining the Association should communicate with the Hon. Secretaries, Mr. Lewis Castle, Hotham House, Merton, Surrey; or Mr. William Earley, Ilford Essex:—

The title will be, "The British Fruit Growers' Association."

Objects.—To promote the profitable culture and the improvement of fruit in the United Kingdom, and to facilitate the distribution to consumers.

Methods.—It is proposed to effect these objects by the means of meetings and conferences in the metropolis and the provinces; the collection from all districts of reliable information bearing on the subjects, its dissemination through the daily and horticultural Press; by the publication of annual reports, with such others of a special character as the funds of the Association may permit; and by securing the adherence of local societies to the object of the Association.

Membership.—A subscription of not less than 5s. annually shall entitle any person duly elected to membership of the Association, including admission to all conferences and general meetings, one copy of each publication issued by the Association, and such further privileges as may be subsequently determined. First subscriptions to be paid at the date of joining, and subsequently annually on January 1.

Officers.—The officers of the Association shall com-

prise a President, two Vice-Presidents, a Treasurer, and two Honorary Secretaries.

Committees.—The business of the Association shall be conducted by the officers, a General Committee of forty members, an Executive Committee of fifteen members, five to form a quorum, and special sub-committees to be elected by the latter, the officers being *ex-officio* members of all committees.

Election of Members, Officers, and Committees.—Proposed members of the Association to be nominated by two members, and elected at any meeting. The officers to be elected annually. Ten members of the General Committee to retire annually, but to be eligible for re-election; the retiring members in the first two years to be decided by ballot, and subsequently in the order of election. Nominees for the committee to be proposed and seconded by two members of the Association at the annual general meeting. All elections to be effected by open voting. The Executive Committee to be elected by the General Committee from amongst themselves after the business at the annual meeting.

Meetings.—The annual general meeting shall be held in December of each year to receive the report of the General Committee, for the election of officers, committees, and the transaction of any other important business.

The General Committee shall hold at least two meetings, and the Executive Committee shall meet as often as necessary, in each year. The Executive Committee to decide the dates and places for all meetings and conferences.

ORCHID NOTES AND GLEANINGS.

ANGULOAS.

THESE plants, although not amongst the most graceful of Orchids, are, when in flower, some of the most striking—few at that time attracting more notice. They adapt themselves freely to cultivation, and on this account may be recommended to beginners in Orchid cultivation, and to those who have no houses set apart for them. In most of the species the pseudo-bulbs are very large. We have found those of *A. Clowesii* measuring 8 inches high by about 3 inches across, bearing from the top three or four broad, stout leaves 2 feet in length. The flowers are large and cup-shaped, with thick, fleshy sepals and petals; they are usually borne singly on erect scapes a foot high, frequently, however, on vigorous plants we have had twin-flowered scapes. The scapes are produced from the base of the young growths, sometimes as many as six being clustered round one growth.

Anguloas are best grown in pots, or if the specimens be large, in moderately deep pans, which should be filled to one-third their depth with drainage. The compost should consist of equal parts of peat and loam, from which the earthy particles have been shaken, with a small addition of chopped sphagnum and silver-sand. It is well to build up the compost, so that the bases of the pseudo-bulbs are above the rim of the pot, for although the plants must have abundance of water when growing, the very young growths with the embryo flower-scapes they enclose are liable to damp off if the water lodges about them. Being gross feeders, these Orchids are much benefited by occasional waterings with weak manure-water, and we also have found that the vigour of the plants is enhanced by giving the soil a sprinkling of fish manure about three times during the summer. Repotting should be done in spring, when any loose or sour soil should be picked or syringed off, and a good shift given. They may be grown at the cool end of the Cattleya-house, or in the cool-house. *A. Clowesii* is the best known species, and one of the freest growing. It has tulip-like flowers, measuring 2½ inches across, with bright golden-yellow sepals and petals, and a white lip; the lip is hinged, and as the flower is moved rocks to and fro. The flowers give off an odour resembling that of paregoric.

A. Ruckeri resembles the above in the shape of

its flowers, which have sepals and petals with a yellow ground colour thickly blotched with crimson; the lip is deep crimson. The variety sanguinea, which is flowering now at Kew, is very rare; it has flowers of a deep blood-red colour.

A. uniflora is a free-blooming species with white flowers tinged with pink on the inner side. Like the two preceding species it is a native of Columbia, and flowers in July and August. There are a few other species and hybrids in cultivation, but they are rare, and not easily attainable.

SACCOLABIUM COELESTE.

This species, one of the latest acquisitions in Saccobiums, has recently been flowering in several establishments near London. It is a beautiful little Orchid, similar in habit to *S. miniatum*, with erect, densely-flowered racemes, 3 to 4 inches high. A distinct character is given to the species by the colour of the flowers, of which the tips of the sepals and petals and the front portion of the lip are sky-blue—one of the rarest colours to be seen in Orchids; the rest of the flower is white. The plants should be grown in sphagnum, the baskets being suspended from the roof in the warm house. Free supplies of water are necessary in summer, with much less in winter; at no time, however, should they be allowed to become quite dry at the root. *W. B.*

HOME CORRESPONDENCE.

SHELTER FOR ORCHARDS.—In common with most of readers I have read with great interest your report of, and the papers read at, the Fruit

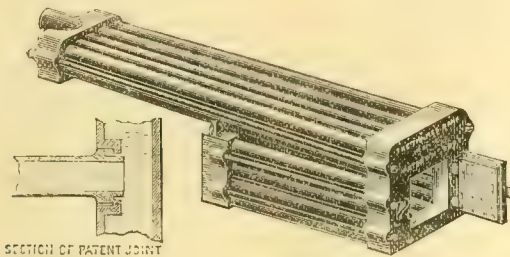


FIG. 55.—NEW HORIZONTAL TUBULAR BOILER. (SEE P. 390.)

Conference held at the Crystal Palace lately. Excellent instruction was offered to intending growers, but one important thing was lost sight of—not one of the gentlemen once alluded to the subject of shelter for orchards. Now to my mind this is a serious omission. In some place Nature provides this by hills, or man has done so perchance by woods, and the growers of fruits are successful, never dreaming that half the success is due to situation. When a young man I grew Peaches in the valley of the Thames, on the open walls, as large as my fist (not a small one) and exhibited them successfully; but in later years I discovered that the same could not be done in some places without a good deal of shelter, either by planting trees or employing glass structures. Again, Apple or Pear trees may grow on well in an orchard during the summer if the season be genial, but just when the crop is nearly ready for gathering there comes a violent gale of wind, and if the orchard is not well sheltered half the crop is blown down; and the lamentable part is that it is always the finest fruit which fall. No longer ago than last week a gentleman told me at the Brighton show that last year he had half his fruit blown down and consequently spoiled; for, remember, with some few exceptions, the longer fruit can be left on the tree the longer it will keep. Some twenty years ago Apples were very scarce in this country, but I heard of an orchard not far from here, where there were plenty for sale. How can this be? was the question one naturally asked oneself—there is some good reason for this; and sure enough, I found the trees surrounded by a belt of Pine trees. This had protected the blossom in the spring, and again in the autumn; and so satisfied was I of this that before a month had passed a plantation of Scotch and Austrian Pines was made around our orchard and with the best possible results since. I

often observe in the cold nights of autumn the cattle and even the sheep find shelter in my plantation, the trees composing it being now 30 feet high. These remarks on shelter apply to fruit trees as dwarfs and cordons, as well as to standards, for an equinoctial gale will blow down much of the finest fruit on any kind of trees unless these are protected. *J. Rust, Bridge Castle.*

BEDDING PELARGONIUM REV. F. M. ATKINSON.

—One of the most popular of bedding Pelargoniums, perhaps the most popular, is *Henri Jacoby*, a deep crimson, or almost maroon coloured variety. But it is not a good dull weather colour; and therefore I prefer the one which heads this paragraph, because the flowers are of a very bright and effective shade of crimson and it is also a good green—quite equal to the other, and remarkably free too. Calling the other day upon a gardener who grows bedding Pelargoniums, he stated he should for the future discard *Henri Jacoby*, and use the *Rev. F. M. Atkinson* in its place. *R. D.*

THE HARPALIUM RIGIDUM SEMI-PLENUM OF THE ROYAL HORTICULTURAL SOCIETY'S FLORAL COMMITTEE.—On p. 364 of the *Gardeners' Chronicle* I read that a First-class Certificate was granted at the meeting of September 25 to Mr. Ware for *Harpalum rigidum semi-plenum*. I have a few remarks to make, about this plant and its certificate. In the first place the generic name *Harpalum*, authorised by De Candolle, is disallowed by Bentham and Hooker in their *Genera Plantarum*, and is not admitted by Asa Gray in his *Flora of North America*, and the genus *Harpalum* has been restored to *Helianthus*; so I think it fair to protest against this sanction given by the Royal Horticultural Society's Floral Committee to an

obsolete name. In the next place, as regards the plant itself, I received after the meeting a letter from a distinguished member of the Floral Committee asking me to give him roots of the plant which had been certificated, which he was told came from my garden. I replied that I was in doubt about the identity of the plant. I have a semi-double variety of *Helianthus rigidus*, which I have given to several friends, but this could hardly be in certificating condition as late as September 25. My correspondent then told me that the flower was labelled "*Harpalum latiflorus* of Mr. Wolley Dod." This is a gross libel on my naming, and I am sure I never called a plant so far "out of its name," but it gave me a clue to the truth as I did give Mr. Ware *Helianthus latiflorus*, and I have no doubt that the certificated plant is *Helianthus latiflorus* (Persoon) of Asa Gray's *Flora of North America*, vol. ii., p. 275. The history of this plant is as follows:—It was given to me by Mr. W. Thompson, of Ipswich, about six or seven years ago as *H. doronicoides*. This I soon saw it could not be, but thought it then a late semi-double form of *H. rigidus*. Two years after I saw the same plant at Kew labelled *H. latiflorus*, the Curator of the herbaceous garden there, assuring me that the name was certainly right. Having this clue I carefully went through Dr. Gray's description, and concluded that the plant is *H. latiflorus*, and nothing else, and I wrote to Mr. W. Thompson, informing him, of this—though he was not convinced. In the course of Dr. Asa Gray's last visit to England, two or three years ago, he went to Mr. Thompson's nursery, and on being shown this Sunflower, at once recognised it as his *H. latiflorus*. We have thus the very best authority for establishing the name. I must say that, as regards habit and leaf and flower, the differences which separate it from *H. rigidus* are

few and slight; the leading distinctive character, as given by Asa Gray at the head of the species is, that when the florets of the disc are fully expanded, the prevailing colour of the disc in *H. latiflorus* is yellow, whilst that of *H. rigidus* is black, and this difference is conspicuous at a glance. Anyhow, as these have been made separate species we had better follow the most recent authority in the arrangement of the genus. Perhaps the semi-doubleness of our English stock may be accidental, and not essential to the species. *C. Wolley Dod.*

A CURIOUS PELARGONIUM SPORT.—A vigorous growing double zonal Pelargonium bearing bold trusses of violet-crimson flowers, has in one of the plant-houses at Hanger Hill House, Ealing, thrown a very strong growing sport of the nosegay type, having very large and somewhat starry cerise coloured blossoms. It is like going back to a progenitor the onward march of the species had left hopelessly in the rear. But who is equal to interpreting the rationale of a transformation? Really, Mother Nature plays some curious pranks occasionally! *R. D.*

OLD FAVOURITES UNDER NEW NAMES.—It is frequent cause of annoyance to gardeners when, having procured some plant under a new name and watched its progress toward maturity, it turns out an old well-known variety. This is trying and vexatious where annuals are concerned, but it is much worse with orchard trees. Two or three years ago a correspondent in your paper strongly recommended an Apple of French origin named after the raiser at Amiens, "*Jacques Lebel*." With some difficulty I procured two trees, which are now in fruit. The Apple proves to be identical in leaf, growth, and fruit, with *Bramley's Seedling*. I send you an Apple of each for inspection. If it were the fruit alone which resembled each other, there might be a mistake. The growth and habit of trees is as useful in identifying varieties as the fruit itself, and all these are unmistakably the same. If *Jacques Lebel* be an old French Apple, I can only suppose that some nurseryman has seen its splendid growth, and given it an English name; for, whatever be its source, the Apple is one of the best in cultivation. *James Ellis, The Gynsills, Leicester.* [You must have had sent you *Bramley's Seedling*, as *Jacques Lebel* is a different thing. The latter was distributed by André Leroy in 1849, it having been raised by a nurseryman of that name at Amiens. *Bramley's Seedling* is of more recent origin. Ed.]

THE JAPANESE ANEMONES.—It seems impossible to praise these too highly in respect of their value as autumn-flowering plants in the open. Some beds of the old type, and the white and rose-coloured varieties to be seen at the Royal Nursery, Slough, are masses of bloom, and thousands of flowers can be cut from them. It seems to do well in a sunless as in a sunny spot, but it does a great deal better in the latter. When planted, it requires a year to establish itself, and then when it begins to grow it does so with great freedom, and multiplies with wonderful rapidity; any small piece of root appears to make a plant, and the plant puts forth running rootlets, and so increases itself rapidly. It is, perhaps, somewhat singular, seeing that it bears seed, that no addition has been made to the varieties by means of seedlings. *R. D.*

THE HYPOCAUST GARDEN.—I find I expressed myself rather vaguely, in my short paragraph on this subject last week, I desired to convey the fact of the quick ripening of the Pine-apple even in such a season as we have had this year. It was in fact ripe ten days before I sent it to you. I should feel greatly indebted if you would give your opinion as to the flavour, *pro bono publico*. I think Kingsley, who made some experiments in this direction a few years since, found the quality of Peaches, &c., very good. I may add that some *Pleiones* thrive in the warm earth and are now throwing up their flower-stems. *R. T. C.* [As we stated last week the juice was abundant and the flavour excellent, better than in many stove pines we have tasted. Ed.]

ANNUAL CHRYSANTHEMUMS.—Calling at Gunnersbury Park, Acton, a few weeks ago, I was much struck with the beauty of some beds of annual Chrysanthemums that Mr. Roberts had planted out. Their profusion of bloom and brilliance of colouring is something remarkable. It is nearly a century ago that *Chrysanthemum carinatum*, or more popularly known as *tricolor*, came to us

from Barbary. It was no doubt much inferior to the fine type grown in the present day, which is represented by a large white Daisy-like flower, having a yellow ring round a dark disc. The dark disc is a leading feature in all the varieties of *C. carinatum*; it is like the human eye, giving life and expression to the blossom. In Burridge's *Chrysanthemum* (*C. Burridgeanum*) we get still a slight yellowing round the disc; but added thereto and farther from the centre, is a zone of bright crimson—a charming variety. In the Sultan and *atro-coccineum* we get two varieties, one with a broad margin of maroon crimson, and the other of orange-crimson, stretching away in each case from the zone of yellow round the dark disc to the petal edge—both very showy and striking, but varying from seed. Lord Beaconsfield is in the same way, but with the margin striped with gold, and a slight edging of the same. W. E. Gladstone has a margin of crimson and violet, but the seed progeny varies greatly in character. One variety has an entirely gold margin to the dark disc, while another, named *venustum* has the usual golden ring round the disc, then a very slight one of reddish-purple, and the margin mottled white and pale rosy-purple. One particularly striking variety is very large, with abroad pale crimson zone filling up pretty well half the space between the disc and the petal edge, the remainder buff, slightly will come true tinted with orange. The typical variety, *carinatum*, comes true from seeds, and any one of the others is certain to give a variable progeny. If a packet of seeds of newest varieties in mixture, be sown, and the plants put out in a bed of good soil, wide enough to allow ample room for the plants to develop, they would afford a striking mass, surprising on account both of their beauty and variety. The richer the ground, and the larger the space afforded each plant, the finer will be the individual flowers, and the more brilliant the colours. And these annual *Chrysanthemums* are remarkably persistent bloomers: Mr. Roberts cuts hundreds of blossoms from his beds, which, by the way, are greatly esteemed for house decoration, while they go on flowering freely from strong growths. There is every prospect they will go on furnishing an abundance of flowers until the autumnal frosts lay the plants low. R. D.

DAHLIAS CHANGING COLOUR.—Let me assure "Old Subscriber" that there must be a mistake somewhere about his Dahlias changing colour as he describes it. Either the roots or cuttings got mixed by accident, or by some mischievous person. I have grown and flowered Dahlias by the ten thousand for many years here at Woking, but never found them to vary like that unless propagated by seed, from which latter, as is well known, you get pretty nearly as many varieties as plants. However, amongst five thousand seedlings from good sorts, which I raised one year, I only got one which was an improvement. They generally all turn out inferior to the parent. I had better luck with sports, as, for instance, a few years ago, I noticed on one of my *Dahlia Juarezi* a flower which was streaked with orange-scarlet. By singling it out and propagating it by itself I succeeded in time in getting a plant which produced nothing but orange-scarlet flowers, while retaining all the shape and characteristic growth of the parent. It proved constant, and I disposed of the stock of it to Mr. Thomas Ware, of Tottenham, who I see is showing it this season as *Cactus Dahlia Professor Baldwin*. I believe it to be the only other real *Cactus Dahlia* besides *D. Juarezi*. I may add that I am at the present time following up another sport of the same variety, which produces flowers of a beautiful purple colour; but I have not succeeded in fixing it as yet. *Gustav Wernig, Woking.*

THE ONION SEED CROP.—It would appear that the prospects of the seed harvest from Onions are worse in this country than they have been for many years, and that mainly owing to a cold and wet July. The Onion, in England, is generally in full bloom in July, and towards the end of August the seed is expected to be black, which is the sign of ripeness. This year the middle of August was reached before the Onions were well in bloom, and then only in the case of isolated heads. It was not until the beginning of September that the crop was well in flower, and the seed matures so slowly that there is reason to fear it will be in many places a complete failure, as, at this late period, it cannot possibly come to perfection, and the only seeds that show signs or maturing are those at the top of the inflorescence, instead of all round it, in the form of

a perfect ball. It is those who planted early in the season, on quick, warm lands, that are likely to secure anything of a crop. In the case of those who plant out the largest and handsomest bulbs to secure fine seed, and which require more time to come to maturity, the outlook is gloomy in the extreme, and what little seed may happen to ripen will be light and poor, notwithstanding the plants have been cared for in every possible way. The Bedfordshire growers of Onion seed are suffering also; one of them, in the neighbourhood of St. Neot's, estimates his loss at £600. R. D.

THE CAPTAIN STRAWBERRY.—This variety was put into commerce as one fruiting both in the spring and autumn. This it appears to do, for the strong runners of this year are seen to be putting forth trusses of bloom. At Gunnersbury Park Mr. Roberts has lifted a good number, potted them, and placed them in a heated frame, in the hope that they will give him a few dishes of fruit at mid-winter. D.

SOCIETIES.

ENGLISH ARBORICULTURAL.

The fourth annual excursion of the members of the above Society took place on Friday week, the place selected being the Chillingham estate, permission having been kindly granted by the Right Hon. the Earl of Tankerville. Most of the members journeyed to Wooler on the Thursday evening *via* the new line. On Friday morning many of the members were astir and had a ramble through the village and adjoining neighbourhood. The route to Chillingham by West Weetwood, Fowberry Tower, Chatton, and Chillingham Barns, was an exceedingly fine one, the country on each hand being well wooded and picturesque. On arriving at Chillingham the company was met by Mr. Noble, the land steward, and Mr. Henderson, the gardener, who gave them a very cordial welcome. Mr. Noble then acted as cicerone to the party, and first conducted them to the parish church. Near the church is the pleasantly situated vicarage, and here dwells the Rev. Joseph Hudson, a former vicar of Hexham, and who, though in his ninety-seventh year, is still hale and hearty, and, in fact, accompanied his choir to Warkworth on the Monday previous.

After inspecting the Castle and its interesting pictures, the gardens, and the wild cattle in the park, luncheon was partaken of under the shadow of Rass Hill, and afterwards the majority of those present ascended it. It is 1200 feet above the level of the sea, and the view to be obtained from it is extensive. The whole of the park was visible, and the wild cattle were distinctly seen. There is a Saxon camp at the top of the hill. Just adjoining the camp there is a strip of natural wood, consisting of Alder, Birch, and Oaks, and it is supposed to be part of the old Caledonian forest. Descending the hill and again entering the park Hebburn Castle was visited. This was formerly a "peel" of the better class belonging to the family to whom it gave a name. It is of the usual peel type—square and massive, and is a fine specimen of an old border peel.

Leaving this interesting relic, the party journeyed across the park and entered the Axes Wood, and in it a nice plant of *Abies nobilis glauca* was measured, and noted as having grown 18 inches in 1887, and 30 inches in 1888. *Abies Douglasii*, *Wellingtonias*, and *Piceas* were growing near, and doing very well. Passing through a thicket of self-sown Oaks, supposed to be 200 years old, attention was fixed by Mr. Noble on a grand tree of *Abies grandis*, 40 feet high, and 4 feet 2 inches in girth 6 feet from the ground. Balm of Gilead Silver Fir was also doing very well, and several grand trees were measured to 45 feet high. Entering The Dell, the next tree measured was a splendid specimen of *Wellingtonia gigantea*, 55 feet high, 7 feet 3 inches at 4 feet up, and 10 feet 6 inches girth at the bole. Two seeds of this giant tree were sent to the Vicar and given to Lord Tankerville, and two trees were raised and nursed in the greenhouses thirty-five years ago, and both are living, the one under notice being one. The English Oaks in the front of the castle, called the Beggar's, the King's, and the Quirches, were raised from Acorns got from the late Lord Bagot. Passing through the alpine garden a Spanish Chestnut was measured, 14 feet 3 inches 4 feet up. Amongst a clump of hybrid *Rhododendrons* a few spikes of a grand *Lilium giganteum*, which this season yielded sixteen or

seventeen flowers on each spike, were most conspicuous. Passing through King James' Gate to My Lady's Plantation an enormous Silver Fir was measured; it is 120 feet high, and 11 feet 2 inches 4 feet up, with a clear boll of 90 feet. This is not quite so large as the famous Silver Fir at Eslington, the seat of the Earl of Ravensworth, which measures 134 feet high, and is 15 feet 6 inches 5 feet up, and is said to be 170 years old, and pronounced to be the largest tree in Northumberland. Going through the Horse Pasture the company came across a curious old Oak, measuring 24 feet 6 feet up, and altogether a curiosity. Several other Oaks and Elms were measured of enormous size.

At the dinner held at the Wooler Cottage Hotel, the Chairman, Mr. Isaac Batty, Hexham, in proposing "Success to the English Arboricultural Society," said, when that excursion was first talked about he questioned the wisdom of going to Chillingham, but among the many excellent excursions they had had during the four years the Society had been in existence none had been so pleasant, and none so enjoyable as that one, and none had been more interesting than they had had that day. Though there had been little of arboriculture in the strict sense of the term, yet they had all the opportunity of enjoying themselves according to their peculiar bent. At the earliest stage of their proceedings he had had the pleasure of meeting one with whom he was associated in his earliest infancy and boyhood, the Rev. Joseph Hudson, the old Vicar of Hexham, who now administered the affairs of Chillingham parish, and who, at his great age (97), was still hale and hearty. Then they had viewed the architecture and heard the historic associations of the old church.

He also said, in the course of his remarks, that while it was very pleasant to have these annual *réunions*, they should not forget that their members were the backbone of arboriculture in the North of England. Their Society was proceeding along quietly and soundly, but he thought it might go a little quicker. He thought if each of them were to send to Mr. Davidson two new members during the next week it would help Mr. Davidson very much. He thought they did not co-operate with Mr. Davidson as much as they might do. They should all back him up and get as many members as possible. We may mention that after dinner Jacob Wilson, Esq., of Chillingham Barns, was elected a honorary member of the Society.

Obituary

F. ARTHUR DICKSON.—The news of the death of Mr. Francis Arthur Dickson, of Chester, on the 27th ult., will come as a shock to a large body of friends and acquaintances; indeed, his name was so well known, and both he and his establishment held in such high repute, that the feeling of regret at his loss will be general among horticulturists. It is only the other day that we mentioned the amalgamation of the two renowned Chester firms, now known as Dicksons, and alluded to the valuation of the stock as a matter of interest from its extent and value. In 1870 he was elected to the dignity of Mayor of Chester. The birth of one of his children took place during his year of Mayoralty, and he was presented with a silver cradle, subscribed for by fellow-citizens and friends, the presentation being made by His Grace the Duke of Westminster in the Town Hall. On January 6, 1871, he was placed on the Commission of the Peace for the city. He took an active interest in all matters pertaining to agriculture and the various agricultural bodies in Cheshire and adjoining counties, but more particularly in his native city; so much so, that in 1873, on the occasion of the visit of the Royal Manchester, Liverpool and North Lancashire Agricultural Society to Chester, he was presented with an address by his colleagues and others for his distinguished services on the local committee.

Deceased was the son of the late Mr. Francis Dickson, who was one of the founders of the original firm with which his name was connected, and was for a great number of years associated with his father in the conduct and maintenance of the business, taking a prominent share of the labour in it until some five or six years ago. A severe illness then necessitated his going abroad, and he had in conse-

quence to retire from all active participation in the work of the firm. Subsequently, about eighteen months since, however, Mr. Dickson's health seemed so far improved, that he took in hand the direction of the nursery department and the supervision of the business generally; but, finding that increased exertion brought on a relapse of his old malady, and acting under medical advice, he retired completely from active work in the affairs of the concern, and took up his residence at West Kirby. But during the last few months the hidden germs of disease of a cancerous nature, from which the deceased gentleman suffered, made themselves very manifest, and he gradually grew worse during the last few weeks of his life, enduring intense suffering.

Mr. F. A. Dickson, as we have already intimated, was a prominent member of the newly amalgamated firm of "Dicksons, Limited," and his family will retain his share in the business, their interests being left in the hands of his executors; he also was a strong supporter of the Gardeners' Royal Benevolent Institution. He leaves a widow and five sons and four daughters to mourn their loss. He was in the sixty-second year of his age. The Union Jack at the Chester Town Hall was hoisted half-mast as soon as the death of the respected alderman became known on Thursday morning.

DAVID WOOSTER.—At Bayswater, after an illness of over three years, David Wooster, in the sixty-fourth year of his age. Comparatively few, we expect, will recognise in this announcement the loss of one who formerly was a very active worker in and for horticulture. In early life he was in the employ of Loudon, and aided that laborious man in the editing and compilation of many of his careful and useful publications. To the end of his life Mr. Wooster revered the memory of his old employer, and he showed his reverence by planting a memorial tree in Hyde Park, nearly opposite the street where Loudon worked. It was to his initiative and to his exertions mainly that the portrait of Loudon by Linnell was secured for the Linnean Society of London. Linnell had been a friend and neighbour of Loudon's, whose portrait he had painted in bygone years, and on learning the purpose for which the portrait was required the artist disposed of it for an amount very much below what so good a portrait by so famous an artist would have obtained in the ordinary way. It was, however, characteristic of the painter that he declined to receive a cheque for the amount, and that even the offer of bank notes by Mr. Wooster in person was objected to, and solid coin of the realm alone was considered adequate. Wooster subsequently became associated—in what precise capacity we do not know—with the late Sir Walter Trevelyan, a man of much learning and varied tastes, with a strong bias towards natural history and art. In such circumstances Wooster was in his element; the library, the gardens, the woods at Wallington all furnished him with materials for observation and study. Apart, however, from the work he did for Loudon, Wooster did not publish much beyond a work on Alpine plants, to the coloured illustrations of which he contributed the text. Mr. Wooster took great interest in the Royal Horticultural Society, and up to the time of his illness watched its progress with anxious heed. He was also an occasional contributor to the columns of this journal, while his extensive knowledge and gentle manners make one feel that we could have better spared a greater man.

THE WEATHER.

THE PAST WEEK.

The following summary record of the weather for the week ending Oct. 1, is furnished from the Meteorological Office:—

"The weather was generally fair and dry during the earlier part of the period, but subsequently became unsettled, with occasional falls of rain. At many of our northern stations sleet or snow showers occurred towards the end of the week.

"The temperature has been below the mean in all districts. Over Ireland and the south and south-west of England the deficit has been slight, but over Scotland and the northern parts of England a deficit of 4°–6° is shown. The highest of the maxima were generally recorded on the 27th, when the thermometer rose to between 58° and 64° in Scotland, 65° and 69° in Ireland, and 62° and 70° in England. The lowest of the minima, which were registered on the last day of the period, ranged from 26° in 'Scotland, N.,' and 28° in 'Scotland, E.,' and the 'Midland Counties,' to 35° in 'Ireland, S.,' and 39° in the 'Channel Islands.' At all the more central stations sharp ground frost was experienced.

"The rainfall has been less than the mean in all districts excepting the 'Channel Islands.'

"Bright sunshine has been less prevalent than of late, especially in the north-eastern parts of the kingdom. The percentage of the possible amount of duration ranged from 11 in 'Scotland, E.,' and 13 in 'England, N.E.,' to 30 in 'Scotland, N.,' and the 'Midland Counties,' to 34 in 'England, N.W.,' and to 40 in 'England, E.'"

[Accumulated temperature indicates the combined amount and duration of the excess or defect of temperature above or below 32° F. for the period named, and is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.				
	Above or below the Mean for the week ending Oct. 1.	ACCUMULATED.			
		Above 42° for the Week.	Below 42° for the Week.	Above 42° difference from Mean since Jan. 3, 1888.	Below 42° difference from Mean since Jan. 3, 1888.
Principal Wheat-producing Districts.		Day-deg.	Day-deg.	Day-deg.	Day-deg.
0. SCOTLAND, N. ...	6 below	31	13	— 242	+ 213
1. SCOTLAND, E. ...	3 below	31	—	— 480	+ 164
2. ENGLAND, N.E. ...	4 below	43	0	— 503	+ 73
3. ENGLAND, E. ...	3 below	64	0	— 375	+ 164
4. MIDLAND COS. ...	3 below	54	0	— 480	+ 148
5. ENGLAND, S. ...	1 below	85	0	— 472	+ 204
Principal Grazing, &c., Districts.					
6. SCOTLAND, W. ...	4 below	41	0	— 365	+ 107
7. ENGLAND, N.W. ...	4 below	50	0	— 387	+ 117
8. ENGLAND, S.W. ...	1 below	84	0	— 470	+ 253
9. IRELAND, N. ...	2 below	57	0	— 294	+ 87
10. IRELAND, S. ...	1 below	78	0	— 292	+ 113
— CHANNEL ISLANDS	1 below	99	0	— 334	+ 154

DISTRICTS.	RAINFALL.			BRIGHT SUNSHINE.	
	More or less than the Mean for the Week.	No. of Rainy Days since Jan. 3, 1888.	Total Fall since Jan. 3, 1888.	Percentage of possible Duration for the Week.	Percentage of possible Duration since Jan. 3, 1888.
Principal Wheat-producing Districts.	Tenths of Inch.		Ins.		
0. SCOTLAND, N. ...	2 less	173	27.7	30	79
1. SCOTLAND, E. ...	2 less	151	21.4	11	31
2. ENGLAND, N.E. ...	2 less	141	20.2	13	26
3. ENGLAND, E. ...	5 less	146	19.1	40	30
4. MIDLAND COS. ...	6 less	132	18.8	30	28
5. ENGLAND, S. ...	2 less	134	19.9	31	29
Principal Grazing, &c., Districts.					
6. SCOTLAND, W. ...	7 less	143	29.9	24	32
7. ENGLAND, N.W. ...	5 less	144	21.1	34	29
8. ENGLAND, S.W. ...	4 less	147	25.0	24	35
9. IRELAND, N. ...	3 less	151	26.7	19	28
10. IRELAND, S. ...	4 less	134	28.4	20	33
— CHANNEL ISLANDS	2 more	162	21.8	22	40

MEAN TEMPERATURE OBSERVED AT CHISWICK DURING THE WEEK ENDING OCT. 13. (AVERAGE OF FORTY-FOUR YEARS.)

Oct. 7	53° 1	Oct. 11	52° 1
" 8	52° 6	" 12	51° 7
" 9	52° 5	" 13	51° 4
" 10	52° 3	Mean for the week ...	52° 3

NOTICES TO CORRESPONDENTS.

ACORNS IN WATER: *E. C. D.* The best way is to gather fresh Acorns, germinate them in damp sand, afterwards washing off carefully all sand from the roots; then fasten wire through or round the Acorn, and suspend it just above the water in a long glass jar. Some means should be adopted to keep dust and dirt out of the water, and the jar should be placed in a light airy spot clear of frost. When the Acorn is not first germinated, but simply suspended close to the water, it often remains months without starting, and sometimes rots away.

BOOKS: *E. A. K.* *The Carnation and Picotee*, by E. S. Dodwell. London: Groombridge & Sons, Paternoster Row, price 6d.—*Cincinnati Epitome of Gardening* (Black & Son).

DIGITALIS FERRUGINEA: *G. S.* Many thanks. The central axis of the flower, instead of producing pistils and seed-vessels, is prolonged into a short stalk, surmounted by an abortive flower.

EUCARIS: *T. H.* Your flower with ten segments and ten stamens is due to the blending at a very early stage of two flowers into one, as may be seen by examining the flower-stalk by the aid of the microscope. The condition is not uncommon, but it is a pure accident.

FUNGUS: *M. Y.* The fungus sent is one of the Starry Puffballs (*Geaster Bryantii*). You will see it described and illustrated in the *Gardeners' Chronicle* for 1873, p. 504. All the British Starry Puffballs are figured in the 1873 volume.

GERANIUM LEAVES: *H. T.* The Pelargonium leaves you send have been either frost-bitten or burnt by the sun shining through drops of water.

COVENT GARDEN MEASURES: *Cincinnati.* Of Turnips and Carrots, twelve and upwards, according to size, make a bunch. Of Leeks, six or more. A roll of Celery contains six, eight, to twelve heads. A list of various measures in use in Covent Garden will be found on our Almanac issued with the number for January 7 this year.

NAMES OF FRUIT: *H. Taylor.* 1, Worcester Pearmain; 2, Brabant Bellefleur; 4, Cellini.—*W. Beswick.* 1, Maréchal de la Cour; 2, Bergamotte d'Espéren; 3, Gilgil? 4, not known; 5, Bishop's Thumb; 6, Fondante d'Automne.—*G. Franks.* 1, Clapp's Favourite; 2 and 5, Williams' Bon Chrétien; 3, Beurré d'Amanlis; 4, Hacon's Incomparable; 6, Comte de Flandres.—*M. L.* Not known: worthless.—*John Prince.* 1, Lord Derby; 2, Alfriston; 3, Royal Russet; 4, Lord Grosvenor.—*W. H. K.* Your Grape is Madresfield Court.

NAMES OF PLANTS: *T. C.* *Diplacus glutinosus*.—*W. A. S.* *Platanus acerifolia*.—*Septic.* *Spiranthes autumnalis*, alias *Neottia*.—*J. F.* *Cotoneaster frigidula*.—*W. O. C.* *Melilotus officinalis*.—*A. L.* 1, *Physostegia imbricata*; 2, *Veronica spicata*; 3, *V. incana*; 4, *Scabiosa columbaria*; 5, *Galega officinalis*; 6, *Campanula rapunculoides*.—*L. C. H.* 1, *Asplenium trichomanes*; 2, *Polypodium vulgare*; 3, P. Billardieri; 4, no specimen; 5, *Vaccinium myrtillus*.—*E. C. C. D.* *Digitalis ferruginea*.—*Mary C.* *Scirpus prolifer*.—*Doubtful.* 1 and 2, *Centaurea Tournefortii*; 3, *C. calocephala*, var.; 4, *Sedum rupestre*; 5, *Saxifraga aizoon*; 6, *Semprevivum*, we cannot name without flowers.—*C. Wolley Dod.* *Clematis erecta*. *A. B. D.* Next week.—*Breeze.* *Sisymbrium Sophia*.—*No name* (some tickets loose). 1, *Crocus aurea*; 2, *Pteris argyrea*; 3, *Anthericum lineare variegatum*; 4, *Pasiflora racemosa*, princeps of gardens; 5, *Selaginella Mertensii*; 6, *Begonia metallica*; *Nephridium molle cristatum*; *Cypripedium Spicerianum*.

RASPBERRIES FOR FIELD CULTURE: *J. H. B.* Of older varieties, Baumforth's Seedling, Northumberland Fillbasket, and Fastolf, reds; and the Yellow Antwerp. *Merveille des Quatre Saisons*, or October Red, and the October Yellow, are good

late season Raspberries, but as they do not bear well on the previous year's canes, it is good practice to cut down the canes to the ground in February, singling out the best to remain when they are long enough to distinguish the strongest canes on each stool. The distance to plant will vary with the method adopted. Some prefer to plant in lines at 18 inches from plant to plant, with 4 to 5 feet space between the rows. In good soil it is perhaps better to plant stools at 5 feet apart, and bend the fruiting canes, say six or eight from each stool, when old, right and left, and tie them together to a slight stake, and thus form an arch. By this means the fruit gets more sunlight, is readily dried after rain, and is more come-at-able by the pickers.

RETINOSPORA: G. & Sons should send such questions to the Editor. The plant sent is *Retinospora pisifera aurea*. Such sports are not uncommon.

ROSE LEAVES: H. T. They are affected by a minute parasitic fungus allied to that which causes similar spots in the Strawberry. Burn the leaves. It rarely does much mischief—very different from the orange fungus, and not so harmful.

SEEDLING DIPLADENIAS: J. J. Fine flowers, but not better than other varieties already in commerce.

STRIPED FRENCH MARIGOLDS: I. Jardine. It is a capital strain, and therefore worth taking care of.

TRANSPLANTING LARGE APRICOT TREES: A Constant Reader. If the trees are old, it will be advisable to lift the roots all round the tree to within 4 feet of the stem, and replant these in radial fashion in loamy compost containing a small portion of half-spent or Mushroom-bed manure, or potting-shed refuse. In one season the roots will have pushed numerous rootlets into the new soil, and in October the tree may be safely moved bodily to a new station, or replanted in the old one, after making due preparation by removing the exhausted soil, and filling in with new. See also our "Hardy Fruit" Calendar in this issue.

WINDOW BOXES: Annie Egerton. One of the latest books on gardening, the *Garden Calendar*, by T. W. Sanders (Hamilton, Adams & Co., Paternoster Row), price 2s. 6d. In this work there are directions given for each month with regard to the management of window-boxes.

COMMUNICATIONS RECEIVED.—Rev. Dr. L.—C. W. D.—C. B. F.—F. M. D. (we will endeavour to ascertain).—J. R. J.—W. T. St. Louis, U.S.A.—G. K. Calcutta.—E. C.—W. F. Jamaica.—A. D.—F. G. T.—R. H. M.—G. N. H. V.—Nurseryman.—T. N.—H. J. C.—H. H. D'O.—H. T. S.—J. G. B.—H. M.—N. N.—F. H. Froud (send the photos).—S. A.—Canon Ellacombe.—R. A.—R. C. T.—J. C. T.—W. C.—J. W.—C. P. L.—A. D. W.—W. B. H.—G. W.

MARKETS.

COVENT GARDEN, October 4.

TRADE dull generally. *James Webber, Wholesale Apple Market.*

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Aralia Sieboldi, doz. 6 0-18 0	Ferns, in var., doz. 4 0-18 0
Asters, per dozen ... 3 0-6 0	Foliage plants, various, each ... 2 0-10 0
Chrysanthemums, doz. 4 0-9 0	Ficus elastica, each ... 1 6-7 0
— large plants, each 2 0-4 0	Fuchsias, doz. ... 3 0-6 0
Cockscombs, per doz. 3 0-6 0	Heliotropes, dozen ... 3 0-6 0
Coleus, dozen ... 2 0-4 0	Hydrangeas, dozen ... 9 0-18 0
Cyperus, per dozen ... 4 0-12 0	Liliums, var., doz. ... 18 0-30 0
Dracena terminalis, per dozen ... 30 0-60 0	Marguerites, doz. ... 6 0-12 0
— viridis, per doz. 12 0-24 0	Mignonette, 12 pots 3 0-6 0
Eunonymus, in var., per dozen ... 6 0-18 0	Palms in var., each 2 6-21 0
Evergreens, in var., per dozen ... 6 0-24 0	Pelargoniums, scarlet, per dozen ... 2 0-6 0
	Solanums, dozen ... 9 0-15 0

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Abutilons, 12 bun. ... 2 0-4 0	Lapageria, 12 blooms 1 0-2 0
Asters, 12 bunches ... 3 0-6 0	Marguerites, 12 bun. 3 0-6 0
— French, per bun. 1 0-1 6	Mignonette, 12 bun. 2 0-4 0
Bouvardias, per bun. 0 6-1 0	Pelargoniums, 12 spr. 0 6-1 0
Camellias, 12 blms. 3 0-4 0	— scarlet, 12 spr. ... 0 3-0 6
Carnations, 12 blms. 1 0-2 0	Pinks, 12 bun. ... 3 0-6 0
— dozen bunches ... 4 0-6 0	Primulas, double, 12 sprays ... 0 9-1 0
Chrysanthemums, 12 blooms ... 0 6-3 0	Pyrethrums, 12 bun. 2 0-4 0
— dozen bunches ... 3 0-9 0	Sunflower, doz. bun. 3 0-9 0
Dahlia, doz. bunches 3 0-6 0	Roses, Tea, per doz. 1 0-3 0
Coriander, 12 bun. 1 6-3 0	— coloured, dozen. 2 0-4 0
Euchars, per dozen 3 0-6 0	— red, per dozen ... 0 6-1 0
Forget-me-nots, 12 bunches ... 2 0-4 0	— Safrano, dozen ... 1 0-2 0
Gardenias, 12 blooms 1 6-4 0	Stephanotis, 12 spr. 3 0-4 0
Gladioli, doz. sprays 0 6-1 6	Sweet Peas, 12 bun. 2 0-4 0
Heliotropes, 12 spr. 0 6-1 0	Tuberose, 12 blms. ... 0 6-1 0
Lilium longiflorum, 12 blooms ... 3 0-5 0	Violets, 12 bunches ... 1 0-2 0
— lancifolium, 12 bl. 1 0-3 0	— Parme, Fr., bun. 3 0-4 0

FRUIT.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Apples, half-sieve ... 2 0-4 6	Peaches, dozen ... 2 0-6 0
Cobs, 100 lb. ... 65 0-70 0	Pine-apples, Eng., lb. 1 6-2 0
Grapes, per lb. ... 1 0-2 6	Plums, half-sieve ... 2 6-4 6
Lemons, per case ... 12 0-21 0	— St. Michael, each 2 0-5 0
Melons, each ... 1 0-3 0	

VEGETABLES.—AVERAGE RETAIL PRICES.

s. d. s. d.	s. d. s. d.
Artichokes, p. doz. ... 4 0-...	Mustard and Cress, punnet ... 0 4-...
Beans, Kidney, lb. ... 0 4-...	Onions, per bunch ... 0 5-...
Beet, red, per dozen 1 0-2 0	Parsley, per bunch ... 0 4-...
Carrots, per bunch ... 0 6-...	Potatoes, per cwt. ... 4 0-5 0
Cauliflowers, each ... 0 3-...	— kidney, per cwt. 4 0-5 0
Celery, per bundle ... 1 6-2 0	Shallots, per lb. ... 0 6-...
Cucumbers, each ... 0 6-0 9	Spinach, per bushel ... 2 0-...
Endive, per dozen ... 2 0-...	Tomatoes, per lb. ... 0 9-1 0
Green Mint, bunch ... 0 4-...	Turnips, per bunch, new ... 0 5-...
Herbs, per bunch ... 0 4-...	Vegt. Marrows, each 0 1 1/2 ...
Leeks, per bunch ... 0 4-...	
Lettuce, per dozen ... 1 6-...	
Mushrooms, punnet 1 6-2 6	

POTATOS.—Myatt's finished. Beauty of Hebron, 70s. to 80s.; Regents, 70s. to 90s.; and Magnums, 70s. to 80s. per ton.

SEEDS.

LONDON: Oct. 3.—Messrs. John Shaw & Sons, seed merchants, of 37, Mark Lane, E.C., write that a good speculative business is doing in Clover seeds at the recent substantial advance in values. Moreover, the tendency of rates is still upwards. For Trifolium the sowing demand is nearly over; prices are now exceedingly low. Winter Tares continue in brisk request at former rates; the supply is moderate. Seed Rye is exceedingly cheap. The new Essex Mustard now offering shows poor condition. There is no material alteration in bird seeds. Blue Peas and Haricot Beans realise last week's figures.

CORN.

Averages.—Official statement showing the average price of British corn, imperial measure, in the week ended September 29:—Wheat, 32s. 2d.; Barley, 29s. 4d.; Oats, 16s. 4d. For the corresponding week in 1887:—Wheat, 28s. 5d.; Barley, 28s. 10d.; Oats, 14s. 10d.

FRUIT AND VEGETABLES.

SPITALFIELDS: Oct. 3.—Good supplies of all kinds of fruit, fresh vegetables, &c. Trade heavy, at prices as under:—Fruit: Apples, 3s. to 5s. per bushel; do., 1s. 6d. to 2s. 9d. per half-bushel; Pears, 1s. 6d. to 3s. per bushel; Damsons, 2s. to 2s. 6d. per half sieve; English Plums, 1s. 9d. to 2s. per half-sieve; foreign Plums, 1s. to 1s. 6d. per basket; English Tomatoes, 4s. to 6s. per peck; foreign do., 2s. 9d. to 3s. per box of 18 lb. Vegetables: Cabbages, 1s. to 2s. per tally; Cauliflowers, 3s. to 5s. 6d. do.; Vegetable Marrows, 2s. to 3s. 6d. do.; Scarlet Runners, 1s. to 1s. 6d. per sieve; French Beans, 1s. 3d. to 2s. per bushel; Belgian Onions, 2s. 3d. to 2s. 6d. per bag; Dutch Onions, 3s. to 3s. 3d. per bag; pickling Onions, 3s. 6d. to 4s. do.; English Onions, 2s. per dozen bunches; Turnips, 2s. do.; Carrots, 1s. 6d. to 1s. 9d. do.; Beetroot, 2s. to 2s. 6d. do.; Mint, 1s. 6d. do.; Parsley, 1s. to 1s. 6d. do.; Celery, 6s. to 9s. do.; frame Cucumbers, 2s. to 3s. per dozen; common do., 4d. to 6d. do.; Endive, 1s. to 1s. 6d. do.; Cos Lettuce, 4d. to 6d. per score; Carrots, 2s. to 3s. 6d. per ton.

STRATFORD: Oct. 2.—Both trade and supply have been good during the past week. Prices:—Cabbages, 2s. to 5s. per tally; Greens, 5s. to 6s. per dozen bunches; Cauliflowers, 3s. 6d. to 5s. per tally; Carrots, household, 30s. to 40s. per ton; do., cattle feeding, 25s. to 30s. do.; Mangels, 17s. to 20s. do.; Swedes, 18s. to 21s. do.; Onions: Ghent, 2s. 6d. to 3s. 3d. per bag; Dutch, 3s. 3d. to 4s. do.; Valencias, 6s. 6d. to 7s. per case; Apples, English, 3s. 6d. to 6s. per bushel; Watercress, 6d. per dozen; Damsons, 5s. 6d. to 7s. per sieve; do., 3s. to 3s. 6d. per half-sieve; Plums, 2s. to 3s. 6d. do.; Pears, 2s. to 5s. per bushel; Celery, 10d. to 1s. per bundle; Carrots, 2s. per dozen; Beetroot, 2s. to 3s. do.

POTATOS.

BOROUGH AND SPITALFIELDS: Oct. 2.—Fully adequate supplies and a slow trade. Very little change in prices. Regents, 60s., to 100s.; Hebrons, 60s. to 90s.; Early Roses, 50s. to 80s.; Magnum Bonums, 50s. to 100s. per ton.

SPITALFIELDS: Oct. 3.—Quotations:—Magnums, 50s. to 65s.; Imperators, 60s. to 70s.; Early Rose, 50s. to 60s.; English kidneys, 60s. to 70s.; do. Regents, 65s. to 75s.; Beauty of Hebron, 75s. to 80s.; and Champions, 50s. to 55s. per ton.



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40 of the best kinds of DAFFODILS, including the famed Sir William, all mixed, 1s. 6d. per dozen.
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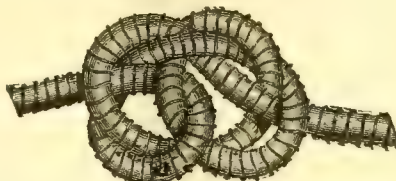
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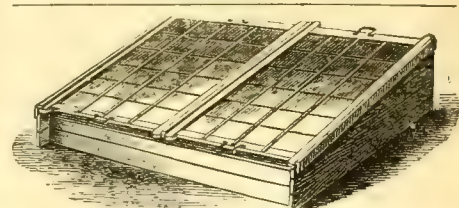
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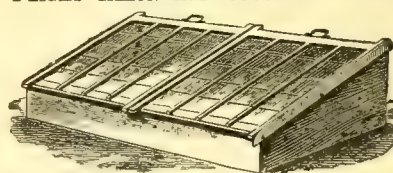
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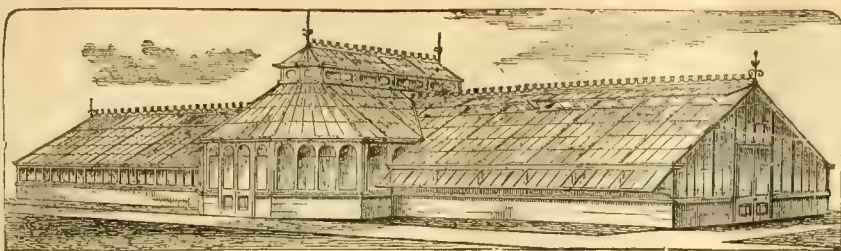
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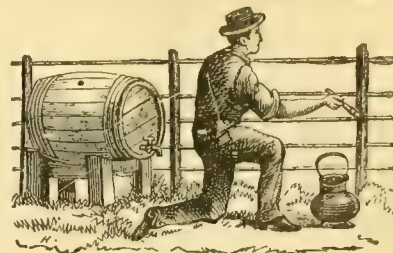
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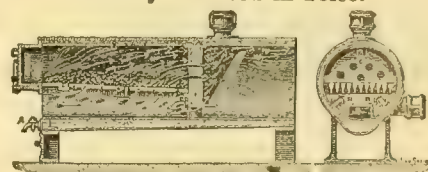
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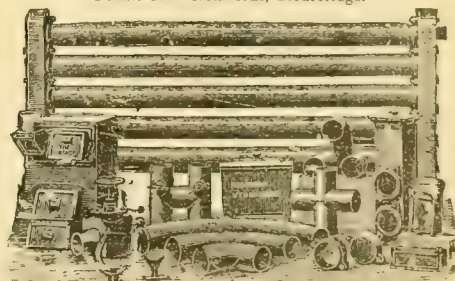
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7	"	..	0	4	6	18	"	..	0	10	0
8	"	..	0	5	0	19	"	..	0	10	6
9	"	..	0	5	6	20	"	..	0	11	0
10	"	..	0	6	0	21	"	..	0	11	6
11	"	..	0	6	6	22	"	..	0	12	0
12	"	..	0	7	0	23	"	..	0	12	6
13	"	..	0	7	6	24	"	..	0	13	0
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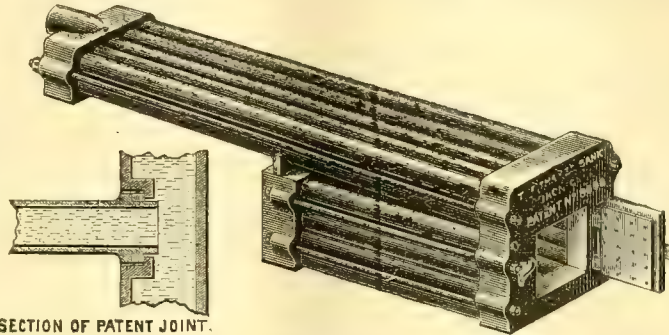
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IMPORTANT TO NOBLEMEN, GENTLEMEN, NURSERYMEN, AND OTHERS EXTENSIVELY ENGAGED IN PLANTING.

MESSRS. PROTHEROE AND MORRIS

are instructed to SELL by AUCTION, on the Premises, the Milford Nurseries, Milford, Surrey, on WEDNESDAY, October 10, and three following days, at 12 o'clock punctually each day, several Acres of unusually well-grown

NURSERY STOCK,

which has been carefully prepared for removal, including a splendid assortment of Specimen CONIFERS and EVERGREENS, 6 to 12 feet; fine examples of Young's Golden JUNIPER, 3000 BORDER SHRUBS, 3 to 6 feet; 1500 AUCUBAS, 2 to 3 feet; 3000 CONIFERS, 1 to 4 feet; 6000 LAURELS of sorts, 2 to 3 feet; 5000 Evergreen PRIVET, 3 to 4 feet; 5000 ORNAMENTAL and FOREST TREES, 6 to 12 feet; 8000 choicest named Hybrid and Ponticum RHODODENDRONS, 1000 Standard and Dwarf ROSES, 357,000 Transplanted and Seedling FOREST TREES, including 60,000 strong QUICK, FLOWERING SHRUBS, CLIMBING PLANTS, &c.

May be viewed any day prior to the Sale. Catalogues may be had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, London, E.C., and Leytonstone, E.

N.B. Goods can be loaded at Milford Station, and conveyed to any part of Great Britain without change of trucks.

Editorial Communications should be addressed to "The Editor;" Advertisements and Business Letters to "The Publisher," at the Office, 41, Wellington Street, Covent Garden, London, W.C.
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ROYAL HORTICULTURAL SOCIETY.

NATIONAL APPLE AND PEAR CONFERENCE AND GREAT SHOW OF FRUIT, in the Society's Gardens, Sutton Court Road, Chiswick, OCTOBER 16, 17, 18, 19, and 20.
Opening Proceedings—Tuesday, October 16, 3 o'clock.
Conference Meeting—Wednesday, October 17, 1 o'clock.
Conference Meeting—Thursday, October 18, 1 o'clock.
Frequent Trains from all Stations on the Metropolitan and Metropolitan District Railways to Acton Green and Furnham Green; by the North London to Gunnersbury, and by South-Western to Chiswick Station. All within a few minutes' walk of the Gardens.

NATIONAL CHRYSANTHEMUM SOCIETY.

A GENERAL MEETING of MEMBERS of this Society will be held at Anderson's Hotel, Fleet Street, City, E.C., on MONDAY Evening, October 15, at 7 o'clock precisely. In order to secure free admission to the Grand Fête, November 7 and 8, intending subscribers should send me their names prior to this meeting.
WILLIAM HOLMES, Hon. Sec.
Frampton Park Nurseries, Hackney, E.
New Official CATALOGUE (1888) now ready, 1s., Post-free.

ROYAL BOTANICAL AND HORTICULTURAL SOCIETY OF MANCHESTER.

An EXHIBITION of APPLES, PEARS, &c., will be held in the Gardens on OCTOBER 24, and three following days. For Schedules, &c., apply to the undersigned.

BRUCE FINDLAY.

Royal Botanical Gardens, Manchester.

THE ROYAL HORTICULTURAL SOCIETY OF SOUTHAMPTON.

ANNUAL GRAND CHRYSANTHEMUM and FRUIT SHOW, THURSDAY and FRIDAY, November 1 and 2. Entries Close October 26.
C. S. FUDGE, Secretary.
Heckfield House, Bevoir Hill, Southampton.

WANTED, the following Numbers of the GARDENERS' CHRONICLE for 1878:—121, 122, 124, 126, 127, 129, 132, 135, 138, 141, 147, 149, 150, 151, 153, 154, 155, and 156.—Please state price to W. M., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

ROMAN HYACINTHS. NARCISSUS, LILUM CANDIDUM, grown by LOUIS BREMOND, Fils, Orléans. Last consignment expected in London in a few days. WILLIAM DENMAN, 7, Catherine Street, Covent Garden, W.C. See large Advertisement, September 15, page 289.

CREEPERS FOR WALLS.—By planting what is suitable, an ugly object may easily be made beautiful. Most being in pots, can be sent and put out at any time. Descriptive LIST and advice free.—RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

GOWERS AND EMBERTSON Comely Bank Nursery, Walthamstow, offer—Clove, old crimson, strong, well rooted layers; old white, sweet-scented, as hardy as the above. Fireman, good scarlet border Carnation, very bright and free flowering. Any of the above, 12s. 100, cash with order.

FOR SALE, several large CAMELLIAS. For particulars, apply to JAS. GOLD, High Ashurst, Dorking.

ORCHIDS.—Amateurs having Large Specimens to DISPOSE OF in EXCHANGE, are requested to state value expected and sorts desired, to W. H. (who has a large stock to select from), *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

FOR SALE OR EXCHANGE, Specimen Plant of IMANTOPHYLLUM MINIATUM, 4 to 5 feet through. For particulars apply to GARDENER, Enderby Hall, Leicester.

MESSRS. GREGORY AND EVANS, NURSERYMEN, Sidcup, and 285, 286, 287, 288, Flower Market, Covent Garden, London, W.C., are open to RECEIVE CONSIGNMENTS of Choice CUT FLOWERS in any quantity for their Commission Department. Boxes and Labels supplied. Telegraph Address—"COMMISSION, SIDCUP."

SQUELCH AND BARNHAM, North Row, Covent Garden, W.C., are OPEN TO DISPOSE OF any quantity of MUSCATS and BLACK GRAPES, TOMATOS, CUCUMBERS, FRENCH BEANS, STRAWBERRIES, CHOICE FLOWERS, &c. Highest Market Prices obtained. Account Sales daily; cheques weekly, or as preferred by Sender. Baskets and Labels supplied. References given.

CHOICE FLOWERS and FRUIT. Highest Market Prices guaranteed. HENRY RIDES (late Wise & Rides), Fruit and Flower Salesman, Covent Garden, W.C.

WANTED, CUT WHITE BLOOM in any quantity. Good prices sent per return. G. PHIPPEN, F.R.H.S., Reading.

WANTED, EUCHARIS BLOOMS. Weekly Supply, all the year round.—State lowest price per dozen to SINCLAIR, Wreath and Bouquet Establishment, Blake Street, York.

WANTED, STEPHANOTIS, EUCHARIS, ORCHIDS, ROSES, CHRYSANTHEMUMS, and other Choice CUT FLOWERS. Best Market Prices returned. Address S. HILL Jun., 21, Charlotte Street, Fitzroy Square, W., and Covent Garden Flower Market, W.C.

WANTED, the following GERANIUMS, carefully lifted from the borders:—Mrs. Pollock and other Golden Tricolors, Henry Jacoby, West Brighton Gem, Master Christine; and TROPEOLUM VESUVIUM; also ECHEVERIAS. Good value given. FLETCHER, SON AND CO., Florists, &c., Ches'ersfield.

WANTED, AT ONCE, for prompt cash, strong Seedling BRIERS and MANETTI STOCKS: price per 1000. Also quantity of Cuttings or Stock Plants of best sorts Zonal, Ivy-leaved, Tricolor, and Silver GERANIUMS. Sorts and prices to JOHN SON, Cranmer Nursery, Aslockton, Nottingham.

WANTED TO PURCHASE, SHALLOTS. State quantity and lowest price for cash. BUTLER, McCULLOCH AND CO., Covent Garden, W.C.

SUTTON'S BULB CATALOGUE, beautifully illustrated with numerous Engravings and a handsome Coloured Plate, representing the leading Bulbous Flowers, and containing accurate descriptions of the choicest Narcissus, together with particulars of the best varieties of Hyacinths, Tulips, &c., for bedding. Now Ready: Post-free to intending Customers. SUTTON AND SONS, The Queen's Seedsman, READING.

DAFFODILS and NARCISSUS.—One Hundred and Fifty Varieties to select from, and the finest Bulbs in the Trade. Hartland's Specia and Descriptive LIST post-free, and goods generally carriage paid. WM. BAYLOR HARTLAND, F.R.H.S., Seedsman, Cork.

Roses, Fruit Trees, &c. CHARLES TURNER'S Autumn CATALOGUE, containing full collections of Roses, Fruit Trees, Conifers, and all kinds of Hardy Trees and Shrubs, is now ready, and may be had free on application. The Royal Nurseries, Slough.

LILUM CANDIDUM.—Strong Roots, 7s. per 100; 6s. per 1000. HOPWOOD AND SON, Belle Vue Nursery, Cheltenham.

SPECIMEN and HALF-SPECIMEN STEPHANOTIS, free-flowering variety, very fine stuff, 10 to 12 feet; also 25,000 AUCUBAS, all sizes. For particulars apply to G. SMITH, Dell Nursery, Rock Ferry, Cheshire.

Begonias in Flower. JOHN DOWNIE (of the late firm of Downie & Laird) begs to intimate that his Grand Strain of the above is now in full flower. Inspection invited. Seed from the above, 1s. 6d. and 2s. 6d. per packet. Beechill Nursery, Edinburgh.

Bulbs of Finest Quality only. BARR'S BULB CATALOGUE for 1888, Now Ready. Sent free on application. Contains full Descriptive List of the best Hyacinths, Tulips, and other Dutch Bulbs in cultivation, also an interesting descriptive List of Cape and Californian Bulbs and Tubers, including many beautiful rarities. BARR AND SON, 12 and 13, King Street, Covent Garden, W.C.

PEACH TREES for SALE; 5½ feet stems fan-trained, healthy. For particulars apply. The GARDENER, Sion Hill, Kidderminster.

DICKSON'S IMPROVED MUSHROOM SPAWN, most superior, now reduced to 5s. per bushel of 14 cakes. Circular with Cultural Notes and List of Testimonials post-free on application. DICKSONS (Limited), The Royal Seed Warehouse, CHESTER.

THOMSON'S IMPROVED VINE and PLANT MANURE.—This valuable Manure is made only by us. Every bag and tin has our name on it. To be had of all Nursery and Seedsman, and direct from us. 1 cwt. and over carriage paid. London Agent—Mr. GEO. GE. 10, Victoria Road, Putney. WM. THOMSON AND SONS, Clovenfords, Galashiels, N.B.

PASTUPLANTA, the best Artificial Manure. It enriches the soil with the fertilisers drawn from it by plants; no unpleasant smell; admirably adapted for all pot plants. In bags: 112 lb., 19s.; 56 lb., 11s. 3d.; 25 lb., 6s. 9d.; 14 lb., 4s.; 7 lb., 2s. 3d. In tins, 1s. each. Sole Manufacturers, PHILIP HARRIS AND CO. (Limited), 9, Bull Ring, Birmingham.

TURF.—Finest quality, for Tennis Lawns, &c., delivered free within 5 miles or on rail at 10s. per 100. Superior Top-spit TURFS for Potting, Vine Borders, &c., 10s. per ton. J. J. KEEVIL, Merton Hall Road, Wimbledon.

Landscape Gardener. J. MUNRO, Northfields, Stamford. Advises, Designs, and Estimates for all kinds of Ornamental Ground Work, Forest and Covert Planting, &c. Thirty years' practice. Many years Nursery Manager at Dickson's, Chester; Lawson's, Edinburgh; and Osborn's, London.

W. H. LASCELLES AND CO., HORTICULTURAL BUILDERS, 121, BUNHILL ROW, LONDON, E.C. Plans and Estimates Free. See large Advertisement, October 8, page 377.

SALES BY AUCTION.

Dutch Bulbs.

Every MONDAY, THURSDAY, and SATURDAY.
Great Unreserved Sales.

MESSRS. PROTHEROE AND MORRIS will sell by AUCTION, at the Central Sale Rooms, 67 and 68, Cheapside, London, E.C., every MONDAY, THURSDAY, and SATURDAY, at half-past 11 o'clock precisely, extensive consignments of first-class HYACINTHS, TULIPS, CROCUS, NARCISSUS, and other BULBS, from Holland, lotted to suit the Trade and Private Buyers.

On view morning of Sale, and Catalogues had.

Norbiton and Long Ditton, Surrey.

SIX DAYS' UNRESERVED CLEARANCE SALE of the whole of the well grown NURSERY STOCK, by order of the Executors of the late Mr. T. Jackson.

MESSRS. PROTHEROE AND MORRIS are instructed to sell by AUCTION, on the respective Premises, the Branch Nurseries known as the Kingston Hill Nursery, King-ton Hill, the Norbiton Park Nursery, Norbiton, and the Nursery, Long Ditton, Surrey, on MONDAY, October 15, and following days, the whole of the well-grown NURSERY STOCK, extending over several acres, and in capital condition for removal, comprising thousands of Conifer and Evergreen Shrubs in the borders, for effective planting; also 3000 Standard Roses, 2000 Laurels, 2500 Privet, 3000 Cupressus and Pinus, 3000 Green Hollies, 4000 Fruit Trees, growing Crops, loose Utensils, &c.

May now be viewed. Catalogues may be had on the respective Premises; of G. C. SHERRARD, Esq., Solicitor, 26, Lincoln's Inn Fields, W.C., and Kingston; and of the Auctioneers, 67 and 68, Cheapside, London, E.C., and Leytonstone, E.

The Auctioneers desire to call attention to this important Sale, being particularly worthy the attention of gentlemen who are engaged in planting. The various Nurseries are to be let, and an opportunity is thus afforded to an incoming tenant of purchasing only what stock might be required at unreserved auction prices.

Bath.—Expiration of Lease.

SALE of well-grown NURSERY STOCK, GREENHOUSE PLANTS, and GLASS ERECTIONS, by order of Mr. E. Lilley, the land being required for other purposes.

MESSRS. PROTHEROE AND MORRIS will sell by AUCTION, on the Premises, the Bathwick Nurseries, Bath, fifteen minutes' walk from the Bath Railway Station, G. W. R., on MONDAY and TUESDAY, October 15 and 16, at twelve o'clock precisely each day, without reserve, a large assortment of well-grown NURSERY STOCK of the usual description:—2000 Aucuba japonica, 2 to 3 feet; 1200 Shrubs in border, 1 to 7 feet; Dwarf Roses, 3000 Herbaceous and Alpine Plants, 600 Standard, Pyramid, and Dwarf Fruit Trees; great variety of Greenhouse Plants; a few Orchids; seven large Orange Trees, 7 to 10 feet, in boxes. Erections of three Greenhouses, one Pit, and Hot-water Piping, &c.

May now be viewed. Catalogues had on the Premises; and of the Auctioneers, 67 and 68, Cheapside, London, E.C., and Leytonstone, E.

Wednesday Next.

2000 English-grown LILUM AURATUM, splendid Bulbs; also L. HARRISII, LONGIFLORUM, and others; Japanese IRIS, a large assortment of NARCISSUS, and other Hardy Bulbs; DUTCH FLOWER ROOTS, 500 CAMPULIAS and AZALEAS of the best sorts, and 700 STREPTA JAPONICA from Belgium; 500 EPIMEDIUM (for Forcing), in various colours; 100 GARDENIAS, GREENHOUSE PLANTS, a further portion of the London Stock of Crute's PATENT POTTERY, &c.

MESSRS. PROTHEROE AND MORRIS will sell the above by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on WEDNESDAY NEXT, October 17, at half-past 12 o'clock precisely.

On view morning of Sale, and Catalogues had.

Friday Next.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. F. Sander to sell by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on FRIDAY NEXT, October 19, at half-past 12 o'clock precisely, CYPRIPEDIUM CURTISII. A splendid importation of the above has just come to hand. Among the very few plants originally introduced, extraordinary fine varieties have flowered, and it can be imagined what marvellously beautiful kinds may be expected out of this importation. C. HOOKERII in very fine condition; LÆLIA PURPURATA, some exceptionally fine masses, in grand condition, splendidly furnished with healthy green leaves and sound dormant eyes. CATTLEYA GASKELLIANA. Very fine importation, in grand order.

The above choice and valuable ORCHIDS, together with fine masses of CATTLEYA ELDOURADO SPLENDENS, C. SUPERBA SPLENDENS, ODONTOGLOSSUM VEXILLARIUM varieties, collected in a new district in Columbia; O. LUTEOPURPUREUM SCEPTUM, ONCIDIUM AMPLIATUM MAJUS, O. CRISPUM, O. FORBESII, in very fine condition; the rare O. MARSHALLIANUM, and others. Also about 150 lots of choice ESTABLISHED ORCHIDS, another property.

On view morning of Sale, and Catalogues had.

Lee.

Close to Grove Park Station.

Remarkably well-grown NURSERY STOCK, all fit for immediate planting, consisting of an assortment of Ornamental and other Shrubs, including numerous healthy specimens; Deciduous and Flowering Shrubs, Standard, Ornamental, and Forest Trees, Fruit Trees in variety, Ivies, Ferns, &c., and particularly worthy the attention of Gentlemen, Builders, and others.

MESSRS. PROTHEROE AND MORRIS will sell the above by AUCTION, on the Premises, the Grove Park Nursery, Lee, S.E., on MONDAY, October 22, at 12 o'clock precisely, by order of Mr. G. Hind.

May be viewed three days prior to the Sale. Catalogues had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, London, E.C., and Leytonstone.

Sunningdale.

Five minutes' walk from the Sunningdale Railway Station, London and South-Western Railway.

Extensive UNRESERVED SALE of beautifully grown NURSERY STOCK, a large portion of which is growing on Land recently sold, necessitating an immediate Clearance, and affording a rare opportunity to Gentlemen as well as the Trade who are engaged in planting. The Sale will include a large quantity of Specimen Conifers and other Shrubs, symmetrically grown, and adapted for immediate effective purposes.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. Charles Noble (who has placed in their hands the disposal of his long-established Business and Freehold Estate) to sell by AUCTION, on the Premises, the Sunningdale Nurseries, Bagshot, Surrey, on MONDAY, October 22, and five following days, at half-past 12 o'clock precisely each day, an extensive quantity of remarkably well grown NURSERY STOCK, extending over about 50 Acres, and embracing a great assortment of Evergreens and Conifers, including 10,000 Thuja americana and Lobbi, some thousands of Cupressus Lawsoniana, Laurels of sorts, Green and Variegated Aucubas, Mahonia aquifolium, Retinosporas, Picea Nordmanniana, 2000 Ligustrum ovalifolium, 500 Ilex Shepherdii, and other Hollies, Ornamental and Forest Trees in variety, Andromedas, Hardy Azaleas, 2000 Berberis of sorts, Hardy Climbers, and other Plants.

May be viewed prior to the Sale. Catalogues may be had on the Premises; at the Sunningdale Hotel, Sunningdale Railway Station; and of the Auctioneers and Estate Agents, 67 and 68, Cheapside, London, E.C., and Leytonstone, E.

Isleworth.

(5 minutes' walk from the Isleworth Railway Station.)

SPECIAL TRADE SALE of beautifully grown young CONIFERS and GOLDEN EUONYMUS, for immediate potting, window-boxes, or for growing on; by order of Messrs. Charles Lee & Son.

MESSRS. PROTHEROE AND MORRIS will sell by AUCTION, on the Premises, the Wood Lane Nursery, Isleworth, on TUESDAY, October 23, at 12 o'clock precisely, 7000 of the best Silver and Golden EUONYMUS, splendidly coloured; 4000 CUPRESSUS LAWSONII RECTA VIRIDIS, 1 to 3 feet; 1200 AZALEA MOLLIIS and A. ALTA-CLARENSIS, 9 to 15 inches; 500 CLEMATIS JACKMANNII SUPERBA, in pots; 1200 THUIA LOBBII, 2 to 3½ feet; 1000 RETINOSPORAS, of sorts, 1½ to 4 feet; thousands of various CONIFERS, for potting; 500 AUCUBAS, 2 to 2½ feet; 500 Standard APPLES, of the best sorts; 500 Standard VICTORIA PLUMS; an assortment of GREENHOUSE PLANTS, ERICAS, &c.

May be viewed one week prior to the Sale. Catalogues may be had on the Premises; at the Royal Vineyard Nurseries, Hammer-smith, W.; and of the Auctioneers, 67 and 68, Cheapside, London, E.C., and Leytonstone, E.

Tuesday, October 23.—(Sale from Samples.)

NURSERY STOCK and GREENHOUSE PLANTS.

MESSRS. PROTHEROE AND MORRIS desire to announce that their next Sample Sale will take place on TUESDAY, October 23, for which they will be pleased to receive particulars of entries by Wednesday next, the 17th inst.

Central Auction Rooms, 67 and 68, Cheapside, E.C.

Friday, October 26.

IMPORTANT SALE of SELECTED DUPLICATE PLANTS from his well-known Collections of ESTABLISHED ORCHIDS, by order of F. G. Tautz, Esq.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions to sell by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY, OCTOBER 26, at half-past 12 o'clock precisely, SELECTED DUPLICATE PLANTS from this well-known collection, including amongst many others the following:—

Cypripedium Leeanum super-	Cyripedium Mrs. Charles
" Morganie	Canham
" Arthurianum	Oncidium macranthum
" Amesianum	Odontoglossum vexillarium
" Wallisi	" superbum
" Dayanum superbum, best	" leucoglossum. First-
variety	" class Certificate, Royal
" Measuresianum, good	" Horticultural Society
variety	" bravifolium
" Wallertianum	" chiriguensis
" Boissierianum	Phalenopsis Alarie
" Harrisianum vivicans	Sobralia zantholeuca
" Marshallianum	Dendrobium nobile nobiliss
" Taitianum	" splendissimum
" tesselatum porphyreum	Cattleya Trianae Backhousiana
" Fairreanm	Lælia anceps Dawsoni
	Celogyne tomentosa

On view morning of Sale. Catalogues forwarded on application to the Auctioneers, 67 and 68, Cheapside, London, E.C.

Sunbury, Middlesex.—Preliminary Notice.

VALUABLE FREEHOLD NURSERY.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions from the owner to sell by AUCTION, on the Premises, on MONDAY, October 29, the VALUABLE FREEHOLD NURSERY, known as Osborn's Nursery, Sunbury, comprising 17 Acres of very productive Land, Brick-built Residence, 21 Greenhouses, 2 miles of Hot-water Piping, numerous Pits, Stabling, and other Trade Buildings. The Estate possesses extensive frontages to the public roads, and these frontages could be utilised for building purposes, without interfering in any way with the carrying on of the present Nursery and Florist's Business.

Particulars and Plans can be had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, E.C.

N.B.—The Extensive STOCK of STOVE and GREENHOUSE PLANTS and OUTDOOR NURSERY STOCK will be sold by AUCTION, on the Premises, on MONDAY and TUESDAY, October 29 and 30.

Tuesday, October 30.—Orchids in Flower.

MESSRS. PROTHEROE AND MORRIS desire to announce that their NEXT SPECIAL SALE of ORCHIDS IN FLOWER will take place as above, for which they will be glad to receive NOTICE OF ENTRIES as early as possible.

Bulbs from Holland.

Sales every MONDAY, WEDNESDAY, and SATURDAY, in Large and Small Lots, to suit all Buyers.

MR. J. C. STEVENS will sell by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., every MONDAY, WEDNESDAY, and SATURDAY, at half-past 12 o'clock precisely each day, first class consignments of HYACINTHS, TULIPS, CROCUSES, and other BULBS, arriving daily from well-known Farms in Holland.

On view morning of Sale, and Catalogues had.

Thursday Next.—(Sale No. 7770.)

First Consignment of the season; 10,000 grand Bulbs of LILUM AURATUM, just received from Japan, in the finest possible condition. Also 15,000 SEEDS of ARECA SAPIDA, just arrived.

MR. J. C. STEVENS will include the above in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, October 18.

On view morning of Sale, and Catalogues had.

Thursday Next.—(Sale No. 7771.)

SPECIAL SALE of ORCHIDS in FLOWER and BUD.

MR. J. C. STEVENS will sell by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, October 18, at half-past 12 o'clock precisely, a fine COLLECTION of ORCHIDS in FLOWER and BUD, comprising many choice varieties.

On view morning of Sale, and Catalogues had.

Seed Trade.

WANTED TO PURCHASE, a BUSINESS, or PARTNERSHIP, that could be profitably worked by a practical man with fair capital.—Particulars, in confidence to BUSINESS, *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

FOR SALE, a NURSERY, SEED, and CUT FLOWER BUSINESS, situated in a rising town in Yorkshire. The Nursery is 6 acres, and is well stocked with a first-class General Nursery Stock. There are 4 Plant Houses and a number of Pits, all well suited for Market work. The shop trade is mostly cash, and satisfactory reasons will be given or shown why disposing. This is a rare opportunity for a retiring Gardener.—Apply to S. *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

TO BE SOLD, as a concern in working order, an old-established SEED BUSINESS (Retail and Wholesale), in the best part of the City of London. Capable of much extension.

A. B., W. Gilks, Esq., 15, Lincoln's Inn Fields, W.C.

South of England.

LARGE GARDEN, 20 Acres, with Twenty Greenhouses and Vineries. £7000 has been spent on the property. Seven years' lease. Two Cottages inclusive. £150 a year. ELDRIDGE, Portsmouth.

TO LET, a SMALL NURSERY, with one Long Pit, and about 340 feet of Glass. With stock, or without. Twelve years' Lease on easy terms. Off High Street, near Railway Station, Lewisham.—Apply, Miss SIMES, 154, Courthill Road, Lewisham, S.E.

ORCHIDS.

THE LIVERPOOL HORTICULTURAL CO.

(JOHN COWAN), Limited,

Have just received a fine Importation of

ODONTOGLOSSUM RÆZLII.

" VEXILLARIUM.

ONCIDIUM KRAMERIANUM.

" UNDULATUM.

LÆLIA DAYANUM.

" DORMANIANUM, &c.

Circular with full particulars of these and other Importations, also copy of their new Illustrated and Descriptive CATALOGUE of ORCHIDS, will be sent free on application.

THE VINEYARD AND NURSERIES, GARSTON, near LIVERPOOL.

ODONTOGLOSSUM JONESIANUM.—Good plants, with flower spikes, 5s. each; 50s. per dozen. F. SANDER and CO., St. Albans.

ORCHIDS.—Cheap, a small and choice collection, some are of cool and warmhouse Orchids, in perfect health. Many showing for bloom. Lists returnable. Mr. STAMPER, Ulverston, Lancashire.

Grandest Violet.

DOUBLE VIOLET, "VICTORIA," best for pots, frames, or garden, 3 First-class Certificates. Strong clumps, at reduced price, to 10s. per dozen. Remittance to accompany all orders. Order now from Mr. J. CHAMBERS, the Kaiser, Westlake Nursery, Isleworth, W.

EUONYMUS (Green).—50,000, all nice bushy well-grown Specimens, 9 to 36 inches, £1 to £10 per 100. J. J. CLARK, Goldstone Farm, Brighton.

FOR SALE.—Four Large Specimen FICUS ELASTICUS, in pots, from 4 to 7 feet high, healthy and clean; also Two fine Specimen LAURUSTINUS, in pots, 4 feet high and 4½ feet through, and well set with bloom—white variety. J. GARDNER, Elmham Hall Gardens, Brigg, Lincolnshire.

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AUTUMN SHOW, TUESDAY AND WEDNESDAY, November 13 and 14. Class 7 (Open): Chrysanthemums, 48 Cut Blooms Incurred or Reflected (not less than 18 varieties or more than 2 blooms of a variety); and 24 Japanese (not less than 18 varieties and not more than 2 blooms of a variety). 1st Prize, Annual Challenge Cup, value £15 (to be held for one year), and 100s. and 50s. 2nd, 3rd, 4th, 5th, 6th, 7th, 8th, 9th, 10th, 11th, 12th, 13th, 14th, 15th, 16th, 17th, 18th, 19th, 20th, 21st, 22nd, 23rd, 24th, 25th. Particulars and Schedule of Prizes on application to

CHALONER SHENTON, Hon. Secretary.

74, High Street, Winchester.

ROYAL CORNWALL POLYTECHNIC CHRYSANTEMUM SHOW.

—An EXHIBITION of CHRYSANTEMUMS, FRUIT, &c., will be held in the Polytechnic Hall, Falmouth, on NOVEMBER 14 and two following days. For Schedules, &c., apply to the Hon. Secretary.

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GRAND FLORAL FÊTE, YORK.

JUNE 18, 19 and 20, 1889.

PRIZES nearly SIX HUNDRED POUNDS.

Schedules ready in January. Apply to

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HOW TO MAKE THE MOST OF THE LAND by the Profitable Cultivation of Fruit, &c. The HORTICULTURAL AND TECHNICAL COLLEGE, Lim., Swanley, Kent. Winter Session commences Oct. 17.—Address, Mr. BUCKLAND.

ROSES! ROSES!! ROSES!!!—The best and cheapest in the World. 40 choice Perpetuals for 21s. Purchaser's selection from 400 best varieties. CATALOGUES free on application. Ten acres of Roses, 100,000 grand plants to select from. Plant now.

JAMES WALTERS, Rose Grower, Exeter.

Palms, Foliage Plants, Heaths, &c. FRANCIS R. KINGHORN will be pleased to forward LIST of above with low prices. Leading decorative PALMS in all sizes, great quantities, and in finest health.

Richmond, Surrey; and 191 and 193, Flower Market, Covent Garden, W.C.

The New Raspberry,

LORD BEACONSFIELD.

(A Seedling).

The finest Raspberry and best cropper ever known. First-class Certificate, Royal Horticultural Society. Canes £2 per 100; 6s. per dozen. Trade supplied; Cash with Order.

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FOR SALE, TREE FERNS, viz., Cyathea dealbata, Alsophila excelsa, Dicksonia squarrosa, D. antarctica, 6 feet high. Also a few large CAMELLIAS.

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SPECIAL OFFER OF FERNS.—Pteris tremula, P. cretica, P. cretica cristata, P. serrulata cristata compacta, in thumbs, fit for immediate potting. Also the same varieties, good stuff, in 48's, to offer in quantity. Prices per 100 or 1000 on application.

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The only complete Collection of Daffodils existing. **BARR'S NEW DAFFODIL CATALOGUE** for 1888. Now Ready. Free on application.

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Roman Hyacinths—Lilium candidum HURST AND SON have stocks of the above in good condition, and will quote Lowest price on application.

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STRAWBERRY PLANTS, in small pots. Splendid stuff of all best kinds, and true to name. Price List on application.

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SHIRLEY POPPIES (the genuine strain). The most startling novelty of the season. Surprising results. Sow now for next season's display. Sealed packets, with description, &c., 1s. post-free.

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EVERGREEN HEDGES.

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YEW, English, 1½ to 2 feet, 30s. per 100; 2 to 2½ feet, 45s. per 100; 2½ to 3 feet, 65s. per 100.

HOLLIES, Green, 2 to 2½ feet, 40s. per 100; 2½ to 3 feet, 60s. per 100.

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THUJA LOBBII, 2½ to 3 feet, 30s. to 40s. per 100.

We hold immense stocks of the above, all bushy and well rooted Plants.

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Camellias, Azaleas, Rhododendrons, Palms, Orchids, &c. Plants grown specially for English use.

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The most complete and exhaustive Treatise on Grapes and their Culture ever published.

New Edition.

Price 5s., post-free 5s. 6d.

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EUCHARIS for Sale, for Cash: offers wanted:—

Two No. 12 pots, well filled with Bulbs.

Seven No. 24 pots, well filled with Bulbs.

Forty Small Plants in No. 60 and 54 pots.

Free on rail at Aslockton.

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Christmas Roses—(the large-flowering variety).

100,000 fine, healthy and strong Plants to select from, all my own growing (not imported), as far as unsold:—

	Per 100.	Per 1000.	Per 10,000.
Extra size	70s.	600s.	5000s.
1st	60s.	500s.	4000s.
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SPHERE JAPONICA, extra strong clumps. GLADIOLUS BRENCHEYENSIS, fine bulbs. For large quantities special prices on application. Cases and packing free. Offered by HERMAN BUDDENBORG, Bulb Grower, Hillegom, near Haarlem, Holland.

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An Immense Stock of recently-imported Plants compels a sale of the established plants to make room. They have not yet flowered, but are all flowering plants, and must be sold at a great sacrifice. Very valuable varieties are certainly to be obtained, and great bargains. The Special Offer affords a paying investment to anyone with glass at command, which should not be overlooked. Such plants may never again be offered to the public and the Trade. LILIES, Silver Banksian Medal, Silver Medal National Chrysanthemum Society, September, 1888. JAPANESE MAPLES, Silver Banksian Medal.

TREE PÆONIES, 7 First-class Certificates.

IRIS, most gorgeous, 4 First-class Certificates.

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B. MALLER AND SONS beg to offer to the

Trade a very extensive and unusually well-grown stock of ERICAS (Hyemalis and other varieties), EPACRIS, SOLANUMS, GENISTAS, CYCLAMENS, BUXVARDIAS, ADIANTHUM CUNEATUM, and other FERNS; GARDENIAS, STEPHANOTIS, BOKONIA MEGASTIGMA, FICUS ELASTICA, CROTONS, GREVILLEAS, Tea ROSES, &c.

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ORCHIDS AND PALMS SPECIALTIES.

The Stock is of such magnitude that without seeing it is not easy to form an adequate conception of its unprecedented extent.

FRUIT TREES, ROSES, AZALEAS, CAMELLIAS.

BOUVARDIAS, CYCLAMENS, ERICAS, EPACRIS, PRIMULAS, SOLANUMS, TREE CARNATIONS, and other

WINTER and SPRING BLOOMING PLANTS,

of fine quality and immense numbers.

INSPECTION INVITED.

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CLAPTON NURSERY, LONDON, N.

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HARDILY-GROWN FOREST, FRUIT,

TREES & PLANTS,

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Carrage Paid. Strong healthy trees, the finest that money can buy. Roses wonderfully cheap. Cordons a spécialité. Before ordering be sure to write for our Illustrated CATALOGUES. JOSHUA LE CORNU and SON, High View Nurseries.

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Strong Roots, 1s. per 100. Plants in small pots, 16s. per 100; ditto in large pots, 25s. per 100. Descriptive LIST free.

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THE GARDENERS' ORPHAN FUND.**DONATIONS and SUBSCRIPTIONS**

WILL BE THANKFULLY RECEIVED BY

A. F. BARRON, Hon. Sec.,

Royal Horticultural Society's Gardens, Chiswick, London, W.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.

NOTICE IS HEREBY GIVEN that an ADDITION will be made to the LIST of PENSIONERS of this Institution in JANUARY NEXT. All Persons desirous of becoming Candidates are required to send in their application to the Committee, with their Testimonials and Certificates, on or before the 5th November next, after which day they will not be received. Preference will be given to those Candidates or their Widows who have been Subscribers for Fifteen clear years at least. Should there not be a sufficient number of these candidates to fill the vacancies, then the applications of those who have not subscribed so long or not at all will be considered.

By order, EDW. R. CUTLER, Secretary, 50, Parliament Street, London, S.W., October 3, 1888.

P.S.—Printed Forms of Application may be obtained from the Secretary.

THE PARKS COMMITTEE of the Halifax Corporation are prepared to RECEIVE TENDERS for the SUPPLY of 100 TREES, 14 feet to 16 feet in height, of any of the following species:—Western Plane, Lime, Sycamore, Wych Elm—delivered at Savile Park, Halifax, before November 30, 1888. Tenders, endorsed "Tender for Trees," must be sent to the undersigned before November 10, 1888.

By order, KEIGHLEY WALTON, Town Clerk, Town Hall, Halifax, September 27, 1888.

Borough of Penzance. TO LANDSCAPE GARDENERS.

Extension of Time.

THE PENZANCE TOWN COUNCIL invites PLANS for LAYING OUT as PUBLIC WALKS and PLEASURE GROUNDS the Morrab House Property. A Report explanatory of the details of the plan and estimated cost must accompany each design. Premiums of Twenty and Ten Guineas will be given for the best and second best Designs respectively. Should the Author of the Premiated Plan be selected to carry out the work the Premium will merge in the Commission. The Premiated Plans to become the property of the Council. The Grounds to be laid out—4 acres in extent, and having throughout a southern slope—can be seen on application to the Borough Surveyor, from whom a Plan may be obtained on payment of £1, which will be returned to those forwarding designs.

Plans, &c., with distinguishing motto and name in sealed envelope, to be sent to me at my office, Public Buildings, on or before OCTOBER 27 next, instead of 20th instant, as previously advertised.

Penzance, October 3, 1888.

THOS. CORNISH, Town Clerk.

23, Market Street (off Parliament Street), York.

CLUES BROTHERS,

SEEDSMEN, FLORISTS, & DUTCH BULB IMPORTERS,

In succeeding to the business lately carried on by G. H. HEWSON, at the above address, wish to intimate to his Customers and the Public generally that their intention is to supply everything connected with the trade of the purest quality and on the most reasonable terms, trusting thereby to insure the confidence and support so liberally accorded to their predecessor. The experience of W. CLUES (Manager), in some of the leading firms—viz.: Messrs. Downie, Laird & Laing, Florists to the Queen, Edinburgh and London; Messrs. Fisher, Holmes & Co., Sheffield; and Messrs. Edward Wells & Sons, the Queen's Seedsmen, Worsley, Stourbridge—will, we trust, be sufficient guarantee of his efficiency in the trade.—September 25, 1888.

The Bankruptcy Act, 1883.

TO NURSERYMEN and OTHERS.

Re E. Crapper & Co., Bankrupts.

Mr. J. J. Marriott's Separate Estate.

TO BE SOLD, by Tender, the Stock of

Seedlings and Small Transplanted RHODODENDRONS, growing in a field on Lucas Moor, situated on the Chesterfield Road, about 1½ mile from Matlock Bridge Railway Station, and in a field on Rushley Moor, about 2 miles from the same place. In all about 2 acres.

Also the stock of 1 and 2-yr. transplanted FOREST TREES, consisting of Larch, Sycamore, Beech, Austrian and Corsican Pines, Quick, Scotch Fir, Poplars, Laurel, Privet, Elders, (growing on about 4 acres of land); sundry Garden Tools, Frames, &c., at the Hardon Nursery, situate about ½ and 1½ mile from Rushley and Walsall Stations respectively.

For further information, apply to the Trustee, GEO. BYTHEWAY, F.S.A., The Bridge, Walsall, to whom separate Tenders are to be sent not later than October 13 next.

80,000 CLEMATIS, in Pots, of all the

finest Double and Single Varieties (some of the flowers of which become 10 inches across, and are of every shade, from pure white to the darkest purple), for climbing and bedding, from 12s. to 24s. per dozen, strong plants; extra strong plants, rooted into 5½-inch pots, 2s. 6d. each; Beauty of Worcester, a magnificent purple, excellent for bedding, recently sent out by us, reduced price 2s. 6d. each. Descriptive LIST on application.—RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

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All of finest quality, at lowest prices.

	Per 100.	Per doz.
BRIGHT BLUE ..	12 6	1 9
DARK BLUE ..	12 6	1 9
LILAC ..	15 0	2 3
CRIMSON ..	15 0	2 3
BRIGHT RED ..	15 0	2 3
PINK ..	17 6	2 6
PURE WHITE ..	22 6	3 0
WHITE-TINTED ..	21 0	3 0
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For other Bulbs see Catalogue, forwarded Gratis and Post-free on application.

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BULBS.

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We have dealt in them for more than eighty years.

We have visited the best Bulb Farms and have selected the best roots and the best varieties.

The Bulbs we have supplied have *practically always* given satisfaction, and our prices are moderate.

Illustrated descriptive List of Dutch and Home-grown Bulbs free.

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Stout Plants of the best varieties.
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(Limited)

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CHEAP BULBS FOR FORCING, &c.

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VAN THOL TULIPS ..	4 6
SECOND SIZE NAMED HYACINTHS for forcing, our	
own selection, assorted colours ..	21 0
UNNAMED HYACINTHS for bedding ..	14 6
15 per cent. discount, cash with order. Carriage paid.	
NAMED HYACINTHS, best quality, equally cheap.	

GARAWAY CO.,
DURHAM DOWN, CLIFTON,
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**CUTBUSH'S MILL-
TRACK MUSHROOM SPAWN.**
—Too well known to require description.
Price, 6s. per bushel (1s. extra
per bushel for package), or 6d. per
cake; free by parcel post, 1s.

None genuine unless in sealed packages and printed cultural directions enclosed, with our signature attached.

WM. CUTBUSH AND SON
(Limited), Nurserymen and Seed
Merchants, Highgate Nurseries, N.

HELLEBORUS NIGER, OR CHRISTMAS ROSES.

I can offer a magnificent lot of Christmas Roses, probably the finest lot in the Trade, especially of the H. niger major variety, which is the great favourite among market growers. These now offered are home-grown clumps full of flower-buds, and will be ready to lift in October; and I would advise early orders to secure them, as the stock of fine clumps is very limited.

MAXIMUS.

A robust variety, the largest of the group, and very ornamental as a foliage plant. It flowers in October and November, the blossoms are large and white, shaded with rose on the exterior, and generally produced in twos, but if shaded or a glass placed over the plants, the flowers are then pure white. By shading the flowers can be retarded even to December. It is the most vigorous of the section, and succeeds where many of the others fail to grow.

MAJOR.

Although this plant is frequently offered, it is seldom to be obtained true to name, owing to its great value for cutting purposes. The flowers are pure white under glass, but have a slight rosy tinge in the open; it is the greatest favourite among market growers, producing flowers from December to January. It is a grand variety for potting, the foliage is so close and compact, and the flowers abundant.

RUBRA.

One of the most distinct and novel of this group. The flowers are large, produced about the end of January, and of a lovely colour. It is a robust grower, free blooming, and a decided acquisition for cutting.

RIVERSTON.

A fine distinct variety, somewhat in the way of H. maximus, but with smaller foliage, yet a strong robust variety. The flowers are produced in pairs, pure white, and blooming in the open at Christmas, a little earlier than major and later than maximus, thus forming a nice succession, and will be found a fine addition to our list of these useful winter-blooming plants.

COLLECTED PLANTS.

These are far superior to the ordinary stuff generally offered, which are usually dried up and half dead before received, being collected by inexperienced men; those now offered are fine healthy plants, and usually are as fresh as when first lifted, and always do well.

Prices on application.

THOMAS S. WARE,
HALE FARM NURSERIES,
TOTTENHAM.

PALMS, FERNS.

K. DROST begs to offer to the Trade a very extensive and unusually well-grown stock of Palms for Decorating purposes, for Table Plants (nicely shaped), and for growing on, consisting of KENTIAS, COCOS, LATANIAS, ARECAS, CORYPHAS, PHOENIX EUTERPE, &c.; and further, a large quantity of extra good PTERIS TREMULA and DORYOPTERIS PALMATA in 4s-pots, ADIANTUM VICTORIE, in 6s-pots, and thousands of SMALL FERNS of the best Market varieties.

AN INSPECTION INVITED.

KEW NURSERY, RICHMOND, S.W.

SPECIAL CULTURE OF FRUIT TREES AND ROSES.

A Large and Select Stock is now offered for Sale.
The Illustrated and Descriptive Catalogue of
Fruits post-free.

The Descriptive Catalogue of Roses post-free.

THOMAS RIVERS & SON,
THE NURSERIES, SAWBRIDGEWORTH, HERTS.

ROSES IN POTS;
all the best New and Old English and Foreign
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Descriptive List free on application.

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PALMS, CLEAN AND HEALTHY.

WILLIAM ICETON has a very extensive stock of all the leading kinds, in fine condition; 20 houses being devoted to their growth, many being fit for exhibition of the following varieties:—*Areca lutea*, *Cocos flexuosa* and *Weddelliana*, *Kentias* of all kinds; *Scaevola elegans*, *Latania borbonica*, *Phoenix reclinata*, *rupicola*; also a very large assortment of Palms in 60's and 48's for table. Inspection invited.—Putney Park Lane, S.W.; and 129 and 130, Flower Market, Covent Garden, W.C.

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CONSIST OF THE FINEST
SELECTED

HYACINTHS,
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LILIES, SNOW-
DROPS, ETC.



From Mr. G. H. GREEN,
Gardener to the Right Hon.
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Enville Hall:—"I never
saw any (Hyacinths) do
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trusses: they were admired
by all who saw them."

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and H.R.H. the Prince of Wales.

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Free to Destination.

CHEAP PRICES.

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Hyacinths, Tulips,
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Snowdrops, and all
other Bulbs and Plants,
recommend their

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(Own selected, well proportioned)

Collection B containing 3496 finest flower-roots.	Price 5 Gns.
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Collection A containing 1276 finest flower-roots.	Price 5 Gns.
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50 Hyacinths, named, in 9 colours	100 Crocus, yellow
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25 Scilla siberica	50 Tritelia uniflora
25 Scilla campanulata	50 Snowdrops
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Half the Box, 11s., Carriage Free;
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"EVERGREENS."

Stock quite UNEQUALLED for superior QUALITY.

IMMENSE variety and great extent.

Inspection earnestly invited.

DICKSONS Nurseries, Chester.
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TEA ROSES } A grand stock, in 5-in. pots, 12s. & 18s. doz.
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GRAPE VINES } Black Hamburg and other varieties.
Suitable for fruiting in pots, 10s. 6d. each
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THE VINEYARD AND NURSERIES, GARSTON,
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IRIS RETICULATA.

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Special Wholesale Catalogue of Bulbs,

Containing LIST of all the best varieties of HYACINTHS, TULIPS, CROCUS, LILiums, DAFFODILS, SNOWDROPS, IRIS, &c., free on application.

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An immense Stock. 200 Named Sorts, from 1 foot to 5 feet high, including many varieties of our own raising, in addition to the best varieties of other raisers.

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Many thousands of Azalea mollis and other choice varieties, well-budded plants.

Silver-variegated, Hodgins' and other Hollies.
Of these we have a surplus stock, and can offer them at low prices.

Priced Descriptive CATALOGUE of the above and General NURSERY STOCK free on application.

ISAAC DAVIES & SON, Nurserymen, ORMSKIRK.

SUTTON'S INIMITABLE BEDDING HYACINTHS

In distinct shades of colour, and to flower simultaneously.

Scarlet, Dark Rose, Light Rose, Blue, Light Blue, Dark Blue, Pure White, Tinted White.

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For simultaneous flowering.

White, Yellow, Scarlet, Rose and White, Crimson, Purple, Lilac, Bright Rose, Crimson and Gold.

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As a Supplement
TO THE
GARDENERS' CHRONICLE

Next Week, October 20,

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OF

DRAGON-TREES,

in the Garden of W. P. Hinton, Esq., Madeira.



THE

Gardeners' Chronicle.

SATURDAY, OCTOBER 13, 1888.

A HERTFORDSHIRE FRUIT NURSERY.

THE goal of the day's excursion was the world-famous nursery of Messrs. Rivers & Son, at Sawbridgeworth—a name which always conjures up pleasant pictures in fruit-growing—an agreeable day, spent, if you are fortunate in the day, with a most genial, and, in fruit-lore, most learned of our nurserymen.

Nowhere in these islands are so many object-lessons in practical fruit-growing to be found as here, for you are not only shown the young trees in every stage of youthful development, as maidens and trained in almost every fashion, but as fully grown, and in quantity from a few rods to several roods. This nursery, it may be stated, is best reached—from London, at least—from the Great Eastern Railway, Cambridge line, at Harlow.

On the present occasion the first visit paid was to a nursery of quite young stuff at the farm—for Mr. Rivers is a farmer as well as nurseryman. Here were found on ten acres of really stiff clay soil Apples, one and two-year old plants, budded on Paradise and Crab, smooth in the skin, and straight as could be wished—precisely the kind to plant before the head is formed—that can come afterwards. By planting young vigorous Apples before the roots have rambed far from home, there is little mutilation of roots in digging out, as is so often, and perforce must be, the case with trees more than two years in the lines after being budded or grafted. From such kind of trees the planter can form whatever form of tree or bush he may wish, as these are in all cases the foundation on which the superstructure—be it round-headed orchard tree with a 6 or 7 foot stem, a bush with lesser-sized head and stem of 2 feet or nothing at all, pyramids, cordons of all kinds, vase, espalier, or fan-trained—is raised. Pears and Plums were likewise found in very

large numbers in these plantations at the farm. Amongst them some are found which do not succeed—make growth weakly or slowly. These are of a certainty marked for extinction; as nothing which must be added to make it a tree is tolerated; and it is only when a great number of varieties of any kind of fruit is grown under the same sort of conditions that it is easy to pick out the “weeds.”

A great hedge—or, rather, two hedges—protect this young nursery from the north wind. It is an old English lane, such as all lovers of the picturesque in scenery would admire, which skirts the nursery, and which is bounded on either hand by these old hedges of *Ulmus glabra*, *U. campestris*, Hazel, Holly, and other trees whose seeds, in most instances, have blown thither. It is not neat, it might even be considered but little to the credit of the farmer by one of the modern school, but it is a protection, and a good one, to the nursery of young trees. Time nor space permits us to repeat all the encomiums which were lavished by Mr. Rivers on the lane and its hedges, so we will get on to the main nursery grounds, nearer to the village of Sawbridgeworth.

Plums.—The trees were getting somewhat bare so that the fruit still hanging on them was readily seen, especially Plums. Of these fruits were observed Monarch, the late variety of the future—that is if Mr. Rivers' untried products of hybridisation do not excel it in some points. It is an oval purple-skinned fruit for kitchen use, and a very heavy cropper. Young trees of two and three years bore one to one and a half dozen of fine fruits; and as earnest of his faith in the variety, Mr. Rivers has planted it largely for fruiting. There is doubtless money in a Plum which, in ordinary seasons, does not ripen before the first week in October, and in late ones fourteen days later. Plum Pond's Seedling is too well known to need much said about it here; it is simply a late Denyer's Victoria, and a useful kind. Autumn Compote must be classed with Monarch as a valuable late Plum; it is red in colour, of medium size, and is also an excellent and certain bearer. Late Transparent Gage should be planted generally in the milder parts of the country, either as a bush, standard, or pyramid, doing equally well on them all. It is a delicious fruit with a crackly flesh, ripe usually the first or second week of October from free standing trees, but from trees on all walls but those with a northern aspect it is earlier than this.

Some other varieties of the Plum which are much thought of at Sawbridgeworth, are, among early ones, The Czar—large purplish fruit ripening at the end of July: the tree is hardy and vigorous of growth; Early Rivers and Early Favourite, both purple and of medium size. The first is a seedling from *Précoce de Tours*, and is an enormous bearer. Grand Duke is a very large black Plum. It is a seedling from Autumn Compote, a red Plum, and ripens about the middle of October. The flavour is good and it is a trustworthy variety to plant.

Many seedling Plums are under trial, and in due course some fine things will be distributed from among them. This group of Plums is not the produce of chance seedlings, but rather the result of careful, long carried out experiments, many of them having been initiated by the father of the present owner. After years' of waiting some of these varieties have turned out failures, whilst others have immediately met with approval on their being brought into commerce.

In passing, it may be stated that some of the nursery hedges are of Plum seedlings, Portuguese Quince, and Medlar, the latter budded on the original Whitethorn plant of which the hedge consisted, and allowed to grow free with but little trimming. In good years these hedges, which are both tall and thick, are filled with fruit, and the first two afford much food for the birds, to the benefit of the rest of the nursery.

Some espalier trees of various sorts of Plums were

observed, their branches running perpendicularly. These had been planted for many years, and from the first secured to wires stretched horizontally from oaken posts. The trees were still very fruitful, and had become capable of standing in position without the wires, although these remained. Similar fences made with upright or diagonal cordons are of Apples and Pears, and serve as wind-breaks to protect quarters of fruit in the same way as ordinary hedges would do, with the additional advantage that the hedge will bear some fruit in most years, and good crops in favourable years. One pruning in summer (July) is sufficient with the ordinary winter pruning to keep these plants neat in appearance and fruitful.

Orchard Management.—As has already been said, various methods of planting trees for profit may be observed in this nursery, and one of these which will appeal to the intending grower of fruit either on a large or small scale is a quarter, it may be less than a rood, of Apple trees standing at a distance of 9 feet between the rows and 6 feet in the rows. The trees, in many cases carrying heavy loads of fruit, were simply medium-sized standards minus the stem, for in no case was this 2 feet in height, and in many less. Thus the trees were close to the ground, sheltering each other better than standards would do, or being sheltered by the hedges before mentioned; moreover, every part of the tree was readily reached for gathering the fruit and pruning the branches; no ladder with a man or two to use it, which is in itself an expense, but the whole work of gathering may be done by a boy or girl instead. This kind of orchard planting is just what the farmer who can come to satisfactory terms with his landlord, if he be not owner of the land, should plant. And if every farmer occupying 100 or more acres of land would carefully prepare a rood or two, and large holders an acre of sheltered or shelterable land of suitable quality, plant it with the right varieties of Plums, Pears, Apples, and chiefly the first and last, a great quantity of fruit would come on to the market in due course. Of course ground game must be kept out with wire netting, and other trespassers by a steel barbed wire or two at the top. Some of Mr. Rivers' experimental plantations of bush, standard, and pyramidal trees are intercropped with bush fruit or nursery stock, some—the oldest—do not admit of this being done, and are bare of all other crops. On a farm or allotment no ground would be under the trees, but there would be turf under the standards where there were no bushes, and such would be fed off by sheep, nothing larger; or Strawberries might be grown, but no vegetables of coarse growth which would rob the soil to the detriment of the permanent crop—the trees. Where dwarf trees of any form are grown there could be no feeding off by sheep, but the grass, if any, would have to be mown.

Trees in Pots.—In looking through the many houses splendid Pears and Apples were observed on trees growing in 8-inch and 10-inch pots with a surfacing of manure. Pears and Apples were likewise standing in large numbers in the open, their pots partly sunk into the soil—these likewise bore magnificent fruits. As examples of what may be done in this way in a very small space we may mention four Pear trees—General Todtleben, Triomphe de Jodoigne, Nouvelle Fulvie, and Madame André Leroy, which would be standing on a parallelogram of 4 feet \times 4 feet. There were on these pyramid trees about 60 fruits worth, to the grower from 4d. to 6d. each; therefore, at the lesser sum they would be worth in London, or any large town, £1. This speaks well for the profits of fruit-growing when properly done. Another instance of this was a house which had pot-Vines at the sides, but not much foliage on the roof, and was partly filled in the centre at the time of our visit with Peaches in pots. From this house there had been gathered this year 4000 Peaches from several successional groups of trees, besides Grapes from one hundred pot Vines. The Peaches had all been bloomed in the house, then placed out-of-doors when safe, and again transferred to the house to fruit in succession.

Pears and Apples were found in quantity, growing in small pots—nice pyramidal stuff, well loaded with large fruits, to keep which hanging on the trees as long as was necessary for perfect ripening they were slung each in its bag of coarse fish-netting. The pots are partly plunged in the soil and heavily top-dressed with manure in some cases; in others some special manure—Thomson's or Beeson's, probably—was given occasionally. We saw some very fine Pitmaston Duchess, Souvenir de Congrès, Marie Louise d'Uccle, Doyenné du Comice, Beurré Baltet, a nice fruit, ripening in a large span-house along with late Peaches, Lady Palmerston, Sea Eagle, Salway, Mr. Gladstone, and others.

A very good method of growing cordon Pears was observed on a southerly sloping trellis of laths enclosed by a wall of boards secured to Oak posts. This trellis was about 1 foot from the soil at the front, and 2 feet at the rear. The trees, which are planted on the outside, close to the boards, may stand 2 feet apart, and are bent at an obtuse angle, and made fast to the trellis. There are great advantages obtained in this way; the trees can be easily protected from frost in the blooming period by means of lights, which can be placed at about 8 inches above them. The fruit is fully exposed to the sun, and it is impossible for the wind, however strong, to blow it off. The score of trees would yield on an average twelve fine Pears each, say forty dishes.

The varieties of the Apples in pots were Emperor Alexander, Dumelow's Seedling, Cox's Orange, Warner's King, very large, quite 5 inches in diameter; the scarlet Golden Pippin, a fruit that has a more juicy flesh than the old Golden Pippin; King of Tomkin's County, very fine showy fruit in pots in the open; Lady Henniker, Grimes' (American) Golden Pippin.

In one of the houses a pot-grown tree of a late, showy, scarlet-fruited Cherry was noticed—Tardive de Winkle. It is tender, fleshy, sweet, large, and will hang till the end of October—a great acquisition in sweet dessert Cherries, and should in time run the Morello, with its tart smack, out of the field. The general nursery stock, both out-of-doors and under glass, was abundant and healthy. Maréchal Niel Rose is grown in large numbers, and so well, that the stock is soon bought out. The same holds goods of Vines in pots. Of fruiting Vines, three houses are just now a splendid sight; these consist of Gros Maroc and Madresfield Court in one division, Mrs. Pince and Gros Colmar in another, Muscat of Alexandria in a third. The Vines, notwithstanding the continuous heavy cropping—50 lb. at least to a Vine—show no indications of failing vigour, the bunches and berries being as large and as well coloured as in any previous year. Nothing is done to the borders beyond forking them over once a year, and affording them a dressing of some artificial manure, and perhaps that little is not necessary, the roots being down in the good deep loam overlying the Greensand, the latter affording egress to the surface-water, and also supplying moisture at call to the upper crust.

NEW OR NOTEWORTHY PLANTS.

CYPRIPEDIUM CHELSEENSE \times , *n. hybr.*

“I HAVE the pleasure of sending you herewith the flower and leaf of one of my seedling *Cypripediums* now blooming for the first time. As you will see, it is intermediate between the parents, *Cypripedium Loweii* and *Cypripedium barbatum purpureum*. Its habit and style of growth favouring *Cypripedium Loweii*, as also the flower-spike, which I have sent you entire. The leaf is an old one, but the young ones show somewhat the marmoration seen in those of *C. barbatum purpureum*.”

With these very apt remarks Mr. W. Bull has sent me a leaf, much resembling *Cypripedium Loweii*, and a fine two-flowered peduncle. The plant appears to be the inverted mule of *Cypripedium calanthum*, a Sedenian work at Messrs. J. Veitch & Sons (1876).

That is a descendant from *Cypripedium venustum* biflorum and *C. Loweii*, while Mr. Bell's plant is derived from *C. Loweii* and *venustum purpureum*. The chief characteristic lies in the staminode. *Cypripedium calanthum* has that of *C. venustum*, while *C. chelseense* × has that of *C. Loweii*. The colour of the flower is totally distinct. There is a very near ally of those two, *Cypripedium pycnopterum*, one of those Orchids whose parentage is not known. At all events its staminode gives it a full claim for distinction, and, excepting the petals, the whole flower is green. The plant is very beautiful. The leaf at hand is 1 foot long. The brown peduncle is very long, with a shortly hairy surface, and bears two flowers. The bracts are very short, spathaceous-ancipitous, semi oblong, acute, greenish, with mauve-purple veins. The dorsal sepal is elliptic acute, with reddish veins. The inferior part is covered with blackish-brown, the superior is yellowish-green. The petals are very shining, ligulate, broader towards the apex, bent in a revolute manner in the middle, blunt acute at the apex, dark purple on the anterior part, green at the superior part, with small blackish freckles, and ciliate at the superior margin. Lip nearly like that of *Cypripedium Loweii*, with strong lateral horns, brownish, with an inferior, ochre colored midline. Staminode cuneate dilatate, as in *Cypripedium Loweii*, forcipate at the apex, with a very small median apiculus, light red, with a dark green median tessellation. Dimensions of *Cypripedium Loweii*.

The lover of Orchid hybrids and the *Cypripedists* will receive this novelty with delight. *H. G. Rehb. f.*

CYPRIPEDIUM POLYSTIGMATICUM × (*VENUSTUM SPICERIANUM*), *hyb. Angl. Measures.*

Mr. R. Measures, of The Woodlands, Streatham, begins now to reap the fruits of his *cypripedic* efforts. Fresh hybrids are now growing in his houses. This one has leaves of the shape of those of *Cypripedium venustum*, lightest green—some with broken transverse stripes. The strong peduncle may become two-flowered. There is a prolongation of the axis next to the flowers. As it is broken off at the top I cannot ascertain more. The peduncle is brownish-red, with short hairs. The wide acute bract is open in a cup-like manner, green, with blackish-red stripes and lines of spots. It is nearly equal to one-third of the length of the ovary, which is very short, hairy, and of a much lighter colour than the peduncle. The dorsal sepal reminds me of *Cypripedium Spicerianum*, both by the shape and by the margins revolute from the middle to the base. The nerves are broad with ramifications of purple. They end in front of a white apicular part. The inferior sepal is narrower, oblong apiculate, white, with a lightish ochre hue. Lines of brownish purple spots run over it, chiefly outside. Petals divaricate, ligulate, acute, revolved in the middle, green at the base, light reddish-brown from the superior mid to apex. A dark brownish-purple line runs over the centre vein. Similar spots occur under it, and numerous small blackish spots stand on the basilar green area. The large lip has strong lateral horns, and an almost rectilinear border round the mouth. The colour is light brownish-purple, with an ochre shade on the inferior median area. The staminode is quite transverse elliptic. It has a median, very obscure tooth in the middle of the front side, and a thicker and very short one on each side. The colour is light purple, with some green areoles in the centre.

There can be no doubt about the descent from *Cypripedium Spicerianum*. The leaf speaks of *Cypripedium venustum* or of one of its allies by the dark transverse bars. I cannot, however, account for those little blackish spots on the green base of the petals, which are suggestive of *Cypripedium hirsutissimum*. *H. G. Rehb. f.*

CYPRIPEDIUM VARIOPICIMUM × (*LAURENCIANUM SPICERIANUM*), *n. hyb., Angl., Measures.*

This mule was raised by Mr. R. Measures, of The Woodlands, Streatham. It is a very effective novelty. The parentage is the same as that of *Cypripedium radiosum* ×, *Rehb. f.*, Sept., 1883—*sed quantum dis-*

tabat ab illo! It is quite distinct in colour, having the petals of *C. polystigmaticum*, those of *C. radiosum* are green, washed on the borders with sepia. The lip is reddish-purple and ochre, while it is sepia-brown with a greenish border round the mouth in *C. radiosum*. The staminode is mauve with a white border in this plant, purple with a white centre and some green dendritic markings in the middle in *C. variopictum*. If an amateur ordered the one and obtained the other he might—and duly so—get exceedingly cross.

The leaves are shaped like those of *Cypripedium venustum*, in colour green with darker, often flexuose, margin. Peduncle thin, very long, dark purplish-brown. Bracts ancipitous, ligulate-acute, green, with blackish-purple lines and spots; it is altogether much shorter than the reddish-brown ovary. Dorsal sepal elliptic-acute, whitish-green at the base, with radiating veins. Lateral sepals shorter than the lip, whitish-ochre, very pale, with brown veins. Petals deflexed, ligulate-acute, with dark purple mid-line, superior yellowish, partly covered with dark spots; anterior part brownish-purple, superior margin very hairy. Lip light ochre, purple outside. Staminode transverse elliptical, the front having large lateral teeth, with minute central apiculus. The centre is white, with green dendritic marks; sides purple. *H. G. Rehb. f.*

CYPRIPEDIUM SAVAGEANUM, n. hyb.

A plant of this exceedingly pretty and compact-growing variety, the result of crossing *Cypripedium Harrisianum* with *C. Spicerianum*, is now in bloom at Messrs. Seeger & Tropp's nursery, Lordship Lane, S.E. The foliage is veined, as in *C. Harrisianum*, but the leaves are much shorter and the veining closer. The dorsal sepal of the flower is in form much as in *C. Harrisianum*, one-third of the outer surface being snow-white, within which is a rose-coloured area, the base being emerald-green, the dark line running up the centre is as in *C. Spicerianum*. The petals and pouch are in form near to those organs in *C. Spicerianum*, the petals tinged with rose and having a dark and well defined line up the middle of each. It is a charming flower, and is named in honour of the grower of Mr. Kimball's noted collection at New York. The opposite cross resulted in *C. Seegerianum*, in which, in the resemblance to the parents the features are the opposite to *C. Savageanum*. *J. O'B.*

CROCOSMA AUREA VAR. MACULATA, Baker.

This is a fine variety of *Crococoma aurea*, Planchon (*Tritonia aurea*, Pappe.), which for garden purposes is well worth distinguishing from the original type as figured *Bot. Mag.*, t. 4335. The bright orange-yellow oblanceolate-unguiculate perianth-segments are above 1 inch long, so that the deflexed expanded limb is 2½ inches in diameter, and the three inner segments have a blotch of red-brown at the top of the concave claw. The stamens and style are as long as the segments of the perianth. We are indebted for a fine living specimen to Mr. James O'Brien, of Harrow-on-the-Hill. He is not certain as to the exact locality where it was found wild, but thinks it is inland from Algoa Bay. The species has a wide range, as it has been gathered during the last few years on the mountains of East Tropical Africa within 6° of the equator. The Mozambique, *Crococanthus mossambicensis* of Klotzsch, is a mere form of the same species. *J. G. Baker.*

THE BULB GARDEN.

FREESIAS FROM SEED.

THESE lovely Cape flowers deserve to be grown more extensively than they are. Hitherto the high prices of bulbs have been a great drawback; but at the present time they are within the reach of every one, and can be bought for 1s. per-dozen, and much cheaper in larger quantities. About four years ago a friend of mine bought 500, for which he paid £7 10s. A pint measure would have held

the whole of the bulbs. They may be had in bloom from bulbs, and bud nearly the whole year round. Few flowers are more accommodating to the skill and attention of the cultivator, nor are they particular as regards soil—only moderately good free soil will suit them. Bulbs planted in August will, if kept in a warm house, give flowers for Christmas, and a succession of planting will give a succession of blooming. Plants from seed sown in March will bloom the following autumn. I have a bed now in bloom, the seeds of which were sown in the open ground, just as I should have sown Radish seed, the first week in April. They have had no more care than a bed of hardy annuals, not a sheet of glass, nor even a drop of water from the watering can. They have not been moved from the seed-bed. I pulled up one of the blooming plants to examine the bulb, when I found that it was not larger than a Radish seed, but there was a long tap-root. The bulbs increase very rapidly, not only round the base of the parent bulb, but from two or three joints of the blooming stem; they are also good seed bearers. *J. C. Tomkin, Isles of Scilly.*

A MYCOLOGICAL EXCURSION IN SWEDEN.

THE desire to visit Sweden, the country of the illustrious Fries, is common to all mycologists whose enthusiasm in the pursuit of their favourite study is sufficient to render them worthy of the name. It has been the privilege of the writer during the present autumn to accomplish this wish. As most British mycologists are readers of the *Gardeners' Chronicle* a short account of the excursion will probably be of interest. My object in visiting Sweden was, not so much to find new or rare species of the Hymenomycetes as to clear up, if possible, certain difficulties which for many years past have troubled me with regard to several of the commoner species. These difficulties have increased rather than diminished during the past twenty years, in spite of frequent communications with almost all, if not all, our leading mycologists, either personally or by letter, and of visiting every year one or more of our annual fungus forays. I wish to speak for no one but myself; others who have entered upon the study more recently may have been much more successful—to them the Cortinarii present no difficulties, the Russulæ are simple, and the Lactarii abundantly distinct.

With this object in view I sought to find some mycologist in Sweden who had been personally acquainted with the views of Fries, who had botanised with him, and who knew from actual contact with him his opinions of the species as they occurred in the field. For this purpose no one was, I knew, more able to render me help than his son, Dr. Robert Fries, of Gottenburg, who had not only for many years worked in the field with his father, but who also had been his coadjutor in the *Hymenomycetes Europei* and in the *Icones Selectæ Hymenomycetum*. In Dr. Fries I may at once say I found one not only able, but willing, to help. Arriving at Gottenburg on a Monday evening, having secured a good room at the hotel with plenty of light and abundance of table-room I was ready for business. The Swedes are early people, so a preliminary run round the Botanic Garden before breakfast next morning was made; this gave evidence that fungi were to be found, *A. cristatus* and *A. carneus* being abundant on the lawns. Later in the morning Slottsskogen near Gottenburg, a sort of half park, half garden. It was too late in the year for most of the flowering plants, but *Hieracium umbellatum* and *Silene rupestris* were in full blossom. The rocks were covered with lichens, among which *Umbilicaria pustulata* was very conspicuous. Of fungi, *A. fastigiatus*, *Russula integra*, *fellea*, *Lactarius cisticarius*, and *Marasmius scorodonius* were gathered. A large bush of *Ribes aureum* was literally covered with *Cronartium ribicola*, one of the *Uredinæ* which has not yet crossed the silver streak, although it is abundantly common on

the Continent. Later in the day an excursion was made with Dr. Fries to the Pine forest at Floda. Here mycological treasures came in thick and fast. *Agaricus porphyrius*, *inamænus*, *rosellus*, *zephirus*, *acervatus*, *astragalinus*, *picreus*, *decorus*, *acerosus*, *Cortinarius traganus*, *limonius*, *malicorius*, *cinnamomeus* and its variety *semi-sanguineus*, *cinnabarinus*, *sanguineus*, *gentilis*, *malachius*, *Hygrophorus caprinus*, *agathosmus*; *Russula integra*, *Polyporus borealis*, *pinicola*, *Hydnum cyathiforme*, *Rhizopogon luteolus*, and *Helvella infula*!

Of all these, perhaps, the one which interested me most was *Russula integra*, for I was able to learn the views of Elias Fries with regard to this species. In response to my queries respecting it, Dr. Fries replied, "My father said with regard to *integra*, that—" No, my courage fails me; I dare not say what Dr. Fries told me, for some of our English mycologists may have preconceived notions as to what *R. integra* ought to be, and would handle me as roughly as they did last year over *Agaricus russula* and *Hygrophorus erubescens*. For my own part, I should not mind this, but I should not like to see the name of the illustrious Fries dragged through the dirt. At Floda were growing *Calla palustris*, *Goodyera repens*, and *Monotropa hypopitys*, all of them in flower. We also found *Clavaria apiculata* on a Fir stump—a fungus which must surely be British. Such a number of species took most of the next day to examine and sketch, but in the afternoon time was found to visit Rja Skog. Here *A. campanulatus*, *asprellus*, *vittilis*, *escharodes*, and *euchrous* were found. I was taken to an Oak tree, the habitat of *Trametes serpens*. Only one specimen was visible, and that just out of reach. However, it was secured by the assistance of Master Harrold Fries, who, by an acrobatic manoeuvre, succeeded in prising it off with a knife while he stood upon my shoulders. On the following day I took train alone to Jonseder. This little station stands on the margin of a fine lake (Sjon Aspen) surrounded by a forest of Pines. For five hours I wandered in absolute solitude as far as humanity was concerned. A small stream falling into the lake led me through the Pine forest to a charming little lake with Water Lilies upon it—Råfsjon (the Fox's Lake). The forest, with its undergrowth of *Vaccinium vitis idæa*, and *Myrtillus*, mixed with stunted Juniper and Empetrum, recalled at every turn our own Rothiemurchus, while a large heap of sawdust, with *Lindbladia effusa*, and its accompanying *Stilbum*, served only to heighten the similarity. It was only when here and there a patch of *Cornus suecica*, with its scarlet berries intervened, that one realised the fact of being in Sweden, and not in Scotland. An overflowing vasculum was the result of the morning's walk. The species gathered (which were afterwards examined by Dr. Fries) included *Agaricus flavo-brunneus*, *vaccinus*, *imbricatus*, *strobilinus*, *pterigenus*, *dryophyllus calamistratus*, *Cortinarius anfractus*, *malachius*, *paleaceus*, *helvulus*, *brunneus*, *anomalus*, *bolaris*, *pholidus*, *limoneus*; *Lactarius ruber*, *avidus*; *Marasmius perforans*, *Polyporus nigricans*, and *radiatus*.

The next day an excursion was made to Torp, where I was highly gratified by making the acquaintance of the true Friesian *Cortinarius triumphans*, a fungus which has often been discussed at Hereford. Of equal interest was it to gather *Lactarius helvus*, which is common enough with us in England, and probably in Scotland, although we have mistaken it for an allied species. *Agaricus pessundatus* also was found, which naturally led to a long conversation on the relative merits of *A. imbricatus*, *flavo-brunneus*, *albo-brunneus*, *vaccinus*, and *ustalis*. *A. sindonium*, *eutheles*, *columbetta*, and *albus*, were also found, as well as *Cortinarius varicolor*, *evernius*, *armeniacus*, and *Boletus cyanescens*. On the following day Floda was again visited, when *Agaricus icterinus* was found growing abundantly in a Potato field. *A. caperatus*, *inopis*, *flammanus*, that "noble species," *A. depilatus*, and magnificent specimens of the exquisite *A. decorus* were gathered.

Of course, during our rambles that mystic trio, *Lactarius quietus*, *subulcis*, and *seridus*, were men-

tioned, and I was glad to get the views of Dr. Fries on them; but what the views of his illustrious father were upon these three species I dare not say. Lastly, I had the opportunity of submitting to Dr. Fries a specimen of *Agaricus lacrymabundus*, which appears in our flora under another name. What that name is, I must leave my mycological brethren to find out. I dare not tell them, lest Dr. Fries and I should be subjected to a worse flagellation than I received last year over the green gills of *Russula delicata*. Personally I could bear even this, for I am not above learning from Teuton or Gaul, Scot or Swede, Dane or Dutchman, but I do not wish to subject any one else to the vials of wrath of those who try to stem the onward march of truth. Charles B. Plowright.

A NEW PALM.

ON April 19, 1886, in company with Mr. C. E. Faxon, Mr. A. H. Curtiss, and Lieut. Hubbard, of the United States Navy, I landed from the Light-house tender *Laurel* near the eastern end of Elliot's Key, one of the larger of the Florida Reef Keys, at the house and Pine-apple plantation of Mr. Henry Filer.

Our attention was at once directed to a solitary plant of a small pinnate-leaved Palm, left standing in the clearing, which, at first sight, was mistaken for an *Oreodoxa*, but the large orange-scarlet fruit at once showed that we had stumbled upon a tree unknown before in the North American flora, and quite unlike any of the species of Palms known to us. Specimens of the fruit, which was not, unfortunately, fully ripe, were sent to Dr. Wendland, of Hanover, who provisionally pronounced our Palm to be the representative of a new genus, for which he proposed the name of *Pseudophoenix*. A short account of this discovery, with the announcement of Dr. Wendland's new genus, but without characters, was published in the issue of the *Botanical Gazette* for November, 1886, but it was not until a year later that I received through Mr. Curtiss ripe seed of the *Pseudophoenix*, which was sent to Dr. Wendland, who has drawn up from it generic characters.*

Pseudophoenix Sargentii is a slender, low tree, 20–25 feet high, with a trunk 10–12 inches in diameter, and abruptly pinnate leaves 4 or 5 feet long, the pinnae lanceolate-acuminate, 12–16 inches long, bright green above and glaucous on the lower surface. The branching spadix appears from among the leaves; it is (in the only specimen seen by me) 36 inches long by 30 inches broad, the main and secondary branches light yellow-green, flattened, and the latter thickened at the base, especially on the upper side, into an ear-like process. The three-lobed fruit, often one or two-lobed by abortion, is a half to three-quarters of an inch in diameter, bright orange-scarlet, and very showy. Only the withered remnants of the flowers have been collected.

A few individuals were discovered scattered through the woods in the neighbourhood of Mr. Filer's plantation, and late in the year a grove of them was discovered near the east end of Long's Key by a gentleman from Bay Biscayne, whose name I cannot recall. There were about 200 plants, large and small, in this grove, at the time of our visit to Long's Key in the spring of 1887. These are the only stations where *Pseudophoenix* is now known, but as the flora of the Florida Reefs Key is Bahaman in its constitution, and probably in its origin, it would be a singular fact if this tree was not found in the

* *Pseudophoenix*, nov. gen., Herm. Wendl.—Gaussia affinis. Fructus stipitatus drupaceus cerasiformis aurantiacus, e capsulis 1–3 globosis, stigmatum residuis bisilaribus vel in fructibus lobatis lateralibus vel centralibus, epicarpio coriaceo, mesocarpio grumoso, endocarpio tenuiter vitreo-crustaceo. Semen liberum subglobosum erectum, hilo basilari, raphe ascendente utrinque ramis, 2–3 manifestis curvatis, albumine æquabili; embryo basilari. Fl. fem. in fructu; calyx parvus pateriformis leviter 3-denticulatus. Petala 3 ovata obtusa, viridia refracta. Stamina 6, manifeste apice atropurpurea. — Palma mediocris, erecta, foliis pinnatisectis, segmentis duriusculis ima basi valde replicatis. Species 1, P. Sargentii. Herm. Wendl. Elliott's Key, Florida.

Bahama group, the plants of which are still very imperfectly known. C. S. S., in "Garden and Forest." [The Palm here alluded to was named in honour of Prof. Sargent, the Director of the Arnold Arboretum, Brooklyn, Mass., and Editor of the excellent publication whence our article was taken. Our illustration (fig. 56), was copied from a photograph in the Museum at Kew. Ed.]

NOTES ON HARDY PLANTS.

AMONG the first of these to cross the memory is that charming alpine, *Arnebia echinoides*, which year by year demonstrates its wonderful profuse blooming propensities. On September 26 it was as finely in flower as one is wont to see it in springtime; and to be able to remark this of so valuable a plant, can only make it still more valuable. It is also worthy of note that its flowering so late is not a mere accident, or occasioned in any way by the remarkable season through which we have passed, for I well remember that when I first made the acquaintance of this gem (nearly nine years ago), it was in full flower in the end of September. There are few plants among the whole army of hardy subjects around which so much interest is centred as in this; while from a decorative point of view it is quite unique. The flowers on first expanding are of a clear canary-yellow, having fine dark spots on each flower; these gradually deepen in colour till nearly black, when a change takes place and the flowers assume a pale straw colour, the spots disappearing at the same time. It is a plant that can safely be recommended to all by reason of its sterling worth, for anyone may grow it perfectly in a rich light fibrous loam, and it is perfectly hardy. When full grown and established it is not more than 18 inches high, consequently is well suited for the rockery or the front row in the border among good things. Its methods of propagation are by division, by seeds, and by root cutting. The first named is best carried out in early spring, and the last in winter-time, when the plants are the least active, detaching the thicker portions of roots, and cutting into lengths of 1 inch or more and placing in gentle heat. Seeds are produced rather sparsely in some seasons, but in others a fair crop may be secured; in either case sow as soon as ripe in very sandy soil. Small groups of this have a marvellous effect when in flower, and I cannot too strongly urge all who have it to endeavour to increase it by all means in their power. It is destined to become one of the most popular of hardy plants, and when sufficiently plentiful, will make a grand plant for spring bedding. Since its introduction the demand has more than equalled the supply, for its cultivation and propagation were not so readily understood as now, so that we may soon expect to hear of it in abundance (see our figure, vol. xxi., 1879, p. 689).

Hellebores.—A seasonable reminder with respect to those of the niger section may prove of service. The majority of hardy plants are usually transplanted directly after flowering, and experience has proved this a very satisfactory course to pursue. With the *Hellebores* or Christmas Roses it is not so; particularly is this the case on certain soils—e.g., light sandy or gravelly soils. If any one having plants of these will take the trouble to examine them just now, they will find quantities of large fleshy roots emerging from the base of the newly formed crowns; therefore I consider that if the planting is done just prior to those roots being emitted, you are going a long way towards giving your plant a fair start: and a good start with many things besides *Hellebores* is the secret of success. This season, consequent, doubtless, on the great rainfall which has been so generally felt, this basal root-action is much earlier than usual; and I was surprised to find a few days ago in the varieties major and maximus, new roots fully 8 inches long; last year at the same date the new roots were just issuing from the crowns, thus illustrating the necessity of earlier planting in seasons like the present. Where large clumps exist, and it is desired to increase the stock,

and retain all flowers possible at the same time, I would advise transplanting a portion of the stock annually, early or late in September, according to the season, till a sufficient quantity was procured.

Lilies.—For the great majority of Lilies the present season will be found excellent for making fresh plantings; those of the candidum section should have been planted some weeks ago, but for those even of this section that have been dried for importation it is not too late, though to delay it will not improve matters. All those which belong to the longiflorum, tigrinum, speciosum, pardalinum, auratum, and such groups, could not be

ginale, and the crimson-banded rubro-vittatum; all these are grand, and when established have no equals among the many gems of which this gorgeous genus is composed; particularly fine have been the spotless forms of virginale and the gaily-coloured rubro-vittatum this season, while of platyphyllum it may be said that we have no nobler or grander Lily extant. *J.*

THE GENUS PRIMULA.

A FEW seasonable cultural remarks may be useful at this time, when the old collection requires overhauling, and a few repotting, before the cold weather

not very successful in cultivating these Primulas, especially some of the smaller species, natives of the European Alps. They do fairly well for a few years after being imported, but gradually degenerate, and in time fail to flower, when they are not worth looking after.

I have tried various compounds of soil in which to grow the whole of the Alpine and Himalaya species of Primula, and find that loam with a little leaf-mould and decayed manure is not sufficiently open; it does very well for a time, but by-and-bye the mass hardens, and the finer hair-like roots perish. I add to the loam about a third part of



FIG. 56.—PSEUDOPHOENIX SARGENTI: A NEW PALM FROM FLORIDA. (SEE P. 408.)

taken in hand at a better time, and among these may be included Szovitzianum, chalconicum pyrenaicum, and many more. For such as Harrisii the best results are obtained when pot-culture is resorted to, and the plants afforded the protection of a house or warm frame or pit. Few plants, perhaps, more quickly resent the use of crude manures than Liliiums, and they should never be used; when manure is used at all let it be thoroughly decomposed; in this state the varieties of *L. speciosum* and longiflorum are benefited by its use; pardalinum, californicum, and superbum, delight in moist sandy peat—in fact, these will endure a considerable amount of moisture at the root, and revel in full sunlight overhead. A light very sandy loam, or loam and peat in equal parts, seems to suit the varieties of auratum, such as platyphyllum, vir-

sets in. I seldom have time to do much to our plants from the time the largest proportion of them go out of bloom in April and May. At that time the plants are placed in a partially shaded position out-of-doors; and they do not require very much attention through the summer months. All that they get is to supply them with water when it is required, and to keep the pots free from weeds. Their natural requirements suggest a free exposure to light and air; ours have sufficient air, as we leave the plants fully exposed out-of-doors up to the beginning of November, when they are placed in glass frames, and they get all the light possible without exposing them to the direct rays of the sun. Even now, when the plants are being repotted, they are again placed in the same position out-of-doors. Many persons are

brown fibrous peat and this is quite sufficient to keep the compost open for twelve months. Broken pieces of limestone rock are excellent for the smaller-growing European species. In some instances, the small species, such as *P. Allionii*, *P. minima*, *P. Muretiana*, &c., do well planted close to a piece of rock projecting from the surface of the soil in the pot or pan in which the plants are placed. A single plant of any of these is too small to occupy a pot by itself. A dozen plants might be put out in a 4 or 5-inch pot.

I find the *Auricula aphid* attacks nearly the whole of the Primula family; and the smaller alpine species seem to be held in special favour by these troublesome parasites, which cluster thickly amongst the small fibrous roots close to the surface; and it really

does more mischief to the plants to try to wash it off the roots, than the insect itself does if it is left alone. Some varieties of the *Auricula* are attacked by green-fly; others by the red-spider; both can be destroyed by dipping the leaves in a solution of tobacco-water and soft-soap. Use 2 oz. of soft-soap to a gallon of rain-water, and add to each gallon a wineglassful of tobacco liquor.

We have these *Primulas* in flower all the year round now; as some of them flower very early in the year, and others later through the spring and summer months. I fancy there is a great field for the hybridist in the genus *Primula*, and even if no pains are taken to hybridise the seedlings raised from certain species and sub-species they vary considerably from the parent stock; and, further, it is absolutely necessary that seedlings should be raised from some of the species at least biennially; as not only do young plants produce the strongest flower-spikes, but in some cases the old plants have a tendency to die out altogether. The following are a few of the best species and varieties to cultivate to produce a succession of bloom.

Primula villosa is one of the oldest cultivated species; and many improved forms of it are in cultivation, which have been produced by natural selection. The true alpine plant was figured in the first volume of the *Botanical Magazine*, t. 14; but previous to this (1787), the white form of it, *P. villosa nivea*, had been cultivated in this country. A specimen of it was obtained and figured later, t. 1161. Even at that time it was grown under the name of *P. nivalis*; but Dr. Sims, the then Editor, pointed out that the plant figured was merely a variety of *P. villosa*, and that the *P. nivalis* of Pallas and Willdenow was the *P. longifolia* of Curtis, figured in *Bot. Mag.*, t. 392. This plant had been sent from Paris to Messrs. Grinwood & Co., nurserymen, Kensington, and the Editor says:—"We have found it very liable to be injured by the aphid plant-louse or blighter." Is this the first notice of the *Trama Auriculae*? Something like forty species of *Primula* have been figured in the *Botanical Magazine*, nine of them during the last four or five years. The species *P. villosa* is the most useful of all for garden culture if we except the parents of the show *Auriculas*, *P. auricula* and of the alpine, *P. pubescens*. This last species Mr. Baker informs us was introduced into cultivation 200 years ago, as stated in the report of the *Primula Conference*. This ought to read 300 years ago, as we read further on that, "about 1582 Clusius sent from Vienna, to his friend Van der Dilt, specimens of *P. auricula* and *P. pubescens*."

P. marginata is another species which has been in cultivation in England for more than a century. I obtained from Messrs. Backhouse, of York, many years ago, two distinct forms of it, named *P. marginata grandiflora* and *P. m. cœrulea*. They are both distinct, and superior to that grown usually as *P. marginata*. It was named by Curtis, and figured in the *Bot. Mag.*, t. 191, and it is stated that it was "received from the Alps in 1781, and has continued in our gardens since unaltered by culture." This it probably would do if no seedlings were raised from it; but I find the seedlings vary considerably, especially in the form of the leaves and density of the marginal farina. It is an easily cultivated species; small plants soon grow into handsome specimens. It does well out-of-doors, on the rock garden, or as a pot plant. The large masses of it in Messrs. Backhouse's rock garden at York have a striking effect when in flower.

Interesting garden plants, too, are the forms of the ordinary garden *Auricula*, found wild in the mountainous districts of Southern Europe. The original plant, pure and simple, has mealed foliage and small trusses of yellow flowers, with a small mealed centre. The variety *Balbisii* is a neater plant, with brighter coloured flowers, but it is not so free in growth. *P. Obristii* (Stein) is just another form of *P. Auricula*. There is also a pretty little variety of it we have grown for some years under the name of *marginata*. *P. Allionii* of the Mari-

time Alps is one of the most desirable of the small growing species; its flowers are large for the size of the plants. *P. spectabilis* is a useful species, both for growing in pots and planting out in the rock garden; it grows very vigorously, and forms a handsome tuft. The little *P. minima* we always grow, and it sometimes produces its pretty rosy-tinted flowers on the smallest possible plants.

We grow all we can obtain of the Indian *Primulas*. They seem to differ very much more in habit and constitution from each other than the European species do. This may be observed even in the matter of roots. The hardy free-growing *P. rosea* has quite a mass of fibrous roots clustering round the base of the crown, with scarcely any root-stock; while *P. capitata* sends down a Carrot-like root, with a few lateral fibres diverging from it.

One of the earliest introduced Indian *Primulas* is *P. denticulata*. It was first described by Sir James Smith in *Exotic Botany*. It is also figured in the *Botanical Magazine*, from a specimen flowered by Mr. Veitch in March, 1842. The *Primulas* grown as cashmiriana and pulcherrima are merely varieties of this. It grows well in pots, and establishes itself freely in partially shaded places out-of-doors. Sometimes it is grown under the name of *P. purpurea*, but this is a different plant altogether, and is a variety of *P. Stuartii*; we have it in cultivation, but the plant, though a strong one, has not yet made any attempt to flower. The true *purpurea* of Royle has flowered with the Rev. C. Wolley Dod at Malpas, and was figured in the *Garden*. *P. Stuartii* I have not seen, but the foliage resembles Royle's plant as it is figured in the *Botanical Magazine*; the colour is primrose, and the flowers well formed. Royle found *Stuartii* also at an elevation of 9000 feet, and says it gave a rich yellow glow to those regions. It flowered in the Edinburgh Botanic Gardens in the summer of 1847.

P. rosea is one of the most desirable of the Indian *Primulas* to cultivate; it grows anywhere, but likes to have the roots always wet. This species might soon be greatly improved by selecting only the very best varieties to save seeds from. It can hold its own with the grass and weeds at the edge of a pond, and is the best *Primula* of this type for semi-wild places. The *Auricula aphid* is a pest to it in pots, but when aphid-infested plants have been put out-of-doors the insect disappears. The lovely deep rose flowers are charming in early spring. *P. prolifera*, with a spike of yellow flowers like *P. japonica*, is not worth growing, except by those who want a complete collection. The best of the recent Indian species are *P. obtusifolia*, with a deep claret-coloured flowers and a yellow eye; *P. Reidii*, with ivory-white flowers. The first-named is a vigorous growing plant, and will, I fancy, succeed as well out-of-doors as *P. denticulata*; it is very correctly figured in the *Botanical Magazine*, t. 6956. It is there stated that a dried specimen in the Kew Herbarium has yellow flowers. This was collected by Dr. Watt, and he also in a manuscript note, gives yellow as the colour of the flower. Royle represents it with a long corolla tube, and the colour of the flowers lilac. Our plants were raised from seeds sent by Dr. King, and have all deep claret or rich purple flowers. *P. Reidii* is quite a distinct and peculiar species. The seeds are very small indeed, the young plants are also remarkably small and move very slowly at first, nor does it seem as if it would make a large plant. I will try both this and *P. obtusifolia* planted out. Mr. Duthie discovered the plant in 1884 on wet rocks in the Ralam valley of the Western Himalayas, near the glacier, at an elevation of 12,000 to 13,000 feet. *P. japonica* should be grown everywhere in the wild garden. A large mass of it in the wood at Kew was a striking sight in its season of bloom.

The vigorous growing *P. sikkimensis* seems to do well out-of-doors, and is distinct and very beautiful; its drooping primrose flowers are very sweet. *Primula Parryi*, a Rocky Mountain species, I cannot praise very highly. I have large plants of it growing in the open garden and in pots, but none of them have

produced trusses anything like the figure in *Bot. Mag.*, t. 6185. It is certainly a very distinct species, but as it does not flower until the end of May, or, as it did this year, in June, it has to compete as a decorative subject with more showy plants. It seems to grow near the snow line of the Colorado district, and flowers in July so plentifully that "it gives the name of Primrose Creek to one of the affluents of the Colorado River." It does well out-of-doors in heavy soil on the edge of a small pond. *Jas. Douglas*.

ORCHID NOTES AND GLEANINGS.

ORCHIDS AT ALLERTON BEECHES.

Quite recently an opportunity afforded me the pleasure of paying a visit to the garden owned by H. Tate, Esq., an enthusiastic horticulturist, which is situated in Allerton, a delightful suburb of Liverpool. The principal feature of the establishment is the collection of Orchids, which the owner is fast increasing to a rich and extensive one. All were in the best possible condition, and do great credit to Mr. Edwards, the gardener. Just now interest centres in the beautiful *Cattleya Hardyana*, a supposed natural hybrid, supposed to have sprung from *C. aurea* and *C. gigas*. I had an opportunity of comparing a flower from the original plant belonging to G. Hardy, Esq., of Pickering Lodge, Timperley, a figure of which is given in Williams' *Orchid Album*, vol. v., plate 231, and of the two the former is an improvement in regard to size of the flower and the depth of its colour. The plant in question was purchased with others as *C. aurea* from Mr. Sander, St. Albans, and judging from other plants that are pushing flowers through their sheaths, it appears probable that Mr. Tate will be the fortunate possessor of more than one example of this fine species of *Cattleya*. In the same house as the above a very fine form of *C. gigas* *Sanderiana* was observed. The *Cattleyas* generally are very vigorous and compact, with numerous sheaths, a good number of which, especially the *Mendelii* section, are as yet unflowered, and, judging from the characteristics observed in pseudobulb and leaf, a rich harvest of blooms in great variety may be expected. A fine plant of *C. Trianae nivea* of Backhouse, and *C. Trianae Victoriae*, are sheathing up well, as also *C. Skinneri alba* and other excellent forms too numerous to be mentioned. Two well-flowered plants of *Lælia Dayana* and a very fine form of *L. elegans* were attractive. Amongst other *Lælias* with bloom or coming forward were well-grown specimens of *Perinii*, *cinnabarina*, *albida*, *autumnalis*. Some fine plants of *L. anceps morada* of the Liverpool Horticultural Company were pushing sturdy spikes. This variety is reputed to be darker in shade than the well known variety, *L. Barkeriana*. *L. anceps alba* is well done by Mr. Edwards, the newly-made pseudobulbs being very fine, and will, in due time, afford a fine display of flowers. Amongst *Odontoglossums* a fine *O. crispum* var. *guttatum* was noticed in flower. Amongst a group of the favourite *O. grande* some very dark forms likewise. *O. Harryanum*, just over, is said to be one of the darkest forms as yet flowered in this country; the plant is in superb condition, as were all the plants grown of this favourite genus. In the warm house a well flowered plant of *Vanda Sanderiana* presented a remarkable sight, and profusely flowered examples of *Oncidium Jonesianum* were observed. The *Phalænopsis* were very striking examples, with some strong spikes pushing up. *Cypripediums* *Ashburtoniae*, *onanantum superbum* (off the original plant from the late Mrs. Morgan's collection), *Harrisianum*, *insigne*, and its var. *violaceum punctatissimum*, with twenty spikes; *villosum* *Spicerianum*, *Sedeni*, and others were in flower. I may add, in conclusion, that Mr. Edwards is busy hybridising, and that most of the crosses effected (which have flowered) denote the employment for this purpose of the finest forms; therefore it is only reasonable to

expect some valuable results in course of time. *F. Ashton.*

PHAIUS BICOLOR.

Flowering, as this species does, from July to October—a time of year when Orchid flowers are least plentiful—and possessing all the good qualities of *P. grandifolius*, both as to easiness in culture and freedom of flowering, it is strange that it does not become more widely cultivated than it is. It was figured in 1844 in the *Botanical Magazine*, and plants have flowered annually at Kew for many years. It is similar to *P. grandifolius* in habit, the leaves being more lanceolate, and of somewhat stiffer texture. The flowers also are similar in character, being produced on long erect spikes, and measuring 4 inches across. In colour, however, they are quite distinct; the sepals and petals are of a bright reddish-brown colour; the side-lobes of the lip are rose-coloured and folded over the column, and the broad front lobe is yellowish-white, flushed with rose.

This Orchid comes from Ceylon, whence it was introduced in 1837; it requires intermediate temperature, and, being terrestrial, should be grown in pots in a compost of fibry loam, leaf-mould, and charcoal. During active growth it may be watered once a week with manure-water, this treatment conducing greatly to strength, both in foliage and flower. Through the winter months it should be kept rather dry at the roots.

LÆLIA PURPURATA.

An important item in the cultivation of *Lælia purpurata* is abundance of light, in order to enable the plant to produce robust and well-matured bulbs, without which it will not flower freely. When the growing season is over, the season of growth of this species commences, and if the plants are not carefully attended to failure will creep in. This is the best time to re-pot should it be required, but do not over-pot, as this is dangerous unless the plants are carefully watered, tending to cause a greater quantity of wet soil to lie about them. The plant should be well elevated above the pot in order to allow the roots to spread. The great secret of success in the management of this species is to induce the plant to produce strong roots outside as well as inside the pot. A slight syringing over the roots in the summer months in the afternoon, just as the house is closed, will be found highly beneficial. Slight shade is necessary during the hottest part of the day, but this should not be allowed to cover them at any time when the sun is not shining; indeed, the plants should be subjected to the influence of the sun's rays at all times when not powerful enough to injure the leaves. Thorough drainage is essential to these plants, and the best potting material is good fibrous peat from which all the fine particles have been well shaken; to this add some living sphagnum moss. *B. S. W., in "Orchid Album," September.*

ODONTOGLOSSUM VEXILLARIUM ROSEUM.

We have frequently pointed out the fact that this species of *Odontoglossum* requires somewhat different treatment from the majority of the other kinds. It is free in growth, but requires to be constantly watched, in order to prevent the thrips gaining a lodgment in the sheathing portion of the leaves, or these insects speedily cause the leaves to become spotted, or turn black, which by no means improves the appearance of the plants. This species will amply repay any extra care bestowed upon it, as the stronger the growths the greater the amount of blossom; and when the plants are vigorous, they not only produce flowers of larger size and deeper colour, but they remain in perfection a greater length of time. Mr. Vincent grows them in a temperature slightly lower than is given to the *Cattleyas*; we grow them on one side of the house in which our *Cattleyas* and other flowering Orchids are arranged. The *Odontoglossums* are placed on one side by themselves, so that as much water as they require can be readily given. These plants should be kept moist at the roots at all seasons, as they require little or no rest, and should never be allowed to get dry; but, as

a matter of course, very much less water is necessary during the dull months of winter. This species requires to be shaded from the strongest sun in summer; but it should be fairly exposed to the light, and, therefore, succeeds best when grown near the glass. Pot cultivation suits it well if the pots are well drained, and the potting material should be good fibrous peat and sphagnum moss. Care must be taken to maintain the soil in perfect order, as we find the plants rapidly melt away if any stagnant material is left about them. The repotting should be done immediately after the flowering season, which will be just as they begin to make new growth, bearing in mind to keep the bulbs well above the soil. "*Orchid Album," September.*

ONCIDIUM INTERMEDIUM

is a distinct and beautiful evergreen plant, compact in growth, producing light green, fleshy leaves, a foot or more in height; the spike is erect, and attains to about 18 inches in length, and bears a much-branched raceme of showy flowers, which are very numerous. The sepals and petals are yellow, distinctly spotted and barred with chestnut-brown. It blooms during the months of May and June, and continues in full beauty for several weeks.

This species requires the heat of the *Cattleya*-house, and thrives best when placed in a position to obtain all the sun and light possible, just giving it sufficient shade to prevent its leaves burning. Treated in this manner it will be found to grow and flower most freely, and doubtless many other *Oncidiums* would thrive better under the same conditions than they do at present, as many species grow naturally in exposed situations.

We find *O. intermedium* thrives well in a basket suspended from the roof, and near the glass; the baskets should be well drained, and the most suitable potting material is a mixture of good peat fibre, living sphagnum moss, and a considerable quantity of nodules of charcoal, in different sizes, mixed with it. This mixture will enable the roots to easily penetrate it, and throw out their tender points to absorb the moisture, with which the atmosphere should be well charged in the growing season. When growth is completed the plants must not be entirely dried, as they have but very small bulbs to support any great drought; but the water supply should be considerably diminished, and the plant kept in just that happy medium which prevents shrivelling, but does not force it into growth prematurely. "*Orchid Album," September.*

BRASSIA KEILIANA TRISTIS.

This *Brassia* will thrive equally well in either pot or basket, and enjoys the temperature of the intermediate house. It grows freely, and blooms profusely if properly attended to during its season of active growth, and accorded a fair season of rest, without being subjected to a too severe drying. The pots should be well drained, and the potting material should be good peat fibre with the addition of some living sphagnum moss. The plant should be well elevated above the rim of the pot, upon a cone-like mound, for, as they enjoy copious waterings during the growing season, this system causes the water to pass away rapidly, and thus stagnation is avoided. If grown in baskets the same material should be used as before recommended, and the basket or baskets suspended from the roof near the glass, in order to afford the plants an abundance of light. They require, however, to be shaded from the hottest sun. These plants grow naturally in somewhat shady places, so that if fully exposed under glass to the sun's influence, the foliage soon becomes yellow and permanently disfigured.

The best time for re-potting, if the plants require it, is just as they begin to start into fresh growth, using every care to avoid injuring the young roots, and any roots which have been covered should not be exposed, as the change often proves injurious. In the resting season much less water will be necessary, but never allow the bulbs to shrivel.

If required, these plants may be increased by

dividing the bulbs at the time of re-potting; one or two old bulbs should be left with each leading shoot, these divisions being put into small pots at first, and they should be kept in a somewhat cool place until established. "*Orchid Album," September.*

PLANT NOTES.

PUYA LANUGINOSA.

A LARGE plant of this is now in flower in the Succulent-house at Kew, and, according to Mr. Baker, this is the first time this species has flowered in cultivation. It has a stout stem and recurved, toothed, silvery-green leaves, suggestive of *P. chilensis*, but smaller. The flower-spike is stout, 1½ inch in diameter and 3 feet high, the topmost foot being clothed with flowers and buds, all literally packed together. The calyx is roundish, about the size of a Hazel-nut, and covered with a dense coat of brown woolly hairs; the corolla is 2 inches long, large, very similar to that of *P. Whytei* both in form and colour, except that the new one is a paler sea-green, exactly the colour of *Ixia viridiflora*. The flowers open a few at a time, and as there are a great many buds the Kew plant will continue in bloom for some time. *P. chilensis* is also in flower in the same house.

TREE TOMATO (CYPHOMANDRA BETACEA).

A fine specimen of this in the Temperate-house at Kew is now bearing a grand crop of egg-like fruits, and in the house where the succulent plants are grown another smaller specimen may be seen with a few ripe fruits upon it. The merits of this plant are recognised in many of our colonies, thanks to the authorities at Kew, who made it the subject of a notice in a number of the *Kew Bulletin* for last year. The fruit is certainly very palatable even when raw, much more so than many Tomatos. To my taste it suggested a combination of Tomato and the fruit of *Passiflora edulis*. If this plant were taken in hand by growers of indoor fruits it would almost certainly prove a really valuable addition to the food plants of England, as it has already proved in the colonies.

ANGOSANTHUS BREVIFLORUS.

This pretty bulbous plant from the Cape may now be seen in flower in the Cape-house at Kew. It is related to *Chlidanthus fragrans* and *Sternbergia*. The bulb is like that of *S. lutea*, leaves strap-shaped, 1 foot long, ¾ inch broad, appearing with the flowers. Scape erect, 9 inches long, stout, bearing an umbel of nine flowers, which are on erect stalks, tubular, 1 inch long, nearly an inch across at the mouth, the segments united at the base; colour bright yellow. This plant ought to become popular as an autumn-flowering greenhouse plant. Apparently it requires the same treatment as *Nerine*. It is a native of Natal, Grahamstown, &c., and is the *Cyrtanthus lutescens* of Mr. Adlam. A figure of it has been prepared for the *Botanical Magazine*. *W. Watson.*

THE APIARY.

SMALL SECTIONS.

By the time this article is before the reader, he will doubtless have covered up his bees for the winter. This does not, or ought not, to mean that therefore work is at an end. It is pleasant during cold winter days and evenings to hear the sound of the hammer and the saw, and the industrious apiarist will no doubt use both. We read in *Gleanings*, which comes to us from America, that a Mr. Harmer, of the United States, has made a small 2 oz. section. These are sold at grocers' shops and sweet-shops in America, and children as well as adults buy them, and eat them as children about here buy sweetmeats. There is this difference only, that honey is the most wholesome. We will endeavour, in our brief space, to explain how it is done.

Take a piece of board larger than the inside of a standard frame, and take another piece which will just go in and out of a standard frame easily. The latter ought to be about three-quarters of an inch thick. Glue these two pieces of wood together, one lying on the other. Then take a saw and cut as many squares as you can, slightly over 1 inch square, in the top piece of wood. Make the saw-cuts quite through the wood, and just to touch the second piece. Then take a jack-plane, set coarse, and get another piece of wood, any size, but $1\frac{1}{2}$ inch thick, and plane off a lot of shavings. These will curl up, of course. Put them in water, and then lay

are filled the sections can be taken out of the frame in a mass, and can easily be separated with a knife. We trust we have made the matter simple, so that he who runs may read. We intend trying it ourselves. Of course eight of them would go to a pound, but to make it pay, eight of these sections ought to fetch more than a single pound. Bee.

LILIUM NEPALENSE.

We give below an illustration (fig. 57)—thanks to the courtesy of Messrs. Low, of Clapton—of a Lily exhibited by them at the meeting of the Royal Horti-

PLANTS AND THEIR CULTURE.

CHRYSANTHEMUM FRUTESCENS.—If a large batch of cuttings is now put in, they would make capital decorative stuff in the later spring months. Select stout close-jointed shoots of about 5 inches long, and if space can be afforded insert them singly in small pots, filled with sandy loam; water to settle the soil, and place them where they can be kept comparatively close for two to three weeks, when they will be rooted. Excellent results may be had with an ordinary garden frame covered at night with mats, and on the approach of severe weather moving the cuttings to



FIG. 57.—LILIUM NEPALENSE: COLOUR DEEP CRIMSON, WITH GREEN TIPS.

them out flat to dry. This forms a lot of veneer. When dry put double slips of veneer in every saw-cut, after the standard frame has been laid over the top piece of wood containing the saw-cuts. Then take little pieces of foundation which will just fill the spaces, and drop one in each square. The next piece of advice given by Mr. Harmer we do not agree with. He says, touch the inside of each square, and the foundation, with a small brush just touched with glue. We do not propose to give Englishmen glue, even in homoeopathic doses, so we would advise the brush being dipped in melted wax instead. When dry, the frame can be lifted up; and if this is done carefully the sections will come up with it. These can be put away for use, and when the happy season arrives can be hung in the hive. When they

cultural Society on September 11 last, and which excited great attention. The plant from which our figure was taken was nearly 4 feet in height. The segments of the flower were greenish outside, internally intense red-crimson, and with light greenish tips. Stamens red, greenish at the base. Mr. Baker, to whom our drawing was submitted, remarks that the segments, as shown, are more recurved than usual, which he attributes to the flower not having been drawn until it had been expanded for some time. [This opinion is not shared by our artist. Ed.] The plant is a native of the Central Himalayas, and requires greenhouse treatment. It is probable that some considerable variation exists, as the figure in Elwes' *Monograph*, and that given in our columns July 17, 1880, do not agree well with the one now figured.

quarters safe from frost. Low pits or houses with the means of keeping a minimum temperature of 45° are good places to winter them, but a shelf near the glass in a greenhouse will also do. The object to be aimed at is to prevent them from getting drawn—which they would very readily do—if far from the glass or with deficient light. To induce a dwarf, stubby habit, they should be pinched back several times during growth, so that when they receive their final potting further stopping would be unnecessary. In potting, use a rich loamy compost, and pot firmly. About the close of the year they will be nice stuff, ready to pot on into 48's and 32's. If it be desired to hasten a few of them, a temperature of 55° to 60° will bring them on; care must, however, be taken not to give warmth greater than that, or they will become drawn and useless. Give plenty of

air whenever it can be admitted with safety, and keep the plants clear of green and black fly and red-spider by means of mild fumigations with tobacco; but, failing this, dip the plants in some of the prepared insecticides.

Thorough syringing when growing is of great assistance in keeping them clean. There are several varieties, but those with small leaves are the freest growers and flowerers. Perhaps the best are the type—*frutescens* and *Halleri maxima*, whites; and *Etoile d'Or* or *Cloth of Gold*, for yellow; all of which are serviceable.

Storing Bulbous Plants.—*Caladiums* are getting over, and may be allowed to ripen off, their space being better occupied with other subjects. In drying off the corms it is a good plan to get the plants closely together in a warm, dry part of the house, and give less water for a short time; this will stop active growth, and when the ripening is nearly completed they may be stored away for the winter in a place with a temperature of about 60°. I have been very successful in keeping these corms healthy by placing the pots beside the hot-water pipes in an intermediate-house; and if at any time they appeared to be too dry, a damping over with a rose pot kept them right. Sometimes when I have shaken them out or have left them in the pots in a cold place I have lost many; therefore it is safer to afford them a warm comfortable corner.

Bougainvilleas.—Whether planted out or grown in pots in the usual way their treatment now will be about the same, namely, the maintenance of a suitable temperature, as without a sufficiency of heat their flowering season is soon over, and, moreover, the flowers are of better colour and substance if a temperature of about 60° is kept up, more or less, according to the conditions of the weather. Therefore, all plants which are intended for autumn and winter flowering should now be placed where these conditions, and as much light as possible, can be afforded them—low houses with a steep roof and a sunny side, are to be preferred, as the plants are near the light and are not liable to become drawn; it is, moreover, a waste of fuel to heat a larger volume of air than is required. Where this kind of house is not available keep the plants well to the front in a light position of the house, where, with the temperature named, and by regular applications of weak liquid manure or slight top-dressings of some concentrated fertiliser, and care in watering, good results may be obtained. Keep the plants completely free from insects before they come into general bloom. Late plants for succession may still potted on, using, as before advised, a rich free compost.

Dichorisandra.—Of these plants several are very showy subjects, some having showy blue flowers, others ornamental foliage, as in the case of *D. musaica*, which has prettily marked leaves produced on stems rarely exceeding a foot in height. A free open soil of peat and loam, in about equal parts, with plenty of sharp sand, is a suitable one in which to grow the last-named species. The plant dislikes excess of water, either at the root or on the foliage, yet it must not be allowed to get very dry, being easily injured by either extreme. A dwarfier and more easily grown but less showy species, is *undata*, which has crumpled or undulated leaves, freely marked with longitudinal stripes, or bands of silvery-grey on a green ground on the upper surface; they are reddish-purple on the under side. It grows quickly, and is easily increased from cuttings, which, if put in now and treated in the usual way, will make nice little plants by early spring. *Musaica* may also be increased by cuttings, but careful division of the roots is the best mode. *D. thyrsoiflora* is a very different plant to the foregoing, being grown for its large trusses of dark blue flowers, which are borne towards the end of the growth of the current year. The plant is a capital grower, succeeding in almost any good loamy compost. It grows about 3 feet high, and it is surprising that so distinct an autumn-flowering plant is so seldom met with. It is just now beginning to flower, and is conspicuous and effective. After flowering, give water and air in the usual way until the growth is ripened; and when it begins to turn yellow and die down the pots may be laid on their sides and stowed away in a corner of the stove till next spring, when they should be brought out and repotted.

D. Aubletii has a slender, trailing habit, and requires support; it grows about 6 feet high, and is valuable as a climber where space is limited; the position need not be a sunny one. It flowers on small axillary branchlets in the late summer and autumn months, and after flowering it should be treated in the way recommended for *thyrsoiflora*.

The plants are best kept always in the stove, and as the growth is more or less annual and herbaceous, to maintain the stock of plants in good condition a vigorous growth should be encouraged. *D. musaica* and *D. undata* look best when grown in pans, but *D. thyrsoiflora* and *D. Aubletii* are finest grown in pots, of a size that will admit of liberal treatment. *F. Ross, Pendell Court.*

THE FLOWER GARDEN.

LAWNS.—The mowing machines should now be thoroughly cleaned, oiled, and put away in a dry place. Levelling and turfing may be done at any time this month; the sooner the better, however, but do not be in a hurry to begin such work on very frosty mornings, but wait till nearly mid-day. In levelling inequalities avoid using rich soil, or the consequences will be a rampant growth and a patchy appearance for the greater part of next year. The soil should be well trodden down as the work proceeds, immediately afterwards relaying the turf; the latter should either be beaten down firmly or rolled several times with a heavy iron roller. Where there are many large trees and deciduous shrubs it will be next to impossible to keep the lawn in good appearance during the next few weeks, nevertheless leaves should be swept up frequently. The same remark apply to drives, walks, and other parts of the pleasure grounds.

Rockeries.—The present month is a very good one for commencing new work, and also for dividing and replanting many species on old rockeries; indeed, the latter operation is a much more important one than some persons suppose and it is not too much to say that some subjects fail or are but partially successful owing to the neglect of frequent division and transplanting. Where past neglect has been great, nothing short of a thorough renovating of the whole should be attempted. In doing this the old soil should be taken out to a depth of 6 inches, and replaced with suitable compost, which may consist of three parts sandy loam, one part leaf-mould, and a liberal addition of peat for plants that require it. It is impossible to enter into details regarding new work in this place, suffice it to say that stiffness in arrangements should be avoided, and due regard paid to the requirements of the various plants, viz., sunny exposed positions for those that need such, and sheltered, shaded, damp, for others; all of which may be secured by the intelligent planter. Surface composts of different kinds are also matters of importance, and ought to be got in readiness before planting takes place.

Dahlias.—Take up the roots of these, and store away in sand or cocoa fibre refuse in some cool place, not forgetting to re-label such as require it, and to examine them at intervals of a few weeks. *J. Horsfield, Heytesbury.*

FRUITS UNDER GLASS.

VINES.—Examine the bunches of Grapes on Vines which have matured their crop for some time, removing mouldy berries before they infect others. Grapes in late houses should have finished colouring by this, but, where such is not the case, keep the pipes steadily warm, and give air freely on all favourable opportunities. A free circulation of dry, warm air is most conducive to the proper ripening of the fruit. Pinch out every lateral growth, to admit sunlight light to the interior of the house. Mid-season Vines, from which all the fruit is now cleared, may have the shoots cut back provisionally to five or six eyes.

The early house should now be pruned, if it is not already done, so as to be ready for starting when the time comes. In pruning, do not go too close to the main stem, but rather select good plump buds, wherever they may be found. Make clean cuts, and be careful not to bruise the spur. When the sap dries up, rub the wound with a dry cloth, and dress with Thomson's styptic. Rub off all the loose bark from the stem with the hand, and well scrub the rods and spurs with warm water, soft-soap, and petroleum, using a stiff bristled spoke-brush for the purpose: as from its shape it can be easily manipulated amongst the spurs. Then the stems may be coated with a mixture of 2 oz. soft-soap, 2 oz. flowers of sulphur, to 1 quart of tobacco-water, thickened with clay to the consistency of paint.

Should mealy Bug have effected a lodgment in the house, more drastic measures must be taken for its extirpation. All the outer bark must be scraped, special pains being bestowed upon the spurs. Every scrap of bark removed should be caught on a sheet and removed to a fire every time the operator leaves his work; and wash the stems, &c., with a hard brush, two or three times with hot water to which a strong dose of petroleum is added. The Vines may then be painted with a mixture of 1 quart of coal-tar, 1 of water, made of the consistency of thick paint by adding yellow clay. When painting the canes stir the pot frequently. All parts of the structure should be scrubbed, and the whole of the interior painted; remove the soil clean away down to the roots, and top-dress with fresh loam, well dusting the roots previously with Thomson's Vine manure. Leave the house open night and day for the present. As soon as tree leaves are available the outside border should be covered with them to the depth of 18 inches, and thatched with Wheat-straw, giving it such a slope as will cast the water entirely off the border. This will impart no artificial warmth, but will retain much of the heat of the border during the winter months.

Young Vines will require a considerable amount of fire-heat to properly ripen the canes, and if such Vines are not already pruned they should be seen to at once and the plants removed from the open into a cool house. Dress all knife wounds with styptic. The structure for these plants should be at once got in readiness, cleaning every part thoroughly; paint the woodwork when necessary. *Wm. M. Baillie, Luton Hoo.*

THE KITCHEN GARDEN.

LATE POTATOS.—These should now be taken up before the ground gets frozen, and dry sunny days should be chosen for the work, digging up the tubers early in the day, and allowing them to get dry before picking them up. Care will be necessary to ensure that no diseased ones are stored with the others. The sets for next season should be sorted out, separate baskets being provided for each size, and should then be spread out in a dry loft or shed where they will be secure from frost. To preserve the flavour of those required for eating they should be stored as airtight as is possible, and secure from frost, but not so dry as to cause shrinking; this is best achieved by placing them in small heaps in a dry situation, and covering them over with straw and earth. A ridge or heap should be 3½ feet high; a good covering of straw drawn straight is placed over them, and the whole is covered with 9 inches of soil beaten down firmly; a handful of straw may be left at intervals of 4 feet along the top of the ridge, projecting through the soil, so that heating of the heap may be prevented. Enough of the tubers should be kept out when storing in this manner for a three or four weeks' supply. Do not open a heap in frosty weather if it can be avoided. I find *Magnum Bonum* is still the best cropper here as a late variety, and it is of first-rate quality. Our soil is naturally dry, and contains a large quantity of lime. *Snowdrop* has cropped well too, this season, and is also excellent, but the tubers are more diseased than the first-named. *Victoria* is almost destroyed with disease—scarcely any tubers that are untouched.

Lettuces which are nearly ready for use, and those for the early winter supply, should be lifted and placed in cold pits. Autumn Cauliflowers will also require attention, breaking some of the larger leaves over the heart, or placing the plants in a dry shed if severe frost be anticipated. French Beans will keep nearly a fortnight in good condition if gathered dry, and spread out in a cool room. *W. H. Divers, Ketton Hall, Stamford.*

FLOWERS AND INSECTS.—An interesting example of mutual connection between flowers and insects we find in the *Ackerund Gartenbau Zeitung*. The colonists in Australia, especially the German ones, brought from home fruit trees, Apples, Pears, &c., but although they flowered well and abundantly, they bore no fruit. Lately another colonist brought bees from Europe, and the fruit trees in his own and his neighbour's orchards fruited well. There was an absence in Australia of the insects necessary to fertilise the fruit trees, these are the bees, which are now much cultivated for the sake of fertilising the flowers, and for honey.

Advertisers are specially requested to note, that, under no circumstances whatever, can any particular position in the paper be guaranteed for advertisements occupying less space than an entire column.

APPOINTMENTS FOR THE ENSUING WEEK.

MEETINGS.

MONDAY,	Oct. 15	National Chrysanthemum Society: Anderton's Hotel, 7 P.M.
TUESDAY,	Oct. 16	Royal Horticultural Society: National Apple and Pear Conference, and Great Show of Fruit, Chiswick, at 3 P.M.
WEDNESDAY,	Oct. 17	Royal Horticultural Society: National Apple and Pear Conference, and Great Show of Fruit, Chiswick, at 1 P.M.
THURSDAY,	Oct. 18	Royal Horticultural Society: National Apple and Pear Conference, and Great Show of Fruit, Chiswick, at 1 P.M.

SALES.

		Bulbs from Holland, at Stevens' Rooms.
		Dutch Bulbs, at Protheroe & Morris' Rooms.
		Clearance, of Nursery Stock, at the various Branch Nurseries, Kingston Hill, Norbiton, and Long Ditton, by order of the Executors of the late Mr. T. Jackson, by Protheroe & Morris (six days.)
MONDAY,	Oct. 15	Nursery Stock, Greenhouse Plants, Greenhouses, &c., at the Bathwick Nurseries, Bath, by Protheroe & Morris (2 days.)
		Bulbs from Holland, at Stevens' Rooms.
WEDNESDAY,	Oct. 17	Plants, Lilies, Bulbs, &c., at Protheroe & Morris' Rooms.
		Choice Orchids in Flower and Bud, and 10,000 Japan Liliun auratum, at Stevens' Rooms.
THURSDAY,	Oct. 18	Dutch Bulbs, at Protheroe & Morris' Rooms.
FRIDAY,	Oct. 19	Imported and Established Orchids, at Protheroe & Morris' Rooms.
		Bulbs from Holland, at Stevens' Rooms.
SATURDAY,	Oct. 20	Dutch Bulbs, at Protheroe & Morris' Rooms.

National Apple and Pear Conference, October 16 to 20.

We gladly give prominence to the arrangements of the meeting and exhibition to be held at Chiswick next week. It is specially fitting that the meeting should be held in the old home of the Royal Horticultural Society, where a representative collection of fruit-trees may be seen, where the circumstances are so favourable for the exhibition of fruit, and where we may hope that the brilliant success achieved in the same gardens, in 1883, may be repeated. Specially appropriate also is the selection of our leading pomologist for the post of Chairman on the first day. His great knowledge, experience, and judgment will prevent much of that mischievous exaggeration and downright misstatements which are so likely to injure a good cause, but which have hitherto not been conspicuous by their absence.

As no direct commercial interests are involved in this Conference we may hope for the best results to fruit culture, and to the Royal Horticultural Society, which has rarely been occupied to better purpose. The following is the programme:—

On Tuesday, 16th, the Council will attend and formally open the Conference at 3 P.M.; on Wednesday, 17th, the chair will be taken by Dr. R. Hogg, and the papers to be read are "The Growth of Apples for Profit," Mr. G. Bunyard; "The Growth of Pears for Profit," Mr. W. Paul; "Stocks for Apples and Pears," Mr. T. F. Rivers; "The Fewest Varieties of Pears necessary to ensure Supplies of Ripe Fruit from August to March," Mr. W. Wildsmith; and "Pruning Apple and Pear Trees," Mr. Shirley Hibberd. On Thursday, Shirley Hibberd, Esq., will preside, and the papers to be read are:—"Canker in Fruit Trees," Messrs. J.

Douglas and E. Tonks; "The Enemies of the Apple and Pear," Mr. J. Fraser; "The Varieties of Apples for Sussex and their Cultivation on Heavy Soils," Mr. J. Cheal; "The Renovation of Old and Formation of New Orchards in the West Midlands," Mr. W. Coleman; "Apples and Pears suitable for Cultivation in Scotland," Mr. M. Dunn; and "The Cultivation of Apples and Pears in Jersey," Mr. C. B. Saunders. T. B. Haywood, Esq., will occupy the chair on Friday. The papers to be read are:—"Compensation for Orchard Planting," Mr. W. E. Bear; "Fruit Production and Distribution from a Provincial Point of View," Mr. E. J. Baillie; and "Railway Charges," Mr. D. Tallerman. The chair will be taken at half-past 1 P.M. each day.

Visitors from the country who propose attending the meetings may be reminded that the Gardens are within five minutes' walk of the Acton Green station on the Metropolitan District Railway, and trains run in half an hour from the City and West End stations every half hour. Visitors from the South will find trains from Clapham Junction to Chiswick Station, which is within a mile of the Gardens. The time occupied on the journey from the City is a little over half an hour.

MANY are the theories that have been promulgated as to the cause of the production of double

flowers, but few indeed have been the practical experiments made with a view either to confirm or confute the assumptions that have been so freely made. But now we find a record in the *Journal of the National Horticultural Society of France* which bears so directly on the point, that we shall be doing our readers a service by calling attention to it. The record is taken from one of the reports of the German agricultural stations—institutions practically unknown here. The report in question bears the name of Dr. NOBBE—a sufficient guarantee of the credit that may be assigned to the experiments.

At the outset the point is clearly raised by the enquiry as to the reason why seeds of herbaceous plants improved by cultivation show a tendency to produce double flowers? Is there any appreciable relation between the nature and condition of the seed and of the flowers which result from their development? In the horticultural department of the experimental station at Tharand an attempt has been made to find an answer to these queries. For this purpose the common Stock was selected, as completing its development in the course of one season. Twelve distinct varieties were selected from the establishment of M. E. BENARY, of Erfurt. Of each of the twelve varieties 100 seeds, as nearly alike as possible, were chosen. These seeds were placed in Dr. NOBBE's germinating apparatus, and submitted to a continuous and uniform temperature of 20° C. (= 68° F.). After four days some of the seedlings (which must have germinated at once) were removed from the apparatus, and placed in the open ground. The other seedlings, which came up after four days and between four and nine days after the commencement of the experiment, were thrown away, so that the seedlings reserved consisted of two classes—one in which the germination had been accomplished within four days, and the other those in which germination was not appreciably commenced till after the ninth day. We need not give in detail the arrangement for the accurate comparison of the two sets of seedlings—suffice it to say that the seedlings were eventually transferred to large pots, and placed side by side half of the pot being occupied by those of slow growth, the second half by the quickly developed

seedlings. Moreover, some of the two sets of seedlings were placed in large, others in small pots; some in sterile sandy soil, others in rich soil, care being always taken to make the experiments rigidly comparable. In all, nearly 600 seedlings were thus under observation. In each case the time of the first appearance of the flower-bud was duly noted, and the period when the first flower opened. From the large mass of statistical details so obtained the general result was arrived at that, for each variety the period of time between the sowing and the appearance of the first flower-bud was long in proportion to the slowness of germination. In some cases an interval of five or six days was noticed between the seedlings of the two categories. The vigour of the plant was uniformly superior in those cases where the germination was rapid, and, moreover, when subjected to analysis the amount of dry matter as distinguished from water was always greater in the quickly than in the slowly developed plants.

But the most remarkable results are those relating to the production of double flowers. In all the varieties the proportion of double flowers was greater in the case of those that germinated quickly than in the case of the laggards. Ten plants of one variety with violet-brown flowers grown rapidly produced all double flowers, while eight plants of the same variety which had germinated slowly produced all single flowers.

The following figures convey other striking illustration of the facts now mentioned. Of one hundred plants belonging to nine different varieties the proportion of double flowers, according to the period occupied in germination, was as follows:—

	Doubles.	Singles.
After rapid germination	82.56	17.44
After slow germination	27.03	72.97

It may be suggested that the superiority might be attributable to the varying influence on the same seeds of light, heat, or moisture; but the experimenters reply that the tendencies exist in the seeds themselves, for the two categories of seedlings were exposed to identically the same conditions, and yet showed the differences already mentioned. Moreover, although those seedlings which were grown on in sterile sand were much less vigorous than those grown in good soil, they, nevertheless, showed corresponding inequality as regards their flowers. Again, next to never was a single flower found in the spikes, bearing from ten to thirty double flowers, and conversely.

Lastly, hybridisation shows that the seeds contain in themselves unaffected by other conditions the essence of what will be manifested in the plant later on. It must be added that there is in each variety a special tendency to produce double or single flowers as the case may be. There are some which, however treated, never yield any but single flowers, while others produce almost, or quite exclusively, double flowers, and are, in consequence, doomed to disappear.

These results are so striking that we cannot but think our great seedsmen will repeat the experiments in due season, and avail themselves of the valuable information thus placed at their disposal. That our horticultural societies will do anything so useful is, we fear, not to be hoped for.

THE ROYAL HORTICULTURAL SOCIETY.—It has been decided to hold a large horticultural show in the Temple Gardens on the Thames Embankment about the end of the month of May next year, the Benchers having kindly given their consent to the Society to make use of the gardens for that purpose.

NATIONAL CHRYSANTHEMUM SOCIETY.—A grand provincial show of this Society will be held at the Corn Exchange, Sheffield, on Friday and Saturday, November 16 and 17. Schedules for this Exhibition have been forwarded to all members. Any further particulars may be had on application to either of the Hon. Secs., Mr. W. K. Woodcock, Hon. Sec., Sheffield Chrysanthemum Society, The Gardens, Oakbrook, Sheffield; or Mr. WILLIAM HOLMES, Hon. Sec., National Chrysanthemum Society, Frampton Park Nurseries, Hackney. A Chrysanthemum Conference will probably be held on the evening of the first day, further particulars of which

inst., and will be continued every Thursday at 8 P.M., by R. J. HARVEY GIBSON, Esq., M.A., F.R.S.Ed. The object of the course will be to give an account of the structure and uses of the various parts of flowering plants, and the principles on which they are artificially cultivated; the origin of cultivated from wild plants, the diseases to which plants are liable, and the means adopted for their prevention and cure.

THE GENUS PRIMULA.—Dr. PAX, of Breslau, the latest monographer of this genus, admits 150 species grouped under sixteen sections distinguished

all the colonies; and agricultural labourers in Canada (in the summer months), New South Wales, Victoria, Queensland, Tasmania, and some districts of New Zealand; while mechanics are only in demand in very few localities, as in Melbourne for those connected with the building trades. Intending emigrants should write to the office, 31, Broadway, Westminster, S.W., as to the arrangements (if any) which are made by Colonial Governments, and in some cases by private committees and individuals in the colonies, for the reception and assistance of emigrants on landing. The committee wish to urge the need of careful selection in the case of emigrants, and of



FIG. 58.—ROCKERY AT PINNER, FROM A PEN-AND-INK SKETCH BY MR. T. WILKINSON. (SEE P. 416.)

will be duly announced. Visitors to Sheffield will be admitted after 3 o'clock on Friday at half-price, on presentation of the return-half of the rail ticket. The Midland Railway will convey exhibits at owner's risk, at single rate for the double journey, provided they remain the property of the exhibitor. A number of cheap excursion trains will be run into Sheffield on Saturday, November 17.—A general meeting of the Society will be held at Anderton's Hotel, Fleet Street, E.C., at 7 P.M., on Monday, the 15th inst., E. SANDERSON, Esq., in the chair.

MECHANICS' INSTITUTE, WOOLTON.—We learn that a course of ten free lectures on "Elementary Botany and the Principles of Gardening," in connection with this Institute, commenced on the 11th

one from another by the margins of the leaves folded inwards or outwards as the case may be, the texture of the leaves, the nature of the inflorescence umbellate or in superposed whorls, the calyx increased after flowering or not, and other characteristics.

EMIGRANTS' INFORMATION OFFICE.—This quarter's circulars, relating to Canada, the Australasian and South African Colonies have just been issued. Queensland grants free passages to female servants and selected unmarried agricultural labourers. Western Australia and Queensland grant assisted passages, and the two former and Natal nominated passages at reduced rates—mainly to female servants and agriculturists. Farmers with capital, and female servants, will find openings in

providing those who go out with money to keep them on arrival.

"BOTANICAL MAGAZINE."—The following plants are figured in the October number of this valuable publication:—

Howea Belmoreana, t. 7018.—A graceful Palm, of medium size (24 feet), with spineless, ringed, slender stem, and a crown of pinnate leaves, each about 6 feet long, with linear-oblong, plicated pinnae. The sessile flowers are borne on cylindrical spikes included within a leathery acuminate spathe. The fruits are olive-shaped, reddish-brown. The species is peculiar to Lord Howe's Islands off the eastern coast of Australia, latitude 32° S., with one or two other endemic genera of the same order.

Rhododendron Colletianum, t. 7019.—An alpine Afghan *Rhododendron*, of which a figure was given in our columns, September 15, 1888, p. 297, fig. 38.

Iris Alberti, t. 7020.—A species from the mountains of Turkestan, where it was found by Dr. ALBERT REGEL. It resembles *I. pallida* in habit, and, says Mr. BAKER, "is interesting botanically because it possesses a rudimentary crest and a fully developed beard down the claw of the outer segments, thus forming a connecting link between the two subgenera, *Pogoniris* and *Evansia*."

Dica racemosa, t. 7021.—A native of the eastern side of Table Mountain, at elevations of from 800 to 2500 feet, and extending thence to Grahamstown. The racemes are erect, four to nine-flowered, rosy-red; the dorsal sepal hooded, lateral sepals flat, ovate, spreading, as long as the hooded sepal; the lip linear. Each flower measures about $1\frac{1}{2}$ inch in diameter.

Asarum macranthum, t. 7022.—A remarkably curious plant, described by Sir JOSEPH HOOKER, and having cordate-ovate, many-ribbed leaves, green above, whitish beneath, with prominent reticulations; petioles elongate, erect, spotted with red. The flowers are borne in dense clusters at the base of the plant, each one about 2 inches across, with a bell-shaped tube and a limb dividing into five oblong-ovate wavy lobes, as long as the tube, and of a pale brown colour, tinged with yellow and purple. It is a native of Formosa, whence it was sent to Kew by Mr. FORD, the Superintendent of the Hong Kong Botanic Garden.

INSECT LIFE.—The United States Department of Agriculture has commenced the publication of periodical Bulletins devoted to the dissemination of information concerning the life-history of those insects in which the agriculturist is more particularly interested. The Bulletins in question are edited by Professor RILEY, the entomologist of the Department, whose name is a guarantee that the work will be carefully and accurately done, and with a special relation to the wants of agriculturists.

FLOWERS FOR THE WORKING CLASSES.—At the recent exhibition of the Van Houtte Club at Ledeberg a Silver-gilt Medal was offered for the best six plants of different kinds specially adapted for the decoration of the houses of the working classes. It was stipulated that the value of the lot should not exceed 3 francs, and that the exhibitor should be in a position to supply within twenty-four hours ten times the number if required to do so. The competition, as we learn from the *Revue de l'Horticulture Belge*, was severe. Mr. GYZELYNCK took the 1st prize, for *Pelargonium Lilliput*, tuberous *Begonia*, *Coleus* var., double *Petunia*, *Fuchsia*, *Dracana congesta discolor*. The 2nd prize went to M. E. VERRAENE, for *Tradescantia multicolor*, *Pouretia mexicana*, *Dracana congesta discolor*, *Aralia japonica*, *Begonia Dregei*, *Apapanthus umbellatus fol. var.*

PLANT COLLECTIONS.—We are wont to regret the turning of private establishments into market gardens, and the substitution of mercenary for other considerations. However much we may regret it we have no right to blame those who deem it right and expedient to come into competition with the market gardeners. But it is curious to see that the same state of things which we lament now existed sixty-five years ago, when we find Messrs. LODDIGES expressing themselves in the following terms in the third volume of their *Botanical Cabinet*:—"For many years have we beheld with the deepest concern these and other causes gradually operating, to the breaking up of the several respectable collections which formerly existed in the vicinity of the metropolis. One by one have they fallen, and new ones have not arisen in their stead. The buildings which, once, filled with rare and splendid plants, delighted and elevated the mind, in not a few instances have been degraded into absolute potageries [*sic*]. The intellectual pleasures which their owners had formerly enjoyed in them were forgotten, and exchanged for

the gratification of gross and corporeal animal cravings. And thus stoves were finally doomed to exist only as gratification and sort of manufactories of such things as early Potatoes, French Beans, small salad, or Mushrooms."

THE CHISWICK SOIREE.—We would remind our readers that the Chiswick Gardeners' Mutual Improvement Association intend to hold a *soirée* on the evening of Wednesday, the 17th inst., at the Chiswick Vestry Hall, for the benefit of the Gardeners' Orphan Fund.

ROYAL HORTICULTURAL SOCIETY OF ABERDEEN.—The acting Directors of this Society met in the office of the Secretary, Mr. A. M. BYRES, Bridge Street, Aberdeen, on Wednesday evening, the 3rd inst., Councillor LYON, President, in the chair. The balance-sheet for the year showed a surplus of over £100, which was considered very satisfactory. The annual meeting of the Society was fixed for to-day (Saturday, 13th inst.), when, among other things, there will be discussed the propriety of holding a spring show.

UVA GRASS (GYNERIUM SACCHAROIDES).—Under the name of "Uva Grass," the large and handsome male flower-spikes of this plant are now offered for sale by Messrs. HOOPER & Co., Covent Garden Market. How they are obtained is not quite clear. Mr. GUMBLETON says he was told they were from the Congo, and the vendors say that they came from India. The plumes are 6 feet or more high, not unlike those of Pampas-grass, but much handsomer. They are, of course, dried, and the flowers are grey-brown. *G. saccharoides* is a gigantic Reed, native of Cumana, in Venezuela, where it is abundant on river banks. It is one of the most beautiful of all tropical grasses, the stems being 12 feet or more long, nearly 1 inch in diameter, the lower part clothed with brown sheaths, the upper bearing graceful arching leaves $1\frac{1}{2}$ yard long and an inch wide; the edges serrate, and the midrib channelled; they are arranged distichously. In habit the plant is not unlike *Arundo Donax*. The panicles are terminal, and about 4 feet of the upper part is clothed with long plumose branches of small flowers, the branches themselves being about $1\frac{1}{2}$ foot long. These measurements are taken from a fine living example of the plant which is growing in the tank with the *Victoria Lily* at Kew, and which flowered some years ago.

POTATO FLOWERS AND TUBERS.—It has been long known that there exists a sort of relation between the production of flowers and the non-development of tubers. KNIGHT removed the young tubers as soon as they appeared, and found that the production of flowers was proportionately increased. M. WOLLNY, as cited in the *Annales Agronomiques*, arrived at similar results. Four plots were allotted to each variety under trial. One of the four was left untouched; in the other three the flowers were removed at three different periods. In the result, the removal of the inflorescence was usually found to increase the weight of produce. Nevertheless, early varieties, and those in which the flowers were not removed till a later period, showed opposite results in the shape of a lighter crop, perhaps because of the short time which elapsed between the removal of the flowers and the formation of tubers, and also by reason of the dryness of the season (July 14—August 25, 1886).

THE WEATHER IN SCOTLAND.—In Aberdeenshire the weather of the past few days has been of a character little short of disastrous, it is to be feared, in its effects on the harvest locally. On Saturday last it became unseasonably cold, with cold driving rain from the north; and, toward the middle of the week, it had assumed an aspect of thorough winteriness, heavy and frequent showers of soft snow falling, with increasingly strong frosts at night, which must destroy all hope of the further maturing of the half-ripened grain. The terrific storm which broke out early on Thursday morning played sad havoc. The wet snowflakes adhered to the grain, and caused the stalks to become top-heavy, with the result that

large patches were flattened to the ground, while in other places the strong wind twisted the corn and rubbed off the grain.

ENGLISH APPLE AND FRUIT-GROWING COMPANY.—We understand that Baron ROTHSCHILD and Mr. MAPLE have taken up shares in this enterprise.

GISHURSTINE.—The manager of Messrs. PRICE'S Patent Candle Company reminds us, by a timely sending of their renowned Gishurstine for waterproofing boots, that the worst season of the year for the gardener is at hand. We can bear testimony to the efficacy of the article in question.

SUTTON'S LATEST OF ALL PEAS.

THE introduction of Walker's perpetual bearing Peas was a great boon to many of us who have to get a large supply of vegetables all the year round; Until the introduction of the above variety it was my custom to make a sowing of the early white Peas about midsummer, for the purpose of providing a late dish or two in the autumn; but in unfavourable dry seasons these get so badly infested with mildew as to render them almost useless. Walker's Pea sown about the end of May was a valuable autumn vegetable, but these sometimes get the mildew rather seriously in a dry season. But for the last three years we have had grand rows of superb Peas named Sutton's Latest of All, a sample of which I enclose; these were sown June 2, and, as you will observe, with open weather, will produce a supply for a long time. If these were sown in large pots and grown outside until the approach of winter, and then put into an airy Peach-house, they would continue to bear until nearly Christmas. J. H. Goodacre.

BARROW POINT, PINNER.

THE gardens at Barrow Point Hill—the seat of W. Barber, Esq., Q.C.—are chiefly noticeable for their picturesque arrangement and the fine collection of hardy herbaceous plants. Within the compass of $2\frac{1}{2}$ acres there are spacious lawns, mixed borders of rare plants, an admirably planned rock garden, miniature lake, with the more interesting aquatic and bog plants, collections of alpine plants and Lilies, and a fruit garden of espalier and bush trees. All the year round there is something to admire here, from early Snowdrop and winter Aconite, a host of golden Daffodils, Primulas, Auriculas, Roses and Lilies, till—

"Heavily hangs the Hollyhock,
Heavily hangs the Tiger Lily,"

and the sad word, "Ichabod," is written across the glories of the parterre.

The house, which was formerly the residence of Lady Carr, has been considerably enlarged and improved under the directions of A. P. Seddon, Esq., Assoc. British Architects; and the grounds have been laid out under the care of the present head gardener, Mr. J. W. Odell. A long avenue of Elms, Chestnuts, and Oaks skirts the estate on the east, and a wire fence separates the lawn from pleasant meadows which stretch away to the quaint old village of Pinner. The tower of the ancient church rises from among the red tiled roofs and Elms, and on the right the little "Pin," from which the village takes its name, winds along beneath the shade of trees.

A distinguished visitor—and Barrow Point has many visitors—very happily described it as a "garden of surprises," from the varied attraction of its winding walks, which open up new vistas at every turn. Every opportunity has been taken by means of rustic arches of rude construction to afford support to various effective climber among these are *Ipæa* of several kinds, Honeysuckles, Roses, *Aristolochia*, *Jasmine*, *Tropæolum*, and *Clematis*; of the latter the invaluable Jackmanni, montana, and the homely but elegant Travellers' Joy of the hedgerows. The method of growing climbers deserves more attention; the arches themselves when covered are sometimes charm-

ing pictures, and moreover they form a framework for objects of interest in or beyond the garden. The arches are gayest in the time of Roses, but till quite lately old Gloire de Dijon has been a splendid feature combined with the deep purple of Jackman's Clematis. To beds of light colours the larger leaved Ivies are a suitable foil, and furnish a series of pretty vignettes.

Another interesting feature is the rock garden (fig. 58, p. 415). A few years ago this was one of the weedy and neglected spots that is seen frequently on the outskirts of large gardens, the receptacle for the garden debris or an ever-smoking Valley of Hinno. How such an unsavoury corner may be made, not only innocuous but interesting and even beautiful, may here be seen. A few Elms and Ashes served as a nucleus round about which channels were excavated and the soil, chiefly clay, thrown into irregular heaps; pleasant shady walks wind to and fro through the little wilderness of pretty wildings, among which the Fern family thrive amazingly. Many loads of burrs and stumps of trees gave further relief; soil was distributed over these, and the whole planted with suitable shrubs, hardy plants, bog plants, and alpinists; while the water margin affords room for Lilies, Rushes, Caltha, and other aquatic plants. A rustic bridge spans the water, where one may stand and watch the gambols of the fish, and occasionally catch a glimpse of the kingfisher as he darts past.

Among the most conspicuous of the occupants of the rock-garden are several species of Mullein, Lythrum, Polygonum, Rosa rugosa, Helianthemum, Malva moschata, Foxgloves, Campanulas, Day Lilies, Golden Catalpa, Globe Thistle, Lobelia fulgens; and on the lower slopes, Arabis, Silenes, dwarf Phloxes, Saxifrages, and a host of pretty things which in spring produce masses of bright colour. One might get a dozen "bits" equally interesting with that here shown. We must not forget to note that several species of British Ferns are plentifully distributed, and with admirable effect.

Perhaps these gardens are at their best in May on account of the fine collection of alpinists and the large number of Polyanthus and hardy Primulas planted out. Among these we noticed rosea, denticulata, cortusoides, and nivalis. Poppies make a brave show, from the huge brilliant orange-scarlet *P. orientale* to the varying shades of *P. nudicaule*, and the still more chaste and delicate alpine Poppies, yellow, white, and terra cotta. Latterly the most showy flowers were the Helianthemum, Rudbeckia, Pyrethrums, Scabious, Olearia Haastii, Lychnis Flos-Jovis, Pentstemons, Gaillardias, Globe Ranunculus, the Peach-leaved Campanula, Lychnis Sieboldi and *L. Haageana*, the herbaceous Phlox of several varieties, *Tritoma uvaria*, and several fine clumps of Pampas-grass. One little bed of hardy Orchids was most interesting six weeks ago. Among them we noticed *Cypripedium spectabile*, *C. rubescens*, and *C. arachnites*; these were grown in shade, facing north.

Lilies are grown along a border on the left of a bed, near to the house; among them are *L. giganteum*, now bearing eight pods of seed; *L. auratum*, *L. longiflorum*, *L. pardalinum*, *L. canadense speciosum*, several varieties; *L. candidum*, *L. colchicum*, *L. testaceum*, and *L. tigrinum*. They show to great advantage against a background of evergreen shrubs. With these, too, and scattered about the various borders, are some of the finest varieties of Iris, among them being *I. fimbriata reticulata* and the chaste dark beauty, *I. susiana*.

Perhaps the most interesting part of garden work is the raising of seedlings of the choicer kinds of hardy flowering plants. Easily accessible from the house, and by the side of a pretty mixed border edged with dwarf cordon Apple trees, there is a series of nursery beds, which for months in the autumn furnish daily new delights. Among the species were Carnations, Pyrethrums, Polyanthus, Delphiniums, Campanulas, Antirrhinums, Pentstemons, and Gaillardias. Only the best specimens are promoted to the borders, and the remainder discarded or given away. A broad belt of Nicotiana

affinis is not only effective with a background of shrubs, but remarkably fragrant. One of the most brilliant bits of colour is that of a scarlet Tropaeolum, which was planted at the foot of a dead Apricot tree, facing south. It is now a broad sheet of green, thickly spattered over with the brilliant flowers. Less striking in colour, though equally beautiful, and far more tempting and tasteful, was a splendid crop of the old Moor Park Apricot. The mixed borders, of which there are several, have backgrounds of flowering shrubs and Conifers. Briefly, it may be said that the gardens of Mr. Barber are a fine example of what intelligent effort can accomplish in beautifying the scene in a short time. *T. W., Harrow.*

REPORT OF THE SEED HARVEST OF 1888.

RED CLOVER (*Trifolium pratense perenne*).—Continental reports speak generally of very bad crops, more or less damaged by wet weather. American reports are also unsatisfactory, the shortness of crop in that country arising from the extreme drought at a critical period of the development of the plant. Very little English seed is coming forward at present, and there are no expectations of large outputs in the future.

White Clover (*Trifolium repens*).—The crop of this seed in Germany and Poland is reported to be one of the worst on record, and samples show very great damage by rain. Reports from France are somewhat similar, whilst America only expects moderate crops, the plant being more or less burnt up.

Alsike Clover (*Trifolium hybridum*).—It is expected that some fair samples of English seed, but in very small quantities, may come forward later. In Germany, Poland, Sweden, and other Continental producing districts of this article, the reports are exceedingly unfavourable, and it is almost impossible at present to estimate the extent of the damage done to the Alsike crop and to the Clover harvest generally by the wet season. It is full early yet for reliable information as to the American and Canadian crop, but the production of this article in the States is only limited in quantity.

Trefoil (*Medicago lupulina*).—This seed has suffered in the same disastrous manner, and high prices are easily made for good average samples.

Lucerne (*Medicago sativa*).—Crop is small, and higher prices than last year are being asked.

Timothy (*Phleum pratense*).—Promises to be better and cheaper than last year. The crop is large, and well harvested in the producing districts.

Rape.—Is a fair average crop; but in consequence of the wet weather there are very few samples coming forward in a suitable condition for export.

Mustard.—Fair average crop.

Swedes and Turnips.—These, notwithstanding the wet summer, were harvested generally in very good condition; the prices at the present time being favourable to buyers.

Rye Grasses (*Lolium perenne* and *italicum*).—The crops in Scotland, Ireland, and France have been seriously damaged by rains, and samples are darker in colour than last year. We find the germination of the samples well up to the average. Prices will be certain to rule higher than last year.

NATURAL GRASSES.

Anthoxanthum odoratum (Sweet Vernal).—A very fair crop, again showing high standard of germination.

Agrostis stolonifera (Fiorin).—A good average crop; but, as this grass is very subject to ergot, samples free from the impurity always command good prices.

Alopecurus pratensis (Meadow Foxtail).—This is again one of the short harvests, and few samples give the average germination of the past two or three years.

Cynosurus cristatus (Crested Dogstail).—Is a fair crop in England, Ireland, Holland, and Germany, but the colour is affected by the continuous rains.

Dactylis glomerata (Cocksfoot).—Very large importations have arrived from New Zealand, and as European samples have again high vitality, low values are reached.

Festuca tenuifolia (Fine-leaved Fescue).—This crop is again very light, but as its principal use is for the formation of lawns and pleasure grounds, it is not an important factor in the supply.

Festuca duriuscula (Hard Fescue).—Is a good average crop, the seed is again of high germination.

F. pratensis (Meadow Fescue).—Crop plentiful, and quality very fine, with high germination.

F. elatior (Tall Fescue).—This grass becomes more plentiful every year; still fine samples command good prices.

Poa trivialis and **P. nemoralis** (Rough-stalk Meadow-grass and Wood Meadow-grass).—Are fair average crops.

P. pratensis (Smooth-stalk Meadow-grass).—Reports speak of fair average crops, but, as usual, American samples prove, under test, to be very deficient in vitality.

As usual, there is no scarcity of inferior grass seeds in the market at all sorts of prices. *James Carter & Co., High Holborn, London, and Mark Lane.*

TRADE NOTICE.

SAM. DEARDS & CO.

A COMPANY, of which the Secretary, *pro. tem.*, is Mr. W. E. Deards, Dashwood House, 16, New Broad Street, London, E.C., has been formed for the purchase and development of the business of hot-water engineers, heretofore carried on by Mr. S. Deards. The share capital is fixed at £25,000.

HOME CORRESPONDENCE.

HARPALIUM RIGIDUM SEMI-PLENUM.—In your issue of the 6th inst., p. 391, the Rev. C. Wolley Dod gives us some useful information as to the history of this beautiful hardy Sunflower. There is no doubt that the plant certificated is identical with the one distributed by the Rev. C. Wolley Dod as *Helianthus latiflorus*. The huge bunch of cut flowers placed before the Royal Horticultural Society by Mr. Ware, of Tottenham, was labelled *Harpalium rigidum semi-plenum* (Baker), *Helianthus latiflorus* (Wolley Dod). The Floral Committee evidently adopted the nomenclature of the new authority in preference to the name given by the Rev. Wolley Dod, who has undoubtedly been misinformed by his correspondent. *Harpalium rigidum* is a very valuable plant. I had a bed of them in flower this autumn, from which might have been selected several varieties. Although similar in habit and time of flowering, the flowers differed very much in form, some having only a single row of ray-florets, while others had two, three, and some even having an appearance of being double. *C. S.*

PROLIFEROUS SPIKE OF PHALÆNOPSIS.—The figure of this in last week's *Gardeners' Chronicle* (p. 389) represents a much more interesting fact than the short note which accompanied it would lead one to suppose. It is of course usual for *Phalænopsis* to develop young plants on the tips of the old flower-spikes, if these are allowed to remain long enough on the plants; but the spike shown in the figure was one which had been cut off the plant soon after the flower-buds began to expand, a heavy fog having almost denuded the spike—a very fine one—of almost all its buds. Instead of throwing the spike away it was left standing with its base in water in the house, where it had been grown, and in time it developed young plants in the axils of the branches of the spike, not on the ends. There were three young plants originally, but only two attained any size. Growers of *Phalænopsis* will see the difference between leaving the flower-spike on the plants in the hope of getting young ones, and removing the spike as soon as the flowers are over and placing it in water. As a means of propagating these plants, the flower-spikes may be turned to good account. As an instance, I may mention that we have only one small plant of *P. gloriosa*, which

flowered at Kew this year. When the flowers were over the spike was cut off and placed in water, and it now bears a young plant in one of the flower-axils. *W. Watson, Kew.*

LAVINGTON CONQUEROR POTATO.—I have sent you one root of a new Potato now under trial at Chiswick, Lavington Conqueror. I have grown the Potato four years, and with me it has resisted the disease better than any other, and I may say I have grown all the best varieties in cultivation. It has a very stiff, upright haulm, which is much in favour of it as a garden Potato. The tuber requires more time to cook than some others. Last year our tubers cooked well from November, 1887, until August, 1888, and were almost as good in colour in August as in November. I have seen many accounts in the *Gardeners' Chronicle* and other papers about disease resisting varieties. I thought I should like you to see a root as they come out of the soil. *J. Lye, Cliffe Hall, Market Lavington.* [The tubers sent with this letter were clean, fine white-skinned, oval in shape, and of first quality when cooked. It seemed to be a fair cropper, and the haulm was short. *Ed.*]

MEDICATED TOBACCO PAPER.—This is the name given to any article sold for the purpose of killing greenfly without doing any injury even to the tenderest foliage of Ferns. Being often obliged to remove tender plants and Ferns from one house to another before using the ordinary tobacco-paper, I got some of the medicated tobacco-paper, and am well pleased with it that I would like to recommend it to my fellow gardeners. The price is 1s. 6d., per pound, but it is cheap at that figure. *R. C. T.*

TRANSPLANTING FRUIT TREES.—The time of year has now arrived for rooting-out barren or worn-out Apricot, Peach, Plum, Cherry and Pear trees, and planting-in young healthy trees. The old trees having been rooted out, attend to drainage, if necessary. If the natural soil in the garden is not of sufficiently good in quality, a compost, consisting of four parts sound fibry loam and one of old lime-rubble and wood-ashes, well mixed, should be put into the holes in a moderately dry state, so that it may not stick to the feet in treading on it. The new trees should be taken up from the nursery-ground with as much soil as possible adhering to the roots, so that only a slight check to growth may be experienced. In planting, make allowance for the soil subsiding 5 or 6 inches, within as many weeks from the time of planting. Having placed the tree in position, spread the roots out in every direction from the wall, with a little inclination downwards, shortening back at the same time any straggling roots, and cutting away any portions that may have been injured in the process of lifting. Make a series of incisions along the principal roots with a view to encouraging the emission of young feeders, covering them with a depth of about 6 inches of the compost before named, working it well among the roots before treading it gently over. This done lay on 3 or 4 inches of rotten manure as a mulching, which will maintain the roots in a more equable condition than could otherwise be secured. Fasten the trees temporarily to the wall with nails and long shreds, to allow of their sinking with the soil. Then, in the absence of rain, give the trees a good watering to settle the soil about the roots. The sooner the trees are transplanted after the crops have been taken in the autumn the better will be their chances of becoming re-established before shedding their leaves. It will be advisable, if the work be done in bright sunny weather, to hang a piece of tiffany or mats over the freshly planted trees during the heat of the day, and to damp them overhead with the syringe in the afternoon for a few days, so as to retain the leaves on the trees as long as possible. *H. W. Ward, Longford Castle.*

TREES DYING OFF IN THE GARDEN.—You ask us to send particulars of trees dying this year. An Apple tree in my orchard, about ten years old, has withered, as far as leaves and fruit are concerned. It is covered with fruit as big as a hen's egg, and, for no reason that I can make out, all have withered, but there seems to be some vitality in the wood, though I fear it will not recover. It is just possible that it has got down to an unsatisfactory subsoil. Here we are on the rock, and there is a nasty cold shale on the rock. Now that we are on this subject, I may tell you that I do not think Apples would ever pay in Cornwall, the trees are so covered with lichen,

and only a few sorts seem to do anything like well. An Apple called Polly, because raised in Polmassick, a hamlet in this locality, seems to do better than any, and it is a good Apple for either cooking or dessert. Can you tell me anything about the Vicar? or what would be the best sort to grow on a soil like mine? *N. Nevill.*

OUR MARKETS.—I beg to call attention to a growing evil amongst some of the commission agents in the Covent Garden market. Every week advertisements are inserted in the several gardening journals for cut flowers in any quantity, and upon the flowers being sent, a reply comes in due course that the market is glutted, that there has been no sale—only realised enough to cover expenses, &c. Now if this has been the case all through, why is the advertisement continued?—as, of course, it misleads people, and many people having small quantities only, and wishing to realise, forward the same, only to find that they have been altogether misled. I have taken the trouble to try more than one salesman. In the last case I forwarded, carriage paid and boxes my own, to a large firm:—1 box containing 24 dozen Asters, twelve in bunch, good blooms, well packed; 1 box of 5 dozen white Cactus Dahlias; 1 box, 4 dozen Dahlias, various. In return, I received a note saying, "Sorry, trade bad; market at present overstocked; season bad!" and a host of other troubles, upon which I reversed the paper and wrote asking for the result of sale, as the Asters were mentioned but no Dahlias. Upon which I get a reply, a copy of which I enclose. Another case:—I sent 18 dozen Carnations, fair Sweet Peas, 1 dozen Roses, 5 dozen Dahlias, 3 dozen Harpalium, 2 dozen—all in separate boxes. Reply,—"Not sold: no demand; market glutted." This firm still advertises "Wanted any quantity," &c. *F. W. B.* [Our correspondent should enquire of his salesman, before sending, whether the goods are likely to be saleable. *Ed.*]

THE LATE FROST.—On the 2nd inst. we experienced the most destructive early frost that has occurred for many years. The thermometer here recorded 9°; it was no mere sudden fall of the temperature which sometimes happens, but was, in a gardener's phrase, a thorough frost, lasting all through the night. As might naturally be expected, and particularly so, considering the soft state of vegetation this season, the effects were most disastrous. Not only were all tender subjects cut off, but many that are hardier suffered likewise. I do not recollect any occasion when Peaches and Nectarines have been injured at such an early date. Late Admirable and Desse Tardive suffered considerably here, and among late varieties of Nectarines, Albert Victor fared the worst, some of the fruits near the summit of the wall being frozen through, and are now quite black. Coe's Golden Drop Plum was somewhat damaged. Vegetables, which were very bountiful, are now greatly diminished by the loss of Peas, Beans, Globe Artichokes, and a part of the crop of Veitch's Autumn Giant Cauliflowers, &c. We have also to rue the loss of so many beautiful autumn flowers, which are cut down entirely, as Asters, Dahlias, Japanese Anemones, Zinnias, &c., which are usually enjoyed for a much longer period. *Geo. T. Miles, Wycombe Abbey.*

PHLOX DRUMMONDI.—This has made one of the most useful of bedding plants during the wet and cool summer. Pelargoniums, Calceolarias, and the ordinary flowering plants that are employed to fill the flower-beds made but a poor display until the fine sunny weather of August set in; but the Phlox Drummondii, despite the rain, seemed to be as floriferous as ever, and in looking over collections, one is pleased to see that a new variety occasionally puts in appearance. The new varieties are much superior to the old, and are well worth growing for beds and in borders. *R. D.*

RUNNER AND KIDNEY BEANS.—In your report of the condition of the seed crops in Holland, mention is made of the lateness of kidney and runner Beans, and that the seed crop must be a moderate one. Things are perhaps rather worse in this country, and have been made so by the recent frosts, which, following in rapid succession, completely settled runner and dwarf Beans alike, so that their usual season of productiveness has been shortened at the back end fully three weeks, whilst the first portion of the season was fully a fortnight later; thus, the pod-production season, whether for seed or for market, has been perhaps one of the shortest on record. On both runners and late dwarfs, where the

pods were left to ripen from the first, the proportion fairly matured when seized by frost was about one-third. In the case of first early dwarfs, such as Ne Plus Ultra, for instance, the growth being less robust, the pods are nearly all ripe. Runners, however, are likely to be the worst seed producers, as being so much more fleshy or succulent; the frost may, in addition to having checked plant growth, also have destroyed the germinative powers of the least ripened seed. It has been no uncommon practice to have to artificially ripen very late ripened seed, but in the present case the very early and severe frosts may have rendered that labour useless. To market growers the loss on the sudden destruction of a crop which was still selling very well is indeed considerable, but may be recouped by compelling an earlier and larger demand for Cabbages, Coleworts, and Brussels Sprouts, all of which are very abundant and early, whilst Autumn Giant Cauliflowers, too, are exceptionally good and plentiful. Spinach also is exceedingly abundant and good, and, so far, not injured by the frosts. I need hardly say that with the destruction of the Beans the Vegetable Marrows also followed suit, their case being perhaps the worst of all. *A. D.*

NEW VEGETABLES.—I think "A. D." has jumped very quickly to the conclusion that I was unable to distinguish any differences between the dishes of Long Red Surrey and New Intermediate Carrots shown at Shrewsbury. If "A. D." had seen the specimens referred to, I think even he would hardly have classed them as intermediate. I did not measure them, but the diameter at crown would be about 2½ inches, and the length of root 15 to 18 inches, gradually tapering the whole length. His statement that I could only have seen the New Intermediate Carrot there for the first time is on a par with some of his other statements. I may tell him that I have grown that variety as sent out by at least two of our leading seedsmen, and I assert that, as an Intermediate Carrot—as I understand the word—it is no improvement on James' Scarlet, but the reverse. The latter variety, as every gardener knows, is valuable on shallow or cold soils, where it would be impossible to grow long Carrots satisfactorily. By persistently selecting the longest and most tapering roots of James' Intermediate, the seed growers and nurserymen have made a great advance in the New Intermediate, as "A. D." says, but at the same time they are fast defeating the very object the raiser of the old Intermediate must have had in view in introducing it, namely, a short root for shallow soils. As to "A. D.'s" assumption, that "most gardeners admit" the great advance made during the last twenty years in most kind of vegetables, some of which is really illusive where he says:—"But there are several good things, and every gardener will admit the great advance in Cauliflowers made with the introduction of Veitch's Autumn Giant." I was under the impression, from reports of the wholesale houses, given from time to time in these pages, that the bulk of their trade was done in old standard varieties of vegetables, but from "A. D.'s" point of view I am again totally wrong, as he seems to think any check to the introduction of new varieties would be stagnation and ruin. As regards the Cabbages—our first point of difference—I would like to know if Little Gem has been tried at Chiswick, and if so, is it there reported as a distinct variety? *John Wilkes, Creswell Hall Gardens, Stafford.*

APPLE CULTURE.—Of late it seems to have become fashionable in some quarters to comment on the large sums of money we pay annually for foreign produce, chiefly for that of American and Canadian growth, and it is thought that that money might just as well be retained in our own country, consequently a greatly extended cultivation of Apples is being strongly advocated. Amongst other things it is stated that our orchards are a "positive disgrace," that bad varieties should be replaced by better, that the best fruits of home growth are equal to those from America, &c. Well, my own opinion is that those who preach and advocate the above doctrine, have discovered a mare's nest which, if acted upon, will prove to be a white elephant, that in years hence it will be found to be a question of bad advice and so much capital lost. I freely admit that in good seasons the best fruits grown in Kent, Hampshire, and one or two other counties will compare favourably with those from America and Canada, but to generalise from that fact, and advocate the planting of Apple trees in all directions with a view to curtailing or obviating the necessity for this foreign supply,

appears to me to show a lamentable want of sound logic. Why are we being beaten in the home market? one may ask, and as readily answer, from causes beyond human control, viz., climatic conditions. Those who live the longest will learn the most on this particular point, and I can only hope that those who hold a contrary opinion to myself may prove to be right, and that I may be wrong. That there is room for a further extended profitable culture of small fruits in this country goes without saying, and it is impossible to see at present what the end of it will be, but the probabilities seem to be that when we have grown sufficient for our own requirements we may do an export trade. These remarks, I trust, will not be taken as emanating from a dogmatic spirit, and must be accepted for what they are worth.
Young Crab.

THE OLD MUSCAT OF ALEXANDRIA VINE AT HAREWOOD CASTLE.—This fine old Vine, which may be termed the Hampton Court Vine of the North, so far as age and size are concerned, is this year producing a good crop of nice, well set, useful bunches. They are fully a month later in ripening than usual in more genial seasons. The house it fills is a lean-to, some 60 feet long by about 26 feet wide. It is planted outside, about the centre of the house, the main stem being brought in under the "pan" of the front-lights, at the top of which a branch has been taken horizontally to each end; from these other branches are taken vertically under each rafter to the top of the house. Owing to the size of the house and the extensive root-run in the border it is practically impossible to push it on in the usual sense of the term amongst gardeners, hence Mr. Fowler's anxiety to get the fruit fully ripe, so as to be able to keep them well into the new year, as is usual in more genial seasons. From an inscription on a stone let into the back wall of the house, I found it had been planted 105 years. *H. J. C., Grimston, October 1.*

HEAVY CROP OF GROSSE MIGNONNE PEACH.—In these days of progress Fruit Conferences have been held in different part of the country, in order to stimulate increased interest and culture in home fruits. While visiting gardens this season I have given more than usual attention to the condition of fruit trees. The other day, at the seat of the Earl of Galloway, Galloway House, I had an opportunity of inspecting the crop of outdoor fruits, and was much gratified to find excellent wall fruit, especially of Peaches, which were ripening well. The most notable tree there is one of Grosse Mignonne, bearing fine fruit. Mr. Day, the gardener there, whose heart is in his profession, and whose skill as a fruit grower has been recognised at the Edinburgh and Glasgow shows this season, and also on former occasions, weighed one of these in my presence, and which fruit turned the scale at 5½ oz. This tree was in good health, and bore a large crop of Peaches finely finished. Such fine samples are not often seen growing out-of-doors so far North. While visiting the neighbouring garden at Glasserton I saw an excellent crop of Figs outside, on the wall; many of the fruit weighed 7 oz. This tree covered 611 square feet of the wall, and always bears a fine crop of large Figs. *A. Milne.*

SOCIETIES.

ROYAL HORTICULTURAL.

TUESDAY, October 9.—The meeting held in the Drill Hall, James Street, Westminster, on Tuesday last was but meagrely attended by exhibitors, and the exhibits were few in number, if we except the magnificent display of Ferns made by Mr. H. B. May, of Edmonton. These filled up most effectively a broad table on one side of the Hall, and elicited unaffected admiration from the visitors. A little fruit was shown, viz., Plums, from the nurseries of Messrs. J. Veitch & Sons; Grapes, from Messrs. Roupell, C. Ross, Bradshaw, and the Society's garden.

Floral Committee.

Present: G. F. Wilson, Esq., F.R.S., in the chair; and Rev. W. Wilks, Messrs. J. Laing, H. Herbst, W. Goldring, J. Walker, B. Wynne, W. Wildsmith, W. Holmes, R. Dean, C. Noble, C. Pilcher, J. Dominy, H. Ballantine, H. M. Pollett, J. O'Brien, E. Hill, Shirley Hibberd, G. Duffield, and T. Baines.

From Messrs. J. Veitch & Sons, Royal Exotic Nursery, Chelsea, S.W., there were a few exhibits, the central object being a new and very fine hybrid Nepenthes. Pollen of *N. Veitchii* was sent by Messrs. Veitch to Mr. Lindsay, of the Royal Botanic Garden, Edinburgh, who happened to have female flowers of *N. Rafflesiana* in bloom at the time. The hybrid is named Dicksoni, after the late Prof. Dickson, of Edinburgh. The plant bore five fully developed pitchers, which are about 9 inches long, or more, cylindrical in shape, and pale apple-green, heavily splashed with purple-brown, the lid being marked with the same colour on the inferior surface; the ring at the mouth very prominent and dark red. The foliage, and the rim of the pitcher, clearly show the parentage of *N. Veitchii*, while the general form of the pitcher is like *Rafflesiana*. It is a remarkably handsome variety, although the first pitchers that were produced were so poor that it was almost determined to throw the plant away. From the same nurseries there also came specimens of *Bouvardia President Cleveland*, rich scarlet; *Amasonia punicea*, the scarlet bracts and stem, &c., well displaying the cream-coloured flowers; *Amaryllis Autumn Beauty*, a pretty flower white netted with rose, as in *A. reticulata*, but paler, the leaves variegated, and the whole plant dwarf; several plants of the hybrid *Begonia*, John Heal, and *Canna Ulrich Brunner*, a plant of moderate height, with green leaves and large flowers of deep rich scarlet.

Messrs. H. Cannell & Sons, Swanley, Kent, sent plants of double tuberous Begonias: *Mrs. Stark*, with light yellow flowers, and *General Chichester*, warm rose, were certificated. Cut blooms of single varieties were sent by Messrs. J. Laing & Sons, Forest Hill.

Cut blooms of a Rose (H.P.) Denmark was shown by Messrs. William Paul & Son, Waltham Cross, Herts. Messrs. Paul had received the Rose from Messrs. Teiner, Lassen & Dithmer, of Elsinore, who hold the stock. It resembles somewhat Baroness Rothschild in colour, and apparently forms a good solid flower.

Mr. Ballantine, gr. to Baron Schroder, The Dell, Egham, contributed a specimen of *Lælia porphyritis*; the plant was about 8 inches in height; sepals and petals dull rose, faintly reticulate; lip deep purple-crimson, white at the base; column crimson at the apex.

Mr. G. Stevens, St. John's Nursery, Putney, S.W., sent *Chrysanthemum Elsie*, a reflexed variety, very lax, pale cream, deeper in the centre: a very pretty flower.

Adiantum Waltoni diffusum from Mr. A. Walton, Edge Hill Nursery, Burnley, was Certificated. It differs from *A. Waltoni* in having smaller, more cuneate pinnules, and the whole habit is more spreading. Mr. Walton also had several plants of *A. Farleyense*, raised from spores collected from a plant in the possession of E. Eckroyd, Esq., Edgeland House, Burnley, Lancashire.

Mr. C. Fardy, Warkworth, Northumberland, had *Gladiolus*; and Mr. S. Ford, Leonardlee, Horsham, sent *Nerine coruscans*.

In the collection of Ferns exhibited in such capital condition by Mr. H. B. May, Dyson's Lane Nurseries, Edmonton, were many well grown large plants of *Adiantum* species and varieties, *Aspleniums*, *Pteris serrulata*, *P. tremula*, *Davallia tenuifolia*, *Woodwardia*, *Nephrolepis* in variety, &c. We may specify a few of the more striking or novel of these. The *Adiantum* group included—of *Capilluveneris* varieties, *Daphnites cornubiense*, *Draperi*, a fine tall grower; *Fergusonii*, slender in habit, and also tall; fissum, neat, and low of stature, with divided pinnæ; *Veitchii*, young foliage very bright—one of the prettiest; *Adiantum cuneatum grandiceps* is of good height, and possesses tufted fronds; *A. tetraphyllum gracile* has young fronds of a crimson tint, while the old ones are green in colour—8 inches high; *A. Lathomi*, *A. Farleyense*, *A. Legrandi*, and *A. Bausei*, a variety with graceful pendulous pinnæ and fronds. Of *Asplenium* mention may be made of *flaccidum*, nobile, a pretty subject, with small linear pinnæ; *laxum*, a Fern of light habit, and much divided compound fronds; *cicutarium* is a beautiful lace Fern, 1 foot in height, with a dense habit of growth. Lastreas were many; the best were *aristata*, of dense habit, and a slight variegation on the centre of the more subordinate portions of the frond; and *erythroides*, the young fronds of which have some bronze, some crimson tints. It is of a distinct spreading habit. In *Davallias* were observed—*ajiensis*, a dense umbrose species with a short triangular frond; *fœniculaceum*, a lace-like

frond, boldly arching, 3 feet in height; *tenuifolia* var. *Veitchii*, with a frond similar to the last-named, but less tall; *elegans*, a well-known species—a good basket plant. *Nephrolepis davalloides furcans* is a fine species; *N. Duffi* has a very dense habit of growth; *N. pectinata* has a simple frond, having simple pinnæ of almost equal length and breadth on its entire length. It is 1½ foot in height. Varieties of *Pteris tremula* were numerous, Mr. May possessing the whole stock of many of these. We may specify the following as being the most distinct:—*Grandiceps*, tall and slender, inclining to be plumose at the extremities of the fronds; a variety with deep fronds, 3 feet high, not far distant from the original form; *flaccida*, 4 feet high, distinct, with arching fronds, and club-shaped twisted pinnæ; in the best forms the twisting is very marked. Of *Pteris serrulata* there were several new forms, also of *P. cretica*. *Notholaena chrysophylla* is a very neat dwarf plant, good for the Fern case, as are likewise *Gymnogramma Parsonsii*, a dwarf golden Fern; *Cheilanthes hirta* var. *Ellisi*, and *Pteris geraniifolia*.

FIRST-CLASS CERTIFICATES.

Adiantum Waltoni diffusum, from Mr. A. Walton.
Canna Ulrich Brunner, from Messrs. J. Veitch & Sons.

Nepenthes Dicksoniana ×, from Messrs. J. Veitch & Sons.

Chrysanthemum Elsie, from Mr. G. Stevens.
Double *Begonia General Chichester*, from Messrs. H. Cannell & Sons.

Double *Begonia Mrs. Stark*, from Messrs. H. Cannell & Sons.

Lælia porphyrites, from Baron Schroder.

MEDAL.

Silver-gilt Banksian.—To Mr. H. B. May, for group of Ferns.

Fruit Committee.

Present: Dr. R. Hogg, in the chair; and Messrs. H. J. Veitch, J. Lee, S. Ford, A. H. Pearson, J. Burnett, R. D. Blackmore, W. Warren, J. Cheal, and G. T. Miles.

Messrs. J. Veitch & Sons, Chelsea, S.W., contributed the chief exhibit, namely, a collection of twenty-seven dishes of Plums, all fine clean specimens, *White Magnum Bonum*, *Jefferson* and *Pond's Seedling* were specially fine; and *Decaisne*, *Kirke's*, *Archduke*, and *Coe's Golden Drop* were also good examples.

Seventeen varieties of Plums were sent from the Society's gardens at Chiswick, comprising such varieties as *Mirabelle Tardive*, *Drap d'Or*, *White Bullace*, *Blue Damson*, and *White Damson*.

There were several exhibits of Grapes. *W. Roupell*, Esq., *Harvey Lodge*, *Roupell Park*, S.W., showed specimens of *Black Hamburg* from an unheated house. They were freely coloured and of good appearance. Similar specimens were also sent from Chiswick. Mr. Roupell also had *Gros Colmar*, finely coloured and heavily bloomed, which success he attributes to allowing the plants to retain more leaves than is generally the case; and a bunch of *Cannon Hall Muscat*, handsome and finely flavoured. Both Vines had been grown in pots.

Mr. T. Bradshaw, *Downshire Gardens*, *Hillsborough Castle*, Co. Down, and Mr. C. Boss, *Welford Park Gardens*, *Newbury*, also contributed Grapes.

Messrs. J. Carter & Co., *High Holborn*, London, W.C., showed *Union New Model*, a cross between *Rousham Park Hero* and *Magnum Bonum*, a large almost round yellow-skinned variety.

Laxton's Open Air Tomato was shown by Mr. R. Dean, *Ealing*, some of the finest being ripe, others not. It is a medium-sized fruit, and has strongly marked ribs.

Samples of the "Planet" garden tools for kitchen and market garden work were shown by Messrs. Lloyd, Lawrence & Co., 34, *Worship Street*, E.C. They are drills, hoes, ploughs, &c., in combination, apparently well suited for what they are intended to do. They will be shortly tried at Chiswick, when we shall again refer to them.

MEDAL.

Silver Banksian.—To Messrs. J. Veitch & Sons, for a collection of Plums.

Council Meeting.

At a meeting of the Council it was resolved that a special general meeting of the Fellows be held at 2 P.M. on Tuesday, November 13, in the Council-room of the Society, 111, *Victoria Street*, to discuss

and pass the bye-laws. The Hon. Sec. reported that during the recess he had received an application from the Melbourne Exhibition Commissioners for a representative collection of English grown Apples and Pears to be sent out to Australia for the Exhibition, and that he had arranged to comply with the request immediately after the Chiswick Conference in the hope that many of the exhibitors there would allow their specimens to be sent out to the colony for that purpose.

The following candidates were duly elected Fellows, viz., Wm. Brooks, W. Dale, P. W. Fairgrieve, M. C. Mitchell, J. R. Whitley, A. N. J. Whitley.

NATIONAL CHRYSANTHEMUM.

FLORAL COMMITTEE: October 10.—Mr. E. Sanderson, President in the Chair; there being a good attendance of members.

Messrs. W. & G. Drover, nurserymen, Fareham, sent *Dorrie*, Japanese, a very fine early yellow, in the way of Mr. Garnet, but brighter in colour, and broader in the petal. (Awarded a First-class Certificate of Merit.)

Mr. E. Molyneux, of Swanmore Park Gardens, Bishop's Waltham, sent some very fine blooms of the grand Japanese named after him, the colour bright vermilion-crimson, with a golden reverse, broad in the petals; large, full, and very striking. (The Certificate of Merit awarded last year was confirmed.)

From Mr. George Stevens, St. John's Nursery, Putney, came Japanese *Anna Roudier* (Delaux), lilac-pink, a little darker than *Coquette*, very pretty and bright, but not sufficiently distinct.

From Mr. R. Owen, nurseryman, Maidenhead, came Japanese, *Samuel Henshaw*, an incurved flower in the way of *Comte de Germiny*, but thinner, pale rose surface to the petals, with a silvery reverse; one of the earliest to bloom of the Japanese type. Also *M. Leveque*, deep glowing pink—very pretty, and bright broad petals, said to be a sport from *James Salter*, but more reflexed and deeper in colour. (Commended.)

Votes of thanks were awarded to Messrs. H. Cannell & Sons, nurserymen, Swanley, for leaves of *Beta chilensis*, very varied in colour, and blooms of double *Begonias*. Also to Mr. R. Owen, for a stand of cut blooms of Japanese *Chrysanthemums*, consisting of *Mons. W. Holmes*, very fine in colour; *Edward Molyneux*, *Mons. Dobroul*, soft pink, the edges of the long thin petals, bluish; *James Salter*, *Samuel Henshaw*, *William Cobbett*, pink, broad petals; *Miss Burgess*, rosy-pink, a reflexed form, very pretty, in the way of *Bouquet Fait* which it greatly resembles in form, but with narrow petals, very promising; *Monsieur Leveque*, *Rose Beauty*, cinnamon-pink; and *George Addison* (incurved), very like the old *Lady Talfourd*.

BIRMINGHAM GARDENERS' MUTUAL IMPROVEMENT ASSOCIATION.

THE first meeting of the autumn session was held at the Midland Institute on Tuesday evening, October 2, the President, Sir Thomas Martineau, occupied the chair, and more than 100 members were present.

The President warmly congratulated the members upon the great success of the Society, and the excellence of the programme for the autumn session; he likewise drew their attention to the valuable horticultural education such societies and meeting must be given to the younger members of the profession. He remembered with very great pleasure presiding at the first meeting which was held to inaugurate that Society, inasmuch as it was one of the most useful and one of the most successful Societies that sprang into existence during the three years of his mayoralty.

At the close of his remarks, Mr. R. Parker, The Gardens, Impney Hall, Droitwich, gave a practical, instructive, and interesting paper on essential points in connection with the successful cultivation of our hardy fruits, and a lengthy discussion followed, which brought out much useful information, and a suggestion from Mr. A. Outram that a record should be kept in the library for the use of the members of such varieties that are known to do well in the district. A unanimous vote of thanks was tendered to Mr. Parker for his valuable paper; a similar vote was tendered to Sir Thomas Martineau for presiding. The meeting then adjourned till October 16.

YORKSHIRE NATURALISTS' UNION FUNGUS FORAY.

THE fungus foray of the Yorkshire Naturalists' Union is not an annual event like that of the Woolhope Club, or Scottish Cryptogamic Society, indeed, it is hardly likely to be until more of the numerous botanists who are widely scattered over the broad shire, pay more attention to the study of fungi. It is seven years since the Union had its last foray—the first ever held in the county, but it can be truly said that more practical work has been done during that period than since the time of James Bolton, of Halifax, one hundred years ago.

It seems, therefore, that an organised raid on the larger fungi, under competent guidance, can be the means of creating an interest in the study, and there is no doubt that the outcome of the Yorkshire Naturalists' foray, held on September 25, will be the means of giving a further impetus to the study of a much neglected group of plants. In every sense the foray was a success. The hunting ground was everything to be desired, being of a mixed kind and easily accessible; fungi were abundant, each one was in the best of humour, and this, coupled with beautiful weather, rendered the excursions most enjoyable.

As already intimated, mycologists in Yorkshire are not a strong body, yet sufficient numbers put in an appearance on the morning of the foray, in spite of the cloudy and threatening sky, enthusiastic enough, to carry out the programme in its entirety. Amongst these were the Rev. W. Fowler, M.A., Mr. G. Massee, F.R.M.S., of Kew, W. Cheeseman, R. Dewhurst, W. West, F.L.S., A. Clarke, C. Crossland, a few others, and the writer. Two parties were arranged, the larger one under the able guidance of Mr. Massee, to whom the success of the foray is due, investigating the woods of Bramham Park, a magnificent spot of nearly 2000 acres—the other scouring the most excellent old Fir woods of Wigton Moor, and the extensive woods (principally Beech) of Harewood Park, one of the grandest and most extensive parks in the county.

Better hunting-grounds could not have been chosen. Both parties collected a large quantity of fungi, and, when the baskets were filled to overflowing, drove back to the Leeds Philosophical Hall, the meeting-place, and where the show was to be held.

It is very easy to collect fungi, when there are any fungi to collect, but to look carefully at every specimen picked up by a body of men during a day's ramble, in a limited amount of time, as well as several consignments collected a day or two before the meeting, from various parts of the county, was no light task. In fact, Mr. Massee was more than fully employed, and at this particular stage the services of other British mycologists would certainly have been an advantage. It was impossible to get through them all in the time allotted, yet sufficient specimens were laid out to constitute a "show," which was inspected by many members and friends who had been unable to take part in the foray.

Then the meeting was held, over which the Rev. W. Fowler, M.A. presided, and at which Mr. Massee was called upon to give the results of the day's work which he did. Altogether over 200 species had been collected, about forty of which were new to the West Yorkshire flora, and a few others which had not been seen in the Riding since Bolton's time. In the Hymenomycetes, white-spored species largely predominated and especially abundant were the genera *Hygrophorus*, *Russula*, and *Lactarius*. Several of the commonest species, e.g., *A. melleus*, *A. fascicularis*, &c., were apparently absent or nearly so. Amongst the principal finds were *Lactarius aspidius*, Fr., and *Russula cuprea*—a species included by Fries under *Russula nitida*, from which it is readily distinguished by the copper-coloured pileus and rose-coloured stem—both new to Britain. Other species of note were *Lactarius aurantiacus*, Fr., a really pretty species with a deep orange pileus and stem and decurrent gills, a close ally of *L. mitissimus*, Fr.; *Russula corulea*, Fr.; *R. granulata*, Cke.; *Hygrophorus hypothejus*, Fr.; *H. Clarkii*, Berk.; *H. calyptraeformis*, Berk.; and many others, that have the merit of being rare. Later in the evening, Mr. Massee gave an interesting address on the "Evolution of Fungi," which he dealt with in a masterly and humorous manner. A hearty vote of thanks to Mr. Massee for his address and other services brought the first day's meeting to a close.

Next day those members (who were not many) who were really desirous of knowing more about fungi again met, and devoted most of the day to

the examination of the more interesting forms. On this day the public also had an opportunity of seeing a "show" of fungi—a novelty in Yorkshire, hardly, perhaps, so attractive as a flower show, certainly as odorous, if not more so. Even the blind came to see them. From our point of view the foray was the most successful ever held in Yorkshire. *H. T. Soppitt.*

NATIONAL FRUIT GROWERS' LEAGUE.

ON Tuesday evening last the second Conference of the National Fruit Growers' League was held at St. Albans. The Corn Exchange was utilised for an exhibition of fruits. A meeting of the members was held at the Liberal Club, when papers were read by Mr. Sampson Morgan on "Fruit-growing for Profit," Mr. A. Bromfield on "Planting of Apple Trees," and by Mr. J. Gray Fleming on "A Proposed New System of Co-operation in Horticulture." Mr. Morgan read a letter from one of the largest fruit growers in the country in refutation of the allegation that fruit culture was unprofitable. He had planted Pippins and other kind of fruit, and at the end of four years raised at the rate of 30 lb. or 40 lb. a tree. This fruit sold at 20s. per cwt., and as high as 2s. per dozen, showing a return of £75 to £100 per acre. The ex-Mayor of St. Albans, Mr. J. Smith, presided over a public meeting in the evening. The following letter from Mr. Gladstone was read:—

"In testimony of my sympathy with the declared purposes of the National Fruit Growers' League, I need only point to my local action here, and my constant endeavours by public declarations to aid in stirring up the public mind, so that it may come to appreciate the very great national importance of the questions jointly embraced in the current phrase 'small culture,' whereof fruit-growing is undoubtedly one of the most important to growers, to consumers, and to our rural population, whose numbers it should increase, and whose wages it should sustain or improve.—Yours faithfully,
"Hawarden, Oct. 8." "W. E. GLADSTONE."

A resolution was adopted, calling upon the Government to provide facilities for the encouragement and establishment of small fruit farms as advocated by the National Fruit Growers' League, by which the English labourer might be easily supported by and retained upon his native land without pauperisation, relief works, or extraneous methods. Another resolution condemned the unpatriotic exportation of the crofters and other agricultural labourers by the expenditure of public money for such a purpose in face of the millions of acres of land lying unused in this country, which was a public and crying scandal, calling for an immediate remedy. *Times.*

CRYSTAL PALACE.

OCTOBER 11, 12, AND 13.—The hardy fruit show this season, although not so fine as we have seen it, was an excellent one. Apples were generally clean and well coloured, and Pears were also satisfactory. Several fine exhibits of vegetables also made a good display. The collections of dessert fruit were also of good average quality.

In the open class, for a collection of Apples, the place of honour was taken by Mr. J. Cranston, King's Acre Nursery, Hereford, with remarkably clean, fresh, and sound fruits of fine size. There were eight competitors, and in the collection 150 dishes. Tyler's Kernel, Blenheim Orange, The Queen, King of the Pippins, New Hawthornden, Grenadier, Gascoigne's Seedling, Peasegood's Nonsuch, Roundway Magnum Bonum, Kirke's Fame, Red Beitigheimer, and many of the popular sorts, as Warner's King, Stirling Castle, &c., were well represented. Mr. J. Watkins, Pomona Farm, Withington, Hereford, was a capital 2nd, showing grand fruits of Catshead, Ecklinville, Warner's King, Lord Derby, Mère de Menage, Stirling Castle, Tom Putt, Stoke Edith Pippin, Hanwell Souring, Melrose, Duchess of Oldenberg, &c., in all about 150 dishes. 3rd, Messrs. Bunyard & Co., Maidstone, with highly coloured and large fruits—about 150 dishes. Alexander was represented by specially fine samples, and there were also good dishes of Beaumaris Reinette, The Queen, Warner's King, Ecklinville, Reinette de Canada, Duchess's Favourite (fine colour), Lord Suffield, Small's Admirable, Lady Sudely, and Cellini. The same exhibitor also had baskets of Apples, containing some of the finest

specimens in the show. The Queen, Duchess of Oldenburg, Worcester Pearmain, Cellini, Warner's King, Grenadier, Cox's Orange, and Worcester Pearmain may be named.

Messrs. J. Cheal & Sons, Crawley, Sussex; H. Berwick, Sidmouth; and C. G. Sclater, Heavitree Bridge, Devon, also showed well; but the Devon fruits were not so clear and plump as the others.

The best twenty-four dishes of Apples (dessert and kitchen) were from Mr. J. McKenzie, gr. to T. S. W. Cornwallis, Esq., Linton Park, Maidstone, in a good competition, with Peasgood's Nonsuch, Ecklinville, Emperor Alexander, Stirling Castle, and Fearn's Pippin, &c.; followed by Mr. A. Waterman, gr. to H. A. Brassey, Esq., Preston Hall, Aylesford, with very fine fruits.

Mr. C. J. Goldsmith, gr. to Mr. C. A. Hoare, Kelsey Manor, Beckenham, led for twelve dishes of Apples, Cellini, Ribston, Emperor Alexander, Peasgood's Nonsuch, and Warner's King being excellent samples.

Pears were not so numerous as Apples, but there was nevertheless a goodly number of dishes. In the large open collection Mr. J. Butler, gr. to A. J. Thomas, Esq., Sittingbourne, led in a very close competition, with over ninety dishes of fairly large fruits, well grown; Windsor, Marie Louise, Passe Colmar d'Elle, Beurré van Geert, Beurré Bachelier, Vicar of Winkfield, Van Mons' Leon Leclerc, General Todleben, Prévost, Napoleon, Winter Nelis, Baronne de Mello, Beurré Luiget, Brockworth Park, Catillac, Pitmaston Duchesse, and Louise Bonne being some of the finest. Messrs. J. Cheal & Sons followed with a small collection of uniform quality, in which there were good specimens of Belle de Buxelles, Beurré Hardy, Duchesse d'Angoulême, Beurré Clairgeau, Jargonelle, Prince Albert, and Jersey Gratioli; 3rd, Messrs. G. Bunyard & Co., with ninety dishes of fair size, but not so clear. The best fruits were:—Beurré Hardy, Doyenne Boussoch, Souvenir de Congrès, Emile d'Heyet, and Daimo, a Japanese variety, pale yellow-green, spotted with brown.

For twelve dishes of Pears (amateurs), Mr. C. J. Goldsmith, gr. to Mrs. C. A. Hoare, Beckenham, led, with well-coloured fruits of Louise Bonne, Doyenné Boussoch, Williams' Bon Chrétien, and Pitmaston Duchesse; Mr. W. H. Chisholm, gr. to Sir F. Geary, Bart., Tunbridge, followed closely.

The prizes offered by the Veitch Memorial Trust, for a collection of dessert fruit brought out a good show, in which Mr. J. H. Goodacre, Elvaston Castle Gardens, Derby, led well, taking the £5 prize and Bronze Medal. He staged a handsome collection. Gros Colmar, Gros Maroc, and Muscat Grapes, Braby Gage Plum, Princess of Wales Peach, Astrachan Apples, Powell's Late Apricot, Souvenir du Congrès and Pitmaston Duchess Pears, Read's Scarlet Melon, and Pines Smooth Cayenne and Queen figured well. 2nd, Mr. W. Pratt, gr. to the Marquis of Bath, Longleat, Warminster, with better Muscats, but weaker in black Grapes. Marie Louise, Louise Bonne, and Pitmaston Duchess Pears, Magnum Bonum Plums, and Pitmaston Orange Nectarine, were good dishes. Mr. A. Evans, Lythe Hill Gardens, Haslemere, was 3rd, with good Smooth Cayenne and Queen Pines, and Black Ischia Fig. Mr. J. B. Reid, gr. to E. Pettit, Esq., Broadwater, Oatlands Park, Weybridge, was 4th, with good hardy fruit.

VEGETABLES.

Of the prizes offered by Messrs. Sutton & Sons, Reading, Mr. T. A. Beckett, Cole Hatch Farm, Penn. Mr. Amersham took 1st, with fine Perfection Tomato, Autumn Giant Cauliflower, Chancellor Potato, &c.; Mr. J. Waite, Glenhurst Gardens, Esher, being a close 2nd, with good Leeks and Tomatos.

For twelve dishes of vegetables, Mr. W. Pope, gr. to the Earl of Carnarvon, Highclere Castle, Newbury, was placed 1st in a large and close competition, having excellent Sprouts, Reading Exhibition Leeks, Carrots, Tomatos, and Celery; 2nd, Mr. R. Lye, gr. to W. H. Kingsmill, Esq., Sydmoncton Court, Newbury, with Carrots, Globe Artichoke, Celery, Onions, and Cucumbers, as his best dishes.

For the twelve dishes in competition for the Turner Memorial prize, Mr. C. J. Waite led in a very good competition, having a very fine lot, the strong features being Cardoons and Celery, Turnips, Tomato Reading Perfection, Autumn Giant Cauliflower, and Prizetaker Leeks: a very fine collection. Mr. J. Lambert, gardener to Colonel Wingfield, Onslow, Shrewsbury, was a very close 2nd, having enormous Cauliflowers (fine), Tomatos and Carrots.

Globe Artichokes, Celery and Parsnips. All the articles shown by him were of large size and clean. 3rd, Mr. W. Pope, with a close clean lot.

Mr. A. Waterman, gr. to H. A. Brassey, Esq., Preston Hall, Aylesford, Kent, was first for a collection of vegetables arranged for effect, having fine produce, the roots being very good.

MISCELLANEOUS.

A collection of Apples from trees on the Paradise stock came from Messrs. J. Laing & Sons, Forest Hill, S.E., numbering in all forty-two dishes; and from the same firm there was sent a collection of cut flowers of tuberous Begonias.

Messrs. H. Cannell & Sons, Swanley, Kent, contributed a group of tuberous Begonias in pots, making a good display of colour.

Messrs. Sutton & Sons, Reading, had a collection of about twenty dishes of Potatos, and also specimens of the new vegetable, Stachys tuberifera, showing its free production of tubers.

Ornamental Gourds, Pumpkins, &c., were well shown by Mr. C. Osman, gr. at the South Metropolitan District Schools, Sutton, who took the chief prize for them.

NOTICES TO CORRESPONDENTS.

BLUE ROSES: *American Correspondent.* Inquiries have been made as to this, and we are promised specimens next season! Meantime, as there are at least twenty genera to which the name Rose is popularly applied, it is charitable to suppose that the blue Rose is one of the twenty, and not a true Rose at all. That is the only explanation we can give. A true blue and a true Rose would be worth its weight in gold.

BOOKS: *G. M. Native Flowers of New Zealand* (Messrs. Sampson Low, Marston & Co., Fleet Street, E.C.); *Garden and Forest* (Tribune Building, New York).—*G. C. P. Dictionary of Gardening* (L. Upcott Gill, 170, Strand, W.C.); *Propagation and Improvement of Cultivated Plants*, by F. W. Burbidge (Blackwood & Sons); *Die Kunst der Pflanzen-Vermehrung*, by M. Neumann (Bernhard F. Voigt, Weimar.)

CHERRY LAUREL LEAVES: *J. C. B.* The appearances on the leaves sent are not due to any fungus, but to the action of the sun shining on the leaves when wet. By the way, is the Cherry Laurel (*Prunus Lauro-cerasus*) called Bay Laurel in your part of the world? The Bay Laurel, or Bay, is properly *Laurus nobilis*.

FUNGICIDE: *H. T.* We cannot discover the advertisement you allude to, and know nothing of the fertiliser of that name.

INSECTS: *J. R. H.* You would trap many by the use of short pieces of beanstalk stuck behind the branches of the fruit trees on the wall, and by bunches of dry hay placed on the ground at the foot of it, and kept rather close by being weighted with a board of 2 feet long. Every morning go to each beanstalk and blow out the insects therein, and remove the hay suddenly, and smash the insects found underneath it.

NAMES OF FRUIT: *R. H. T.* Oulin's Golden Gage. It is very late. When sending Plums to name, always send shoots and leaves when possible.—*W. Hopwood.* The dark fruit was smashed beyond recognition; the red fruit was Pond's Seedling.—*A. Barker.* Pear quite decayed.—*Carter, Page & Co.* Pear Bishop's Thumb.

NAMES OF PLANTS: *Rosa.* 1, *Brunia pinifolia*; 2, *Protea nana*; 3, *Cliffortia ruscifolia*.—*T. W. R.* 1, *Hypericum elatum*; 2, *Prunus semperflorens*.—*A. Reader.* *Eragrostis curvula*.—*A. L.* 7 and 9, *Campanula*; probably two garden hybrids, as we are unable to identify them; 8, *Medicago echinus*.—*F. W. B.* *Hoheria populnea*, New Zealand.—*H. J. C.* The plants seem, as you say, to be natives of Palestine. We will endeavour to give you the names next week.—*A. B. D.* *Heeria rosea*.—*G. H. P.* 1, *Polystichum angulare*; 2, *Aspidium coriaceum* (capense); 3, *Goniophlebium subauriculatum*; 4, *Polypodium Billardieri*; 5, indeterminate from sterile frond—send fertile frond; 6, *Onychium japonicum*; 7, *Nipholobus lingua*.—*Camjee.* *Smilax aspera*.

ROSES: *W. C. S.* We cannot undertake to name varieties of the Rose. Send to a large grower of the plants.

THE MURRAY PINE: *Coatbridge.* This is *Frenela verrucosa*, a tree allied to our Cypresses.

TOMATOS IN MANITOBA: *Correspondent.* In answer to your inquiry, we cite the following from Prof. Maccoun's *Catalogue of Canadian Plants*:—"Frequently spontaneous in gardens. Throughout Ontario Tomato seeds that have lain on the ground all winter vegetate in the spring, and are often transplanted. Spontaneous in one or two places near Halifax, N.S. (Lindsay). In this connection I may mention that Potato seeds always grow in the North-west after lying exposed on the surface of the ground all winter. While at Battleford, in the summer of 1879, I saw myriads of plants in an old Potato patch, and in October of the same year found the ground covered with Potato-balls (fruit), the seeds of which would certainly grow the next spring. I conclude from the above that both the Tomato and Potato are perfectly at home in Canada, and that in our North-west new varieties of Potatos will yet be produced that will supersede the diseased or weakened ones of the East."

COMMUNICATIONS RECEIVED.—W. H. Hall.—C. C. & Co.—J. W.—F. M. Glasnevin (very many thanks).—R. G.—E. Forgeot et Cie. Paris.—F. W. B.—G. H.—A. D.—W. T. St. Louis.—J. E. E.—S. A.—H. C.—G. M.—P. E. N.—W. S.—H. Bolus.—Peter Henderson.—U. D., Berlin.—Chambre Syndicale, Ghent.—W. Martin.—J. D.—Pteris.—W. M. G.—J. A. A.—D.—W. C. W.—W. B.—S. A.—H. D. (no paper came to hand).—H. W. Hayward.—U. D.—T. C.—G. W.—W. K.—R. W. A.

Obituary

ALEXANDER LINDSAY.—At Ditton Park Gardens, Slough, on Saturday night last, died Mr. Alexander Lindsay, for some thirty-five years Head Gardener at Ditton, and the faithful servant of the Dukes of Buccleuch, and till recently of the dowager Duchess of Buccleuch. The deceased's illness extended over a period of two months, but was happily unaccompanied by any considerable suffering. We hope to give some particulars of Mr. Lindsay's life next week.

THE WEATHER.

MEAN TEMPERATURE OBSERVED AT CHISWICK DURING THE WEEK ENDING OCT. 20. (AVERAGE OF FORTY-FOUR YEARS.)

Oct. 14	51°·3	Oct. 18	50°·0
" 15	51°·0	" 19	49°·8
" 16	50°·7	" 20	49°·5
" 17	50°·5	Mean for the week ...	50°·4

THE PAST WEEK.

The following summary record of the weather for the week ending Oct. 8, is furnished from the Meteorological Office:—

"The weather continued unsettled during the earlier days of the period, with falls of rain over our southern districts, and sleet or snow at our more northern stations. Towards the end of the week, however, the conditions improved, but fog or haze occasionally prevailed in some localities.

"The temperature has again been below the mean. Over southern, central, and eastern England the deficit has been as much as 11° or 12°, while in other parts of England it has been 9°, and over Ireland and Scotland 6° or 7°. The highest of the maxima, which were recorded on very irregular dates, ranged from 55° in 'England, N.E.' to 61° in 'Scotland, E.' On the first day of the period the maxima over south-eastern England were very low; at Cambridge the thermometer did not rise above 43°, and in London 45°. The absolute minima, which were registered either on the 3rd or 8th in most parts of England and on various dates over Ireland and Scotland, were very low for the time of year. Over the inland parts of England the thermometer fell to between 25° and 27°, and over Ireland and Scotland to between 26° and 29°. At Ingatestone on the 5th a thermometer on the grass fell to

17°, while the mean of the gross minima for the week was 21° 3'.

"The rainfall has been rather more than the mean in 'Scotland, N.', but less in all other districts.

"Bright sunshine has been more prevalent than it was last week, the percentage of the possible amount of duration having ranged from 27 in 'Scotland, E.', to 40 in 'England, S.W.', and 41 in 'England, E.'"

[Accumulated temperature indicates the combined amount and duration of the excess or defect of temperature above or below 32° F. for the period named, and is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.				
	Above or below the Mean for the week ending Oct. 8.	ACCUMULATED.			
		Above 42° for the Week.	Below 42° for the Week.	Above 42° difference from Mean since Jan. 3, 1888.	Below 42° difference from Mean since Jan. 3, 1888.
Principal Wheat-producing Districts.		Day-deg.	Day-deg.	Day-deg.	Day-deg.
0. SCOTLAND, N. ...	7 below	15	28	— 274	+ 240
1. SCOTLAND, E. ...	6 below	20	19	— 498	+ 182
2. ENGLAND, N.E. ...	9 below	20	30	— 543	+ 103
3. ENGLAND, E. ...	12 below	23	38	— 416	+ 191
4. MIDLAND COS. ...	11 below	23	40	— 519	+ 186
5. ENGLAND, S. ...	11 below	39	24	— 509	+ 227
Principal Grazing, &c., Districts.					
6. SCOTLAND, W. ...	7 below	32	15	— 393	+ 122
7. ENGLAND, N.W. ...	9 below	28	13	— 423	+ 130
8. ENGLAND, S.W. ...	9 below	39	15	— 509	+ 268
9. IRELAND, N. ...	6 below	33	7	— 323	+ 74
10. IRELAND, S. ...	7 below	38	11	— 327	+ 124
— CHANNEL ISLANDS	7 below	50	0	— 379	+ 154

DISTRICTS.	RAINFALL.		BRIGHT SUNSHINE.	
	More or less than the Mean for the Week.	No. of Rainy Days since Jan. 3, 1888.	Total Fall since Jan. 3, 1888.	Percentage of possible Duration for the Week.
Principal Wheat-producing Districts.	Tenths of Inch.		Ins.	Percentage of possible Duration since Jan. 3, 1888.
0. SCOTLAND, N. ...	3 more	179	29.2	31
1. SCOTLAND, E. ...	3 less	155	21.9	27
2. ENGLAND, N.E. ...	2 less	144	20.6	38
3. ENGLAND, E. ...	2 less	50	19.6	41
4. MIDLAND COS. ...	6 less	135	19.0	38
5. ENGLAND, S. ...	1 less	138	20.5	37
Principal Grazing, &c., Districts.				
6. SCOTLAND, W. ...	7 less	147	30.3	38
7. ENGLAND, N.W. ...	3 less	149	21.8	32
8. ENGLAND, S.W. ...	6 less	153	25.5	40
9. IRELAND, N. ...	1 less	157	27.4	28
10. IRELAND, S. ...	6 less	138	26.7	30
— CHANNEL ISLANDS	1 less	168	22.6	37

MARKETS.

COVENT GARDEN, October 11.

MARKET quiet; no alteration. James Webber, Wholesale Apple Market.

FRUIT.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Apples, half-sieve ... 2 0-4 8	Peaches, dozen ... 2 0-8 0
Cobs, 100 lb. ... 65 0-7 0	Pine-apples, Eng., lb. 1 6-2 0
Grapes, per lb. ... 1 0-2 6	Plums, half-sieve ... 2 6-4 8
Lemons, per case ... 12 0-21 0	— St. Michael, each 2 0-5 0
Melons, each ... 1 0-3 0	

VEGETABLES.—AVERAGE RETAIL PRICES.

s. d. s. d.	s. d. s. d.
Artichokes, p. doz. ... 4 0- ...	Mustard and Cress, punnet ... 0 4- ...
Beans, Kidney, lb. ... 0 4- ...	Onions, per bunch ... 0 5- ...
Beet, red, per dozen 1 0-2 0	Parsley, per bunch ... 0 4- ...
Carrots, per bunch ... 0 6- ...	Potatoes, per cwt. ... 4 0-5 0
Cauliflowers, each ... 0 3- ...	... kidney, per cwt. ... 4 0-5 0
Celery, per bundle ... 1 8-2 0	Shallots, per lb. ... 0 6- ...
Cucumbers, each ... 0 6-0 9	Spinach, per bushel ... 2 0- ...
Endive, per dozen ... 2 0- ...	Tomatoes, per lb. ... 0 9-1 0
Green Mint, bunch ... 0 4- ...	Turnips, per bunch, new ... 0 5- ...
Herbs, per bunch ... 0 4- ...	Vegt. Marrows, each 0 1 1/2 ...
Leeks, per bunch ... 0 4- ...	
Lettuce, per dozen 1 6- ...	
Mushrooms, punnet 2 6- ...	

POTATOS.—Myatt's finished, Beauty of Hebron, 70s. to 80s. Regents, 70s. to 90s.; and Magnums, 70s. to 80s. per ton.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Aralia Sieboldi, doz. 6 0-18 0	Ferns, in var., doz. 4 0-18 0
Asters, per dozen ... 6 0-9 0	Foliage plants, various, each ... 2 0-10 0
Chrysanthemums, doz. 4 0-9 0	Ficus elastica, each 1 6-7 0
— large plants, each 2 0-4 0	Fuchsias, doz. ... 3 0-6 0
Cockscombs, per doz. 3 0-6 0	Heliotropes, dozen ... 3 0-6 0
Coleus, dozen ... 2 0-4 0	Hydrangeas, dozen ... 9 0-18 0
Cyperus, per dozen 4 0-12 0	Liliums, var., doz. ... 18 0-30 0
— terminalis, per dozen ... 30 0-60 0	Marguerites, doz. ... 6 0-12 0
— viridia, per doz. 12 0-24 0	Mignonette, 12 pots 3 0-6 0
Ericas in var., doz. ... 9 0-18 0	Palms in var., each 2 6-21 0
Euonymus, in var., per dozen ... 6 0-18 0	Pelargoniums, scarlet, per dozen ... 2 0-6 0
Evergreens, in var., per dozen ... 6 0-24 0	Primulas, per dozen 4 0-6 0
	Solanums, dozen ... 9 0-15 0

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Abutilons, 12 bun. ... 3 0-6 0	Marguerites, 12 bun. 3 0-6 0
— French, per bun. 1 6-2 6	Mignonette, 12 bun. 2 0-4 0
Bouvardias, per bun. 0 6-1 0	Pelargoniums, 12 spr. 1 0-1 6
Camellias, 12 blms. 3 0-4 0	— scarlet, 12 spr. ... 4 0-8 0
Carnations, 12 blms. 2 0-3 0	Primulas, double, 12 sprays ... 1 0-1 6
Chrysanthemums, 12 blooms ... 0 6-3 0	Pyrethrums, 12 bun. 2 0-4 0
— dozen bunches ... 9 0-18 0	Roses, Tea, per doz. 1 0-3 0
Eucharis, per dozen 4 0-8 0	— coloured, dozen. 2 0-4 0
Gardenias, 12 blooms 3 0-6 0	— red, per dozen ... 0 6-1 0
Gladiolus, doz. sprays 1 6-3 0	Safrano, dozen ... 1 0-2 0
Heliotropes, 12 spr. 0 6-1 0	Stephanotis, 12 spr. 4 0-6 0
Lilium longiflorum, 12 blooms ... 4 0-6 0	Tuberose, 12 blms. ... 0 6-1 0
— lancifolium, 12 bl. 1 0-3 0	Violets, 12 bunches ... 1 0-2 0
Lapageria, 12 blooms 1 0-2 0	— dark, Fr., bunch 1 6-2 0
	— Parme, Fr., bun. 3 0-4 0

** The sudden and severe frost (for the season) has considerably altered the prices for the time, many outdoor useful flowers being cut off, so that indoor flowers at the present time do not meet the demand.

SEEDS.

LONDON: Oct. 10.—Messrs. John Shaw & Sons, seed merchants, of 37, Mark Lane, E.C., report an active business passing in Clover seeds at still advancing rates. Some strong German buying has materially driven up the prices of American red. In Alsike, white, and Trefoil, the late rise is more than sustained. Perennial and Italian Rye-grasses keep firm. Winter Tares are in good request on former terms. Seed Rye is steady. There is no change in either Mustard or Rape seed. Blue Peas, with a brisk inquiry, are considerably dearer. The new Haricots show fine quality, and sell at moderate figures. For bird seeds the sale is small.

FRUIT AND VEGETABLES.

STRATFORD: Oct. 9.—Supply has been good during the past week, and a fair trade was done at the following prices:—Cabbages, 2s. to 3s. per tally; Turnips, 30s. to 40s. per ton; Carrots, household, 35s. to 40s. do.; do., cattle feeding, 25s. to 34s. do.; Mangels, 16s. to 20s. do.; Swedes, 18s. to 22s. do.; Onions, Dutch, 3s. to 4s. per bag; Apples, English, 3s. 6d. to 7s. per bushel; Watercress, 6d. per dozen; Pears, 3s. to 5s. 6d. per bushel; Walnuts, 9s. to 10s. per bag; do., 15s. 6d. to 17s. per sack; Tomatoes (Bordeaux), 9d. per small box; do., 3s. per large box; Damsons, 3s. 6d. per half-sieve; Plums, 2s. per molly; do., 3s. 3d. per sieve.

POTATOS.

BOROUGH AND SPITALFIELDS: Oct. 8.—Moderate supplies and steady trade for best samples, but inferior very unsaleable, even at low prices. Regents, 60s. to 100s.; Hebrons, 60s. to 90s.; Early Roses, 50s. to 80s.; Magnum Bonums, 50s. to 100s. per ton.

SPITALFIELDS: Oct. 10.—Quotations:—Magnums, 55s. to 70s.; Imperators, 65s. to 75s.; Early Rose, 60s. to 70s.; English Regents, 65s. to 75s.; do., kidneys, 60s. to 70s.; Beauty of Hebron, 75s. to 80s.; and Champions, 55s. per ton.

STRATFORD: Oct. 9.—Quotations:—Magnums, lightland, 60s. to 80s.; do., darkland, 50s. to 60s.; Regents, 60s. to 80s.; Beauty of Hebron, 60s. to 80s. per ton.

E. P. DIXON & SONS

BEG TO OFFER

RASPBERRY FOR COMING SEASON.

2s. 6d. per doz., 15s. per 100 for Planting Canes.

4s. per dozen, 21s. per 100 for Fruiting Canes.

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THE YORKSHIRE SEED ESTABLISHMENT, HULL.

Dutch Bulbs Direct from the Growers. ANT. ROOZEN AND SON'S CATALOGUE for 1888, containing details of their immense Collections of New, Rare, and fine Bulbs and Plants (86 pages in English) is now ready, and will, as usual, be sent post-free, on application to themselves or their Agents, Messrs. MERTENS AND CO., 3, Cross Lane, St. Mary-at-Hill, London, E.C., from whom also can be obtained. ANT. ROOZEN AND SON'S New Work, "Notes on the Cultivation of Dutch and Cape Bulbs." Price 1s., Post-free.

MR. DODWELL'S GRAND CARNATIONS. —The finest grown. 5000 Unblighted Seedlings, warranted of the highest parentage; unrivalled whether for bedding or forcing for spring flowering. 3s. 6d. per doz.; 21s. per 100. Special terms for quantities. Particulars on application. The Cottage, Stanley Road, Oxford.

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FOR OUT & INDOOR CULTURE.

Large Collections of all the very Best Varieties of HYACINTHS, TULIPS, CROCUSES, NARCISSI, LILIES, SNOWDROPS, &c.

Only the very best kept in stock. Prices extremely moderate.

Illustrated Descriptive Catalogue (No. 348) POST FREE ON APPLICATION.

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The Royal Nurseries & Seed Establishments, Chester.

SAVE HALF THE COST.

GARSDIDE'S BEDFORDSHIRE SILVER SAND, Coarse and Fine.

Is admitted by the leading Nurserymen to be the Best Quality obtainable in the Trade.

Consumers should Buy Direct from the Owner of these Celebrated and Extensive Pits, which contain a practically inexhaustible supply of Silver Sand, and thus save half the ordinary cost. NO TRAVELLERS OR AGENTS. Apply direct to the Proprietor for Samples and Price.

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SULPHIDE of POTASSIUM (Harris).—A certain cure for Mildew on Plants, Red Spider, Aphid, &c. Enough to make 32 gallons of solution, free for 1s. 3d. The only kind to use is "Harris's specially prepared Sulphide of Potassium." Sole Manufacturers:—PHILIP HARRIS AND CO. (Limited), 9, Bull Ring, Birmingham.

PEAT.—The best in England. First and Second Class. For sale in any quantity. By railway truck load, loose, in casks, or sacks.

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COCOA-NUT FIBRE REFUSE, newly made.

Truck-load, (2 tons) 20s.; in bags—20s., 14s.; 40, 25s. Free on to Rail. Cash with order. J. STEVENS AND CO., Cocoa-nut Fibre Merchants, Greyhound Yard, and 153, High Street, Battersea, S.W.

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Patronised by 16,000 of the Nobility, Gentry, and Clergy, for all kinds of OUTDOOR WORK, CONSERVATORIES, Greenhouses, Frames, &c.

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JUST ARRIVED—Per direct P. & O. Steamer "Peshawur,"

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BUYERS OF LILIUM AURATUM SHOULD OBTAIN SAMPLES AND
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ROSES IN POTS and OUT-OF-DOOR ROSES.

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RESPECTFULLY INVITE ORDERS FROM THEIR LARGE STOCK OF

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STANDARD ROSES, of kinds specially selected for the purpose.

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The carefully prepared CATALOGUE is now ready.

Almost every 1st Prize for Pot Roses in London, Manchester, and York, and the National Rose Society, 92 Cut Roses at Darlington, and the York, Bath, Canterbury Premier 1st Prizes have been taken by the Firm. Fifty 1st Prizes in 1888.

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FUMIGATING PAN

Is vastly superior to any other.

Price 6/6 (in iron with heater) each,
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BEESON'S MANURE.—The Best and Cheapest Fertiliser for all purposes. Write for Circular containing the Leading Gardeners' and Market Growers' Reports. Sold in Tins, 1s., 2s. 6d., 5s. 6d., and 10s. 6d. each, or 1 cwt. Bags, sealed, 13s. By all Seedsmen, or apply direct to W. H. BEESON, Carbrook Bone Mills, Sheffield.

PEAT for ORCHIDS,

AZALEAS, HEATHS, FERNS, RHODODENDRONS, &c.
The Best in the World.

A. JOHNSON AND CO., 23, Leadenhall Street, London, E.C., continue to receive the highest of testimonials (unsolicited) from large Orchid Growers, stating the ORCHID PEAT supplied by A. J. & Co. is by far the best they have ever used. Samples can be seen at above address, or forwarded on application free of charge.

CONTRACTORS TO HER MAJESTY'S WAR DEPARTMENT.

THE THAMES BANK IRON COMPANY

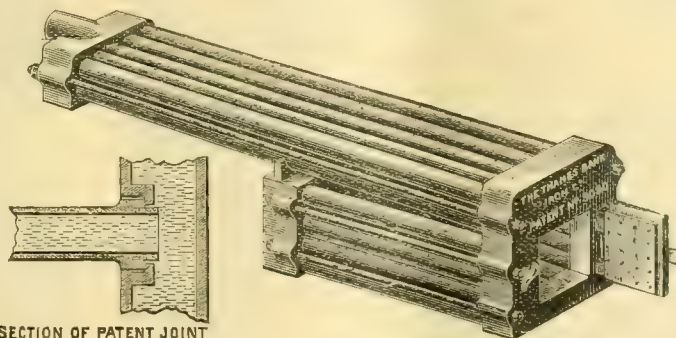
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Have now pleasure in bringing to the notice of Horticulturists and Gardeners generally their

NEW PATENT (No. 9090, 1888) HORIZONTAL TUBULAR BOILER,

WHICH IS WITHOUT DOUBT THE BEST ALL ROUND BOILER IN THE MARKET.

It combines all the advantages of its class so well known, and by the improved method of forming the joints—viz., with India-rubber Washers—**THE OLD AND TOO OFTEN INEFFECTUAL WAY OF CAULKING THE JOINTS IS ENTIRELY DISPENSED WITH.**



SECTION OF PATENT JOINT

It can be erected in a few hours, and may be relied upon as a thoroughly sound and good Hot-water Generator. It has been carefully tested in every possible way, more especially with regard to power and durability, and the result has been highly satisfactory.

**THE LARGEST AND MOST COMPLETE STOCK OF
HOT-WATER BOILERS OF EVERY DESCRIPTION,
PIPES, CONNECTIONS, VALVES, VENTILATING GEAR, &c.**

Inspection Invited.

Price List Free on Application.

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CHOICE PLANTS, FERNS, HEATHS, AZALEAS, &c.

EPPS & CO. are now prepared to offer PEAT, as above, of first-class quality, at lowest prices. Send for Samples, Price List and Testimonials. DEPOT for HORTICULTURAL SUNDRIES, LOAM, SAND, LEAF-MOULD, SPHAGNUM, COCOA FIBRE REFUSE.

PEAT MOSS LITTER.
EPPS & CO., Ringwood, Hants.

CERTAIN SUDDEN DEATH

To all Grubs, Aphids, Lice, Red Spider, Thrip, Mealy Bug, Caterpillars, &c., &c.

PERFECTLY } to the Hands and Skin, but will cure
HARMLESS } Ringworm in Animals, and all diseases
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FIR TREE OIL

(SOLUBLE) INSECTICIDE

A combination of Hydrocarbon Oils, made soluble in Water, for destroying ALL INSECTS & PARASITES that infest Trees and Plants, whether at the Roots or on the Foliage.

Sold by Seedsmen and Chemists, 1s. 6d., 2s. 6d., & 4s. 6d.; 7½ gallon 7s. 6d., 1 gallon 12s. 6d., or less in larger quantities.

A Treatise on FIR TREE OIL as an INSECTICIDE. Its application to Plants and Animals, sent Post free on receipt of address, by the Manufacturer.

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Half a wineglass-full of Fir Tree Oil to 10 gallons of water for steeping, and the same quantity to an ordinary size boiler for boiling, with half the usual quantity of household soap, will do the work splendidly, and with half the trouble.

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CHUBB'S "PERFECT" FERTILIZER (the Best Food for all kinds of Plants, Flowers, Fruits, Vegetables, &c. ... Tins, 7lb. 14lb. 28lb. 56lb. 1cwt. 1/6 3/- 5/- 8/- 14/- 22/-

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RUSSIAN MATS, BAMBOO CANES, PERUVIAN GUANO, NITRATE OF SODA, HORTICULTURAL CHARCOAL, &c.

PEAT MOSS LITTER, cheapest and best Bedding for Horses and Cattle, 4s. per ton. Extra large Sample Bales, 6s. each.

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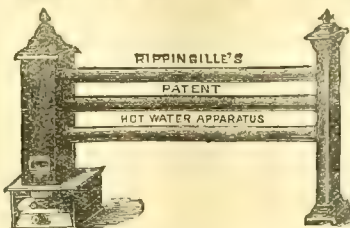
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GISHURST COMPOUND, used by leading Gardeners since 1859 against Red Spider, Mildew, Thrips, Green Fly, and other Blight. 1 to 2 ounces to the gallon of soft-water; 4 to 16 ounces as winter dressing for Vines and Orchard-house Trees; and in latter from the cake against American Blight. Has outlived many preparations intended to supercede it. Boxes, 1s., 3s., and 10s. 6d.

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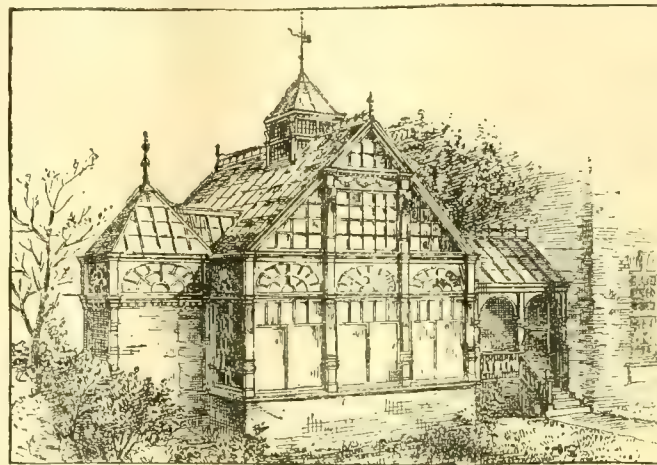
FOR GREENHOUSES, CONSERVATORIES, &c.

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ODOURLESS, SMOKELESS, PORTABLE, SAFE, AND CLEANLY. Will burn from 18 to 20 hours without attention, and are so simple a child can manage them. Manufactured of the BEST MATERIAL, carefully tested, and WARRANTED SOUND. Price from 21s. each.

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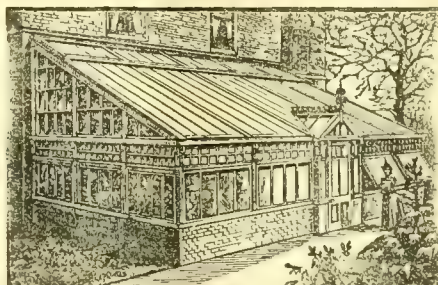


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8s. 6d. per 100 feet 15 oz. 12x10, 18x12, 18x14, 24x14, 14x12, 20x12, 18x16, 24x16, 16x12, 16x14, 20x16, 24x18, &c.

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SMITHFIELD IRONWORKS, LEEDS, AND SURREY WORKS, BLACKFRIARS ROAD, LONDON, S.E.,

HORTICULTURAL ENGINEERS to HER MAJESTY THE QUEEN, call Special Attention to their Patent Wrought-Iron Municipal or Angular Chambered and Tubular

HOT-WATER BOILERS,

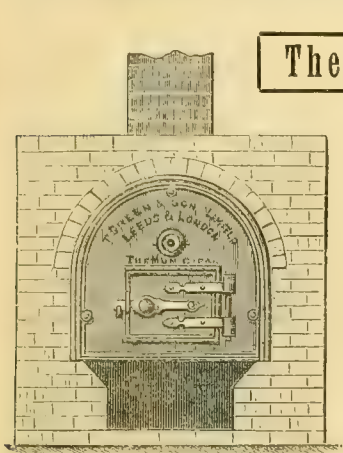
And others with SHELVES, and Hollow or Ordinary Cast-iron GRATE BARS.

SADDLE BOILERS, With WATERWAY BACKS and WELDED BOILERS, any of which are specially adapted for Heating Greenhouses, Conservatories, Churches, Chapels, Schools, Public Buildings, Entrance Halls, Warehouses, Workshops, &c. They are the neatest, cheapest, most effective, and durable of any extant.

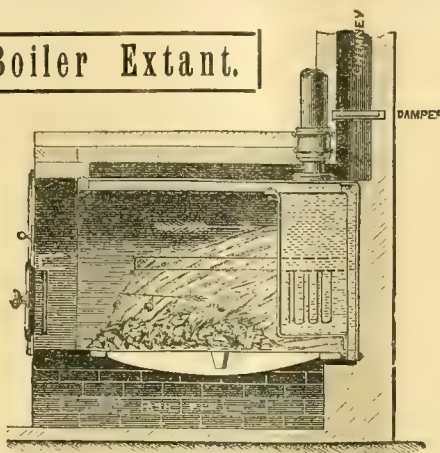
The MUNICIPAL and TUBULAR ones are remarkable for their great heating power, slow combustion, and the length of time the fire will burn without requiring attention.

These Patterns secured the FIRST and HIGHEST PRIZE—a SILVER MEDAL—at the Royal Horticultural Society's Exhibition, South Kensington, London June 1 1881.

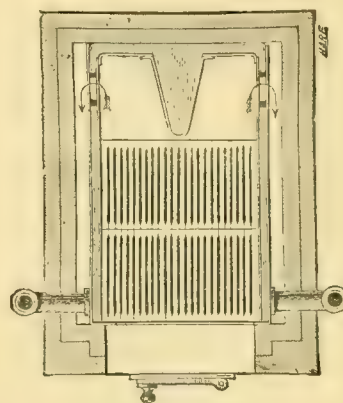
The Best Boiler Extant.



— FRONT ELEVATION —



— LONGITUDINAL SECTION —



SECTIONAL PLAN

The longitudinal section gives a view of the fire-box, water space, flues, &c. The cross section gives a view of the fire box, water space and V-shaped back. The front elevation shows it set in brickwork, which is necessary for this class of boiler.

SIZES AND PRICES.

	MB 1	3 ft. 2 in. long by 2 ft. 0 in. wide by 2 ft. 0 in. deep		1000 ft.	Price	£15 0 0
	MB 2	4 0 " by 2 0 " by 2 0 "		1280	"	21 0 0
	MB 3	5 0 " by 2 3 " by 2 6 "		2200	"	32 0 0
	MB 4	6 6 " by 3 0 " by 3 0 "		4000	"	60 0 0
	MB 5	8 6 " by 4 0 " by 3 9 "		7000	"	85 0 0

Calculated to heat 4-in. piping as follows.—

TESTIMONIALS.

MESSRS. THOS. GREEN AND SON, LTD., NORTH STREET, LEEDS.

Re HEATING APPARATUS.

Borough Engineer's Office, Municipal Buildings, Leeds, January 9, 1886.

GENTLEMEN,—I have great pleasure in bearing testimony to the efficiency and satisfactory working of the Hot-water Heating Apparatus you erected in these public buildings. The buildings are four storeys high, and we have a total length of about 28,000 feet of piping in them, varying in size from 1½ in. to 6 in. diameter, with their connections, &c. The several offices and rooms can all be in operation at one time or separately, and the heat regulated by means of the valves to the temperature required, even in the coldest weather.

Two of your Patent Pattern Boilers, No. 4, work the whole of this piping easily, although we have three of them fixed. They are very powerful and economical in the consumption of fuel, and I am pleased to be able to report of them and the apparatus so favourably.

I am, Gentlemen, yours truly, THOS. HEWSON, Borough Engineer.

GENTLEMEN,—The large Municipal Boiler which you sent me last year is doing its work satisfactorily; it is heating 5,000 feet of 4-inch pipe in one of my vineries, and I am quite sure that it has power to work a much greater length, while in cost of fuel it compares favourably with my other Boilers.

I have now five of your Boilers in use, and I cannot speak too well of their heating powers, or their comparatively small consumption of fuel.

Morley House, Bagot, St. Saviour's, Jersey, November 10th, 1886.

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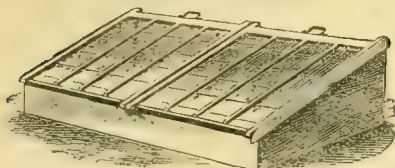
Yours faithfully,

(Signed) G. W. BASHFORD.

AND HUNDREDS OF OTHER REFERENCES CAN BE GIVEN IF REQUIRED.

BOULTON & PAUL, HORTICULTURAL BUILDERS.

Our 8 by 6 feet
2-LIGHT MELON AND CUCUMBER FRAMES



are £3 each, carriage paid.

Made of the best red deal, English 21-oz. glass, painted 3 coats best colour.

3-LIGHTS, 12 by 6 feet, £4 5s.

For other sizes, see NEW PRICE LISTS, Post-free.

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HORTICULTURAL GLASS,

GLASS BELLS, &c.

ROCHEZ-VANDER ELST,

Charleroi, Belgium.

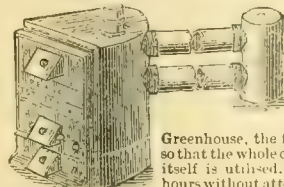
Agents: H. PUCKERT AND CO., 110, Cannon St., London, E.C.

PATENT TUBULAR FLOWER STANDS

for Artistic Grouping of Cut Flowers. Have attracted much attention at recent Horticultural Exhibitions.

Manufactured and Sold by GEORGE SMITH AND CO., Commercial Road, Pimlico, S.W. Trade supplied.

THE LOUGHBOROUGH GREENHOUSE HOT-WATER APPARATUS.



This is the simplest, cheapest, and most powerful apparatus made. It requires no brick setting, no stoke-hole, and no hot-water fitter for fixing. The Boiler stands in the

Greenhouse, the front only being outside, so that the whole of the heat from the Boiler itself is utilized. It burns over twelve hours without attention, at a nominal cost. Price, as engraving, with Boiler, open feed syphon, 12 ft. of 4-inch hot-water pipe, and patent joints, complete, £1 1s. Delivered free to any station. Discount for cash.

Cost of apparatus COMPLETE for Greenhouses as below, delivered free, with pipes cut and fitted ready for fixing.

ft.	ft.	ft.	ft.	ft.	ft.	ft.	ft.	ft.	ft.	ft.	ft.	ft.	ft.	ft.	ft.	ft.	ft.	ft.	ft.
10	6	10	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
12	8	12	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18

Proportionate prices for other sizes. Estimates free. Illustrated List, with full particulars of these and every description of Fuel, Gas, and Oil Heating Stoves free.

DEANE & CO.,

HORTICULTURAL BUILDERS AND HOT WATER ENGINEERS,

46A, King William Street, LONDON BRIDGE.

To Nurserymen, Seed Merchants, and Florists.

J. BLACKBURN AND SONS are offering Arch-

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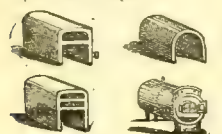
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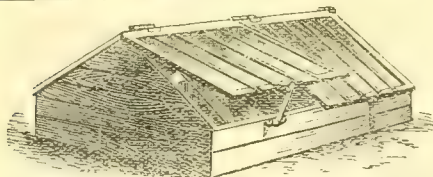
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Mr. THOMAS DOWN, late of Headington Hill Hall Gardens, Oxford, has been appointed Head Gardener to the Right Hon. Lord CLONCURRY, Lyons, Hazelhatch, co. Kildare.

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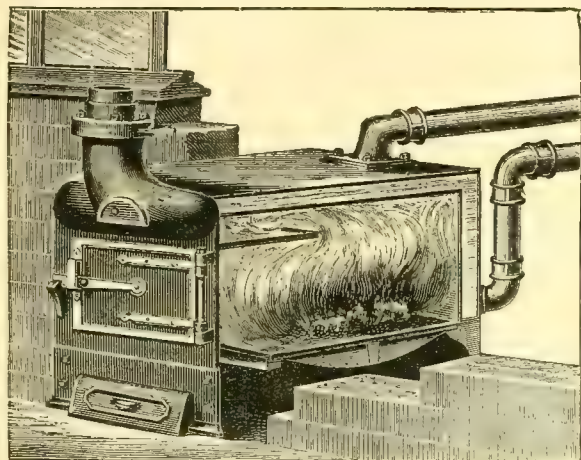
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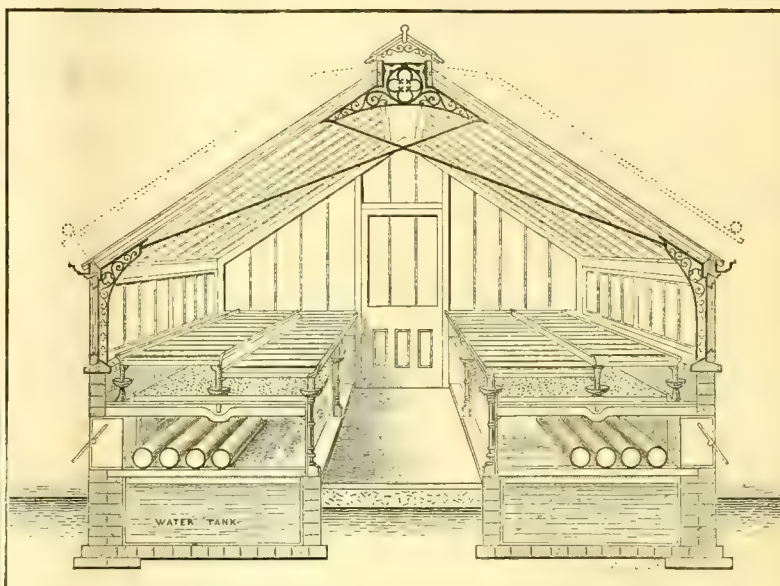
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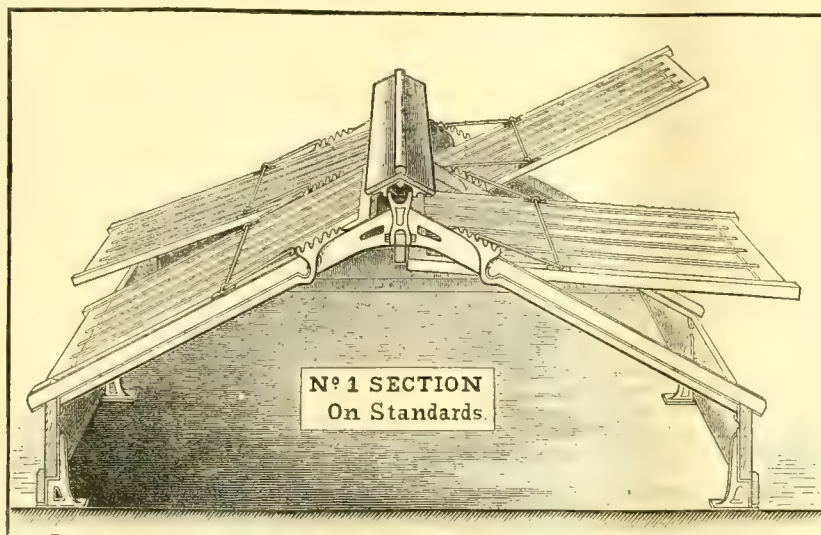
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Section No. 1.

	6 ft. wide.	8 ft. wide.
ft.	£ s. d.	£ s. d.
8..	6 6 0	8 2 0
12..	8 3 0	10 10 0
16..	10 0 0	12 15 0
20..	12 3 0	15 10 0
24..	14 6 0	18 3 0
28..	16 10 0	20 17 0
32..	18 12 0	23 10 0
36..	20 16 0	26 5 0
40..	22 19 0	28 18 0
44..	25 2 0	31 12 0
48..	27 5 0	34 7 0
52..	29 8 0	37 0 0

SPAN FRAME

For Brick Walls,
 WITH LANTERN
 VENTILATOR.

Section No. 2.

	6 ft. wide.	8 ft. wide.
£ s. d.	£ s. d.	£ s. d.
4	10 0	5 15 0
6	0 0	7 10 0
7	7 6	9 5 0
9	2 0	10 19 0
11	0 0	13 2 0
12	16 0	15 5 0
14	12 0	17 8 0
16	8 0	19 12 0
18	5 0	21 16 0
20	0 0	23 19 0
21	18 0	26 3 0
23	15 0	28 6 0

Frames 1/6 per foot less without Ridge Ventilator.

TERMS:—*Nett Cash on delivery.*
Package Free.

Full PRICE LISTS on application.

FOSTER & PEARSON, BEESTON, NOTTS.

The GARDENERS' CHRONICLE

ESTABLISHED 1841.

No. 2495.

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SERIES.

SATURDAY, OCTOBER 20, 1888.

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{WITH SUPPLEMENT. {POST-FREE, 3½d.

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ILLUSTRATION.

Dragon trees in Madeira. (Supplement.)

ROYAL BOTANICAL and HORTICULTURAL SOCIETY of MANCHESTER.
An EXHIBITION of APPLES, PEARS, &c., will be held in the Gardens on OCTOBER 24, and three following days. For Schedules, &c., apply to the undersigned.

Royal Botanical Gardens, Manchester.

KINGSTON and SURBITON CHRYSANTHEMUM SOCIETY.

The TWELFTH ANNUAL EXHIBITION will be held in the Drill Hall, Kingston, on TUESDAY and WEDNESDAY, November 6 and 7, 1888, when, in addition to valuable Money Prizes, the Fifth Champion Challenge Vase, value 25 guineas, will be offered. Entries Close November 1. Schedules and other information of

G. WOODGATE.
Warren House Gardens, Kingston Hill, Surrey.

NATIONAL CHRYSANTHEMUM SOCIETY.—GRAND FÊTE and EXHIBITION.

Royal Aquarium, Westminster.
WEDNESDAY and THURSDAY, November 7 and 8.
Schedules (free) of

WILLIAM HOLMES, Hon. Sec.
Frampton Park Nurseries, Hackney, E.

BATH CHRYSANTHEMUM SHOW,

NOVEMBER 7 and 8, 1888. The Prizes include the Veitch Memorial Prize. For Prize Schedules, apply to

BEN. PEARSON, Sec., 14, Milsom Street, Bath.

WATFORD CHRYSANTHEMUM SOCIETY.

President—The Right Hon. The EARL of CLARENDON.

The THIRD ANNUAL EXHIBITION of CHRYSANTHEMUMS and other AUTUMN FLOWERS and FRUITS, will be held in the Agricultural Hall, Watford, on TUESDAY and WEDNESDAY, November 13 and 14, 1888, when Prizes to the value of ONE HUNDRED and TWENTY POUNDS will be competed for. Entries Close on Thursday, November 8. Applications for Membership, Schedule of Prizes, Entry Forms, &c., to be made to CHAS. R. HUMBERT, Hon. Sec. and Treas., Watford, Herts.

BIRMINGHAM and MIDLAND COUNTIES GREAT CHRYSANTHEMUM and FRUIT SHOW,

WEDNESDAY and THURSDAY, November 21 and 22. £25 Cash Prizes offered for Cut Blooms, £28 Cash Prizes offered for Grapes, and a great many other liberal Prizes in proportion. Schedule and all information can be had post-free on application to

J. HUGHES, Sec.
Northwood Villas, Metchley Lane, Harborne, Birmingham.

G. STEVENS, CHRYSANTHEMUM GROWER,
St. John's Nursery, Putney, begs to give notice that his HOME SHOW of CHRYSANTHEMUMS will be open to the General Public on MONDAY, October 22, to November 3. Admission free. No admission on Sunday.

SUTTON'S TULIPS for BEDDING.

SUTTON'S TULIPS for FORCING.

See

SUTTON'S BULB CATALOGUE,
containing descriptions, illustrations, and Priced List of the Best Bulbs of the Season.

SUTTON'S BULBS genuine only direct from SUTTON AND SONS, Reading.

Bulbs of Finest Quality only.

BARR'S BULB CATALOGUE for 1888,
Now Ready. Sent free on application.

Contains full Descriptive List of the best Hyacinths, Tulips, and other Dutch Bulbs in cultivation, also an interesting descriptive List of Cape and Californian Bulbs and Tubers, including many beautiful rarities.

BARR AND SON, 12 and 13, King Street, Covent Garden, W.C.

Begonias in Flower.

JOHN DOWIE (of the late firm of Downie & Laird) begs to intimate that his Grand Strain of the above is now in full flower. Inspection invited.
Seed from the above. 1s 6d. and 2s 6d. per packet.
Beechill Nursery, Edinburgh.

FOR SALE or EXCHANGE, 1 Large DAVALLIA MOOREANA, 1 Large CROTON HANBURYANUM. For particulars apply to

R. DOVER, The Gardens, High Leigh, Hoddesdon, Herts.

Surplus Cut Flowers.

HOOPER AND CO. (Limited) RECEIVE and DISPOSE of any quantity of above at best Market Prices. Boxes, &c., supplied. Address, Commission Department, HOOPER AND CO. (Limited), Covent Garden, W.C.

SQUELCH and BARNHAM,
North Row, Covent Garden, W.C., are OPEN TO DISPOSE OF any quantity of MUSCATS and BLACK GRAPES, TOMATOS, CUCUMBERS, FRENCH BEANS, STRAWBERRIES, CHOICE FLOWERS, &c. Highest Market Prices obtained. Account Sales daily; cheques weekly, or as preferred by Sender. Baskets and Labels supplied. References given.

CHOICE FLOWERS and FRUIT.
Highest Market Prices guaranteed.

HENRY RIDES (late W.C. & Rides), Fruit and Flower Salesman, Covent Garden, W.C.

MESSRS. GREGORY and EVANS,
NURSERYMEN, Sidcup, and 285, 286, 287, 288, Flower Market, Covent Garden, London, W.C., are open to RECEIVE CONSIGNMENTS of CHOICE CUT FLOWERS in any quantity for their Commission Department. Boxes and Labels supplied. Telegraph Address—"COMMISSION, SIDCUP."

WANTED, CUT WHITE BLOOM in any quantity. Good prices sent per return.
G. PHIPPEN, F.R.H.S., Reading.

WANTED, STEPHANOTIS, EUPHARIS, ORCHIDS, ROSES, CHRYSANTHEMUMS, and other CHOICE CUT FLOWERS. Best Market Prices returned. Address S. HILL, Jun., 21, Charlotte Street, Fitzroy Square, W., and Covent Garden Flower Market, W.C.

WANTED, GERANIUM CUTTINGS, of Jacoby, Ve-uivus, Brighton Gem, &c.—State price per 100, to S. PROCTOR, 165, Barry Road, East Dulwich, S.E.

WANTED, 1000 PINUS INSIGNIS, good trees, about 2 feet high. Apply, stating price, to J. MACKINNON, Kylesmore, Galway, Ireland.

WANTED, a good Plant of ALBA-PLENA CAMELLIA. Well set. Lowest price.
W. AND J. BROWN, Stamford.

WANTED, GARDEN STOCK:—5 dozen CONIFERS and EVERGREENS, 6 dozen flowering TREES and SHRUBS, 2 dozen hardy FRUIT TREES (Standards), 9 dozen FRUIT BUSHES and DWARFS. Delivered into Grounds, at Bromley, Kent. Address to A. Z., 40, Overton Road, Brixton, S.W.

WANTED, the following Numbers of the GARDENERS' CHRONICLE for 1876:—121, 122, 124, 128, 127, 129, 132, 135, 138, 141, 147, 149, 150, 151, 153, 154, 155, and 158.—Please state price to W. M., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

GNAPHALIUMS (IMMORTELLES).—A large consignment to hand, all colours, from J. & F. BREMOND, Fils, Orléans.—Samples and price on application to WILLIAM DENMAN, 7, Catherine Street, Covent Garden, W.C.

CREEPERS FOR WALLS.—By planting what is suitable, an ugly object may easily be made beautiful. Most being in pots, can be sent and put out at any time. Descriptive LIST and advice Free.—RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

RHODODENDRON PONTICUM, very bushy, 12 to 18 inches, £3 per 1000; 9 to 12 inches, £2 per 1000, stocks, strong, £3 15s. per 1000.
GRAY, SONS, Brox Nursery, Chertsey, Surrey.

Myosotis alpestris Queen Victoria.

W. THOMPSON, SEEDSMAN, Tavern Street, Ipswich, begs to offer nice Plants of the above, pretty and distinct new *Fragaria* Not, from selected stock, all of which has flowered, at 4s. per dozen, or 25s. per 100. Should be planted at once.

TREES and SHRUBS for the Sea Coast.
CATALOGUE free on application.—RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

ORCHIDS.—Cheap, a small and choice Collection, some rare, of cool and warm-house Orchids, in perfect health; many showing for bloom. Lists returnable.
MR. STAMPER, Ulverston, Lancashire.

Roses, Fruit Trees, &c.

CHARLES TURNER'S Autumn CATALOGUE, containing full collections of Roses, Fruit Trees, Conifers, and all kinds of Hardy Trees and Shrubs, is now ready, and may be had free on application.
The Royal Nurseries, Slough.

SPECIMEN and HALF-SPECIMEN STEPHANOTIS, free-flowering variety, very fine stuff, 10 to 12 feet; also 25,000 AUCUBAS, all sizes. For particulars apply to G. SMITH, Dell Nursery, Rock Ferry, Cheshire.

DICKSON'S IMPROVED MUSHROOM SPAWN, most superior, now reduced to 5s. per bushel of 14 cakes. Circular with Cultural Notes and List of Testimonials post-free on application.
DICKSONS (Limited), The Royal Seed Warehouse, CHESTER.

TURF.—Finest quality, for Tennis Lawns, &c., delivered free within 5 miles or on rail at 10s. per 100.

Superior Top-spit TURFS for Potting, Vine Borders, &c., 10s. per ton.

J. J. KEEVIL, Merton Hall Road, Wimbledon.

SULPHIDE of POTASSIUM (Harris).—A certain cure for Mildew on Plants, Red Spider, Aphids, &c. Enough to make 32 gallons of solution, free for 1s. 3d. The only kind to use is "Harris's specially prepared Sulphide of Potassium." Sole Manufacturers:—PHILIP HARRIS and CO. (Limited), 9, Bull Ring, Birmingham.

THOMSON'S IMPROVED VINE and PLANT MANURE.—This valuable Manure is made only by us. Every bag and tin has our name on it. To be had of all Nursery and Seed-men, and direct from us. 1 cwt. and over carriage paid. London Agent—MR. GEORGE L. Victoria Road, Putney.
WM. THOMSON AND SONS, Clovenfords, Galashiels, N.B.

Landscape Gardener.

J. MUNRO, Northfields, Stamford, advises, Designs, and Estimates for all kinds of Ornamental Ground Work, Forest and Cover Planting, &c. Thirty years' practice. Many years Nursery Manager at Dickson's, Chester; Lawson's, Edinburgh; and Osborn's, London.

W. H. LASCELLES and CO.,
HORTICULTURAL BUILDERS,
121, BUNHILL ROW, LONDON, E.C.
Plans and Estimates Free.
See large Advertisement, October 6, page 377.

SALES BY AUCTION.

Bulbs from Holland.

Sales every MONDAY, WEDNESDAY, and SATURDAY, in Large and Small Lots, to suit all Buyers.

MR. J. C. STEVENS will **SELL** by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., every MONDAY, WEDNESDAY, and SATURDAY, at half-past 12 o'clock precisely each day, first-class consignments of HYACINTHS, TULIPS, CROCUSES, NARCISSUS, SNOWDROPS, ANEMONES, RANUNCULI, &c.

On view morning of Sale, and Catalogues had.

Thursday Next, October 25.—(Sale No. 7777.)

SPECIAL SALE OF DUTCH BULBS.

MR. J. C. STEVENS will **SELL** by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, October 25, at half-past 12 o'clock precisely, several lots of BULBS just received from Holland, in fine condition, including HYACINTHS, TULIPS, CROCUSES, NARCISSUS, SNOWDROPS, ANEMONES, RANUNCULI, &c.

On view morning of Sale, and Catalogues had.

Thursday Next.—(Sale No. 7777.)

5000 grand Bulbs of LILIUM AURATUM, just received from Japan, in the finest possible condition.

MR. J. C. STEVENS will include the above in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, on THURSDAY NEXT, Oct. 25. On view morning of Sale, and Catalogues had.

Dutch Bulbs.

Every MONDAY, THURSDAY, and SATURDAY. Great Unreserved Sales.

MESSRS. PROTHEROE AND MORRIS will **SELL** by AUCTION, at the Central Sale Rooms, 67 and 68, Cheapside, London, E.C., every MONDAY, THURSDAY, and SATURDAY, at half-past 12 o'clock precisely, extensive consignments of first-class HYACINTHS, TULIPS, CROCUSES, NARCISSUS, and other BULBS, from Holland, lotted to suit the Trade and Private Buyers.

On view morning of Sale, and Catalogues had.

Lee.

Close to Grove Park Station.

Remarkably well-grown NURSERY STOCK, all fit for immediate planting, consisting of an assortment of Ornamental and other Shrubs, including numerous best specimens of Deciduous and Flowering Shrubs, Standard, Ornamental, and Forest Trees, Fruit Trees in variety, Ivies, Ferns, &c., and particularly worthy the attention of Gentlemen, Builders, and others.

MESSRS. PROTHEROE AND MORRIS will **SELL** the above by AUCTION, on the Premises, the Grove Park Nursery, Lee, S.E., on MONDAY, October 22, at 12 o'clock precisely, by order of Mr. G. Hind.

May be viewed three days prior to the Sale. Catalogues had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, London, E.C.; and Leytonstone, E.

Sunningdale.

Five minutes' walk from the Sunningdale Railway Station, London and South-Western Railway.

Extensive UNRESERVED SALE of beautifully grown NURSERY STOCK, a large portion of which is growing on Land recently Sold, necessitating an immediate Clearance, and affording a rare opportunity to Gentlemen as well as the Trade who are engaged in planting. The Sale will include a large quantity of Specimen Conifers and other Shrubs, symmetrically grown, and adapted for immediate effective purposes.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. Charles Noble (who has placed in their hands the disposal of his long-established Business and Freehold Estate) to **SELL** by AUCTION, on the Premises, the Sunningdale Nurseries, Bagshot, Surrey, on MONDAY, October 22, and five following days, at half-past 12 o'clock precisely each day, an extensive quantity of remarkably well-grown NURSERY STOCK, extending over about 50 Acres, and embracing a great assortment of Evergreens and Conifers, including 1000 Thuja americana and Lobbi, some thousands of Cupressus Lawsoniana, Laurels of sorts, Green and Variegated Aucubas, Mahonia aquifolium, Retinosporas, Picea Nordmanniana, 2000 Ligustrum ovalifolium, 500 Ilex Shepherdii, and other Hollies, Ornamental and Forest Trees in variety, Andromedas, Hardy Azaleas, 2000 Berberis of sorts, Hardy Climbers, and other Plants.

May be viewed prior to the Sale. Catalogues may be had on the Premises; at the Sunningdale Hotel, Sunningdale Railway Station; and of the Auctioneers and Estate Agents, 67 and 68, Cheapside, London, E.C., and Leytonstone, E.

Isleworth.

(5 minutes' walk from the L-I worth Railway Station.)

SPECIAL TRADE SALE of beautifully grown young CONIFERS and GOLDEN EUONYMUS, for immediate potting, window boxes, or for growing on; by order of Messrs. Charles Lee & Son.

MESSRS. PROTHEROE AND MORRIS will **SELL** by AUCTION, on the Premises, the Wood Lane Nursery, Isleworth, on TUESDAY, October 23, at 12 o'clock precisely, 15,000 of the best Silver and Golden EUONYMUS, splendidly coloured; 4000 CUPRESSUS LAWSONII RECTA VIRIDIS, 1 to 3 feet; 1200 AZALEA MOLLEIS and A. ALTA-CLARENSIS, 1 to 15 inches; 500 CLEMATIS JACKMANII SUPERBA, in pots; 1200 THUJA LOBBII, 2 to 3 feet; 1000 REINOLDSIA, of sorts, 1 to 4 feet; thousands of various CONIFERS, for potting; 500 AUCUBAS, 2 to 2½ feet; 500 Standard Apples, of the best sorts; 500 Standard VICTORIA PLUMS; an assortment of GREENHOUSE PLANTS, ERICAS, &c.

May be viewed one week prior to the Sale. Catalogues may be had on the Premises; at the Royal Vineyard Nursery, Hammer-smith, W.; and of the Auctioneers, 67 and 68, Cheapside, London, E.C., and Leytonstone, E.

Tuesday Next.

NURSERY STOCK and GREENHOUSE PLANT SALE, from Sample.

Important to the Trade and Private Buyers.

MESSRS. PROTHEROE AND MORRIS will **SELL** by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on TUESDAY NEXT, October 23, at half-past 12 o'clock precisely, the following:—

1,600 Rhododendron ponticum, 1½ to 4 feet	3,000 Stove Latanias
300 Green Euonymus, 3 feet	800 Mâché Niel Roses, in 48-pots, 6 to 12 feet
Thousands of Conifers, in various sizes	800 Crotons
30,000 Quick	Adiantum cuneatum
And choice assortment of Plants, including Clematis, and other Fruit Trees	And large quantities of other Stock

Samples will be on view the morning of Sale. Catalogues on application, 67 and 68, Cheapside, London, E.C.

Wednesday Next.

8000 LILIUM, just received from Japan, the bulbs being in splendid condition, and 10,000 African TUBEROSES just to hand.

MESSRS. PROTHEROE AND MORRIS will include the above in their SALE at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on WEDNESDAY NEXT, October 24, at half-past 12 o'clock precisely.

On view morning of Sale, and Catalogues had.

Wednesday Next.

8000 LILIUM AURATUM just received from Japan, 10,000 African TUBEROSES, Japanese IRIS, a large assortment of NARCISSUS, English-grown LILIES and other hardy BULBS, Dutch Flower ROOTS, 500 CAMELLIAS and AZALEAS of the best sorts from Belgium, GREENHOUSE PLANTS in variety, POTTERY, &c.

MESSRS. PROTHEROE AND MORRIS will **SELL** the above by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on WEDNESDAY NEXT, October 24, at half-past 12 o'clock precisely.

On view morning of Sale, and Catalogues had.

Friday Next, October 26.

IMPORTANT SALE of SELECTED DUPLICATE PLANTS from his well-known Collections of ESTABLISHED ORCHIDS, by order of F. G. Taitz, Esq.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions to **SELL** by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY, October 26, at half-past 12 o'clock precisely, SELECTED DUPLICATE PLANTS from this well-known collection, including amongst many others the following:

Cypripedium Leucum superbum	Cypripedium foliolosum
„ Morganianum	„ Saundersianum
„ Arthurianum	Oncidium macranthum
„ Amesianum	Odonatoglossum vexillarium superbum
„ Wallisii	„ leucoglossum. First-class Certificate, Royal Horticultural Society
„ Dayanum superbum, best variety	„ brevifolium
„ Measuresianum, good variety	„ chiriquensis
„ Wallerianum	Phalenopsis Alaric
„ Boissierianum	Sobralia zantholeuca
„ Harrisianum vivicans	Dendrobium nobile nobilissimum
„ Marshallianum	„ splendidissimum
„ Taitzianum	Cattleya Trianae Backhouseana
„ tessellatum porphyreum	Laelia anceps Dawsoni
„ Fairreanum	Celeogyne tomentosa
„ Mrs. Charles Canham	

On view morning of Sale. Catalogues forwarded on application to the Auctioneers, 67 and 68, Cheapside, London, E.C.

Friday Next.

ONCIDIUM MACRANTHUM, direct importation of very fine specimens collected by Mr. F. Lehmann, for Sale, without reserve.

MESSRS. PROTHEROE AND MORRIS will include the above in their SALE on FRIDAY NEXT, October 26.

On view morning of Sale, and Catalogues had.

Sunbury, Middlesex.

Important to Gentlemen, Nurserymen, Market Gardeners, Fruit Growers, and Others.

MESSRS. PROTHEROE AND MORRIS are directed by Mr. John Turtle (who is disposing of the Freehold Estate) to **SELL** by AUCTION, on the Premises, the Osborn Nursery, Sunbury, Middlesex, about 10 minutes' walk from the Sunbury Railway Station, on MONDAY, October 29, and following day, at 12 o'clock precisely each day,

5000 Standard Apples, 2 years	8,000 Maiden Apples
5000 Morello Cherries	10,000 Victoria Plums
500 Pears	20,000 Fruit Stocks
20,000 DWARF ROSES, including the choicest named varieties.	
10,000 Manetti Stocks	8,500 Spruce Firs
10,000 Evergreen and Coniferous Shrubs	20,000 Quick
2,000 Limes and other Ornamental Trees	12,000 Chrysanthemums
	1,000 Eucharis
	2,000 Bouvardias
	&c., &c.

May be viewed any day prior to the Sale. Catalogues had on the Premises; and of the Auctioneers, 67 and 68, Cheapside, London, E.C., and Leytonstone, E.

N.B.—The valuable FREEHOLD NURSERY will be offered in one lot, on the Premises, on MONDAY, October 29, at half-past 11 o'clock precisely. See separate Advertisement.

Tuesday, October 30.—Orchids in Flower.

MESSRS. PROTHEROE AND MORRIS desire to announce that their NEXT SPECIAL SALE of ORCHIDS IN FLOWER will take place as above, for which they will be glad to RECEIVE NOTICE OF ENTRIES as early as possible.

Sunbury, Middlesex.

VALUABLE FREEHOLD NURSERY.

Advantageously situated about ten minutes' walk from the Sunbury Railway Station, and only 16 miles from London.

MESSRS. PROTHEROE AND MORRIS are instructed to **SELL** by AUCTION, on the Premises, Osborn's Nursery, Sunbury, Middlesex, on MONDAY, October 29, at half-past 11 o'clock precisely, unless an acceptable offer be previously made, the important FREEHOLD NURSERY, known as Osborn's Nursery, Sunbury, Middlesex, containing an area of about 17 Acres, with the Brick-built Eight-roomed Residence, 24 Greenhouses, all of modern and superior erection, and heated with upwards of 2½ miles of 4-inch Hot-water Piping; the excellent block of brick-built Stables, Packing and Cart Sheds, and other Buildings requisite for carrying on an extensive business. The Estate possesses a commanding frontage of over 1000 feet, which could be let off or sold for building purposes, without interfering in any way with the carrying on of the present business.

Particulars, Plans, and Conditions of Sale may be had on the Premises; of Messrs. RIDLEY and CHANCELLOR, Solicitors, Dartford, and of the Auctioneers, 67 and 68, Cheapside, London, E.C., and Leytonstone, E.

Abbey Wood.

By order of the Executors.

TWO DAYS' CLEARANCE SALE of unusually well-grown NURSERY STOCK, Important to Gentleman, Builders, Landscape Gardeners, and Others.

MESSRS. PROTHEROE AND MORRIS will **SELL** by AUCTION, on the Premises, the Abbey Wood Nursery, Belvedere, Kent, at a short distance from the Abbey Wood Railway Station, on WEDNESDAY and THURSDAY, October 31 and November 1, at 12 o'clock precisely, a large quantity of well-grown NURSERY STOCK, consisting of about 10,000 Cupressus Lawsonii, 1 to 8 feet; 5200 other Conifers from 1 to 3 feet; 6000 Oval-leaved Privet, 3 to 4 feet; 6000 Green Hollies, 1 to 4 feet; 2500 Variegated Hollies, 1 to 5 feet; 1000 English Yews, 2 to 4 feet; 4000 Aucubas, 2500 Common Laurels, 3 to 4 feet; 2000 Dwarf Roses, Standard Ornamental Trees, &c.

May be viewed any day prior to the Sale. Catalogues may be had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, E.C., and Leytonstone, E.

Leytonstone, E.

Adjoining the Leytonstone Railway Station.

TWO DAYS' SALE of beautifully grown NURSERY STOCK and GREENHOUSE PLANTS, arranged in lots to suit large and small buyers.

MESSRS. PROTHEROE AND MORRIS will **SELL** by AUCTION, on the Premises, the American Nurseries, Leytonstone, E., on THURSDAY and FRIDAY, November 1 and 2, at 12 o'clock precisely each day, an extensive assortment of 3000 Conifers, Evergreens, and Deciduous Shrubs in various sizes, carefully prepared for removal; 2000 clean green Limes, Poplars, and other choice Ornamental Trees; 2000 Rhododendrons; 3000 Fruit Trees, embracing all the leading varieties of Apples, Pears, Plums, Peaches, Nectarines, &c.; 1000 Standard and Dwarf Roses, and a large variety of useful Greenhouse Plants adapted for Conservatory and House decoration.

The Stock may be viewed any day prior to the Sale. Catalogues had on the Premises; and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Tottenham.—Preliminary Notice.

ANNUAL SALE of remarkably well-grown NURSERY STOCK, HERBACEOUS PLANTS, and BULBS, for the growth of which Mr. Ware has gained a great reputation.

MESSRS. PROTHEROE AND MORRIS desire to announce that the ANNUAL SALE will take place on the Premises, the Hale Farm Nurseries, Tottenham, on TUESDAY, November 6, 1888.

Full particulars will appear next week.

Groombridge, Tunbridge Wells.

Great UNRESERVED SALE of Valuable NURSERY STOCK; all recently transplanted, and now in splendid condition.

MESSRS. PROTHEROE AND MORRIS will **SELL** by AUCTION on the Premises Hollamby's Nurseries, Groombridge, Tunbridge Wells, close to the Groombridge Station, on TUESDAY and WEDNESDAY, November 6 and 7, at 12 o'clock precisely each day, a large quantity of well-grown NURSERY STOCK. May be viewed. Catalogues had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Finchley Road, N.W.—Preliminary Notice.

Important to Florists and others engaged in the Nursery and Furnishing Trade. The old-established and old-established NURSERY and FLORIST'S BUSINESS for SALE, by order of Mr. W. A. Clizco, who is leaving the neighbourhood.

MESSRS. PROTHEROE AND MORRIS are instructed to **SELL** by AUCTION, on the Premises, EARLY IN NOVEMBER NEXT, as a going concern, the compact Leasehold Property, known as the WAYERLEY NURSERY, situated in the Finchley Road, London, N.W., a few minutes' walk from Marlborough Road Station.

Further particulars will appear next week.

Auctioneers' Offices, 67 and 68, Cheapside, London, E.C.

Extensive Importations of Orchids.

MESSRS. PROTHEROE AND MORRIS will **SELL** by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., at an early date, extensive importations of ORCHIDS, received direct, being the contents of about 50 cases; amongst them will be found a large consignment of Cattleya Percivaliana, also C. lobata superba, C. labiata Warnerii, and Oncidium Papilio, received from Mr. F. Man.

The plants are in splendid condition. Full particulars will appear next week.

Barnet.—Preliminary.

VALUABLE FREEHOLD NURSERY and BUILDING LAND.

MESSRS. PROTHEROE AND MORRIS are instructed to **SELL** by AUCTION, in NOVEMBER NEXT, the VALUABLE FREEHOLD LAND, in the occupation of Mr. Cornwall as Nursery Grounds, containing an area of about 9 acres.

Also about 17 acres of NURSERY STOCK, 8 Greenhouses, Greenhouse Plants, &c. Fuller particulars will appear in future Advertisements.

Royal Nurseries, Eaton, Norwich.

The ENTIRE STOCK of about 10,000 Forest Trees and Shrubs—Ash, Alder, Beech, Chestnut, Lime, Laburnum, Poplar, Plane, Spruce, Wellingtonia. 16,000 Evergreens—Cotoneaster, Box, Broom, Berberis, Holly, Laurel, Privet, Thuia, Yew. 3500 Flowering Shrubs—Almond, Guedres Rose, Honey-suckle, Lilac, Jessamine, Laurustinas, Rhododendron, White and Pink Thorn. 8250 Standard and Dwarf Roses—Celine Frestier, Nipheto, Maréchal Niel, Homère, Lady Sheffield, Louis Van Houtte, J. S. Mill, La France, Sir G. Wolsley, Sultan of Zanzibar, Blanche Moreau, Empress of India, and some hundred other names. 700 Chrysanthemums, in pots. Christmas Number, Fair Maid of Guernsey. President Garfield, Virgin Queen, Mrs. Dixon, Princess Teck. 240 Maidenhair Ferns, in 8, 7, and 5-inch pots. 45,000 Fruit Trees and Bushes—Peaches, Nectarines, Apples, Pears, Quince, Plums, Filbert, Cobs, Gooseberries, Currants, Mulberries, Walnuts. 15,000 Stocks and Layers. Apples, Pears, Quince, Filbert, Manetti, Dela Grifferaie, Myrobelia Mussel. 60 Vines, strong healthy plants, in large pots, in fine condition for pushing along—Black Hamburg, Madresfield Court, Golden Queen, Mill Hill Hamburg. 10,000 Rhubarb, Seakale, Asparagus, and in variety, Yucca, Tritonia, Uvra, Clematis, Spirea, with a choice collection of Double White Primula, Gardenia, Fuchsias, Pelargoniums, and Roses in pots. Wheelbarrows, Tools, Hand-lights, Pots, and other Nurserymen's Appliances. The trees and bushes are healthy, and in excellent condition to move, recent transplanting having been carried on to considerable extent. Purchasers are to be at liberty to remove their respective lots as may be convenient up to the 22nd day of December next.

MESSRS. CLOWES AND NASH are favoured with directions to **SELL** the above STOCK by AUCTION on **WEDNESDAY, THURSDAY, and FRIDAY, October 24, 25, and 26, 1888**, in suitable lots for private purchasers, with option to the Trade.

Catalogues may be obtained or will be forwarded on application at the Auctioneers' Offices, Bank Chambers, Norwich.

South Hill Park Nursery, Bromley, Kent.

IMPORTANT SALE of well-grown NURSERY STOCK, all recently transplanted and in fine condition for removal.

MESSRS. BAXTER, PAYNE, and LEPPER have received instructions from Messrs. Ponsford & Sons, to **SELL** by AUCTION, upon the Premises, as above, on **FRIDAY and SATURDAY, October 26 and 27, at 11 for 12 o'clock** precisely each day, the valuable NURSERY STOCK, comprising 1000 Pines, 1 to 7 feet; 1000 Abies, 2 to 7 feet; 1000 Fica Nordmanniana, 1500 Wellingtonia, 1500 Spruce, 150 very fine Cedrus Deodara, 1500 Rhododendrons in bud, 1000 Hollies, 1000 Laurels, 100 choice Rose Trees, 10,000 Specimen Ornamental and Forest Trees, 2000 Standard, Pyramid, and Espalier Fruit Trees; 10,000 Flowering and Deciduous Shrubs, a large Collection of Greenhouse Plants, Chrysanthemums, Marguerites, Azaleas, Ferns, Palms, &c.

May be viewed prior to the Sale, and Catalogues obtained of Messrs. PONSFORD AND SONS, Nurserymen, Brixton, S.W., and Bromley, Kent; and of BAXTER, PAYNE, and LEPPER, Surveyors and Land Agents, Bromley and Beckenham, Kent, and 89, King William Street, E.C.

TO BE SOLD, as a concern in working order, an old-established SEED BUSINESS (Retail and Wholesale), in the best part of the City of London. Capable of much extension.

A. B., W. Gilks, Esq., 15, Lincoln's Inn Fields, W.C.

Bournemouth.

FOR DISPOSAL, the LEASE and GOODWILL of a small compact MARKET GARDEN, well stocked and in good cultivation. Admirably adapted for the erection of glass. For particulars apply by letter to A. C., 187, Old Christchurch Road, Bournemouth.

To Market Gardeners, Florists, Nurserymen, &c. HAMPTON-ON-THAMES.

FOR SALE, choice FREEHOLD LAND, in 1 Acre Plots, suitable for above. Rich Garden Soil with gravel and sand sub-soil. The land is considered by the Trade the finest near London for Grapes and all other Market Products. Apply, SECRETARY, Estates Investment and Villa Farm Company, Estate Office, Tangle Park, Hampton-on-Thames.

FOR SALE, a small FLORIST'S BUSINESS. Price £100. Rent low. Part let off.—Apply, A. C., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

South of England.

LARGE GARDEN, 20 Acres, with Twenty Greenhouses and Vineries. £7000 has been spent on the property. Seven years' lease. Two Cottages inclusive. £150 a year. ELDRIDGE, Portsmouth.

To Fruit Growers.

TO BE LET, with early possession, in a Town about 30 miles from London, on a main line, a SPAN ROOF VINERY, 60 feet by 30 feet, well stocked with Vines in full bearing; a SPAN-ROOF CUCUMBER and TOMATO HOUSE, 60 feet by 12 feet; both heated with Hot-water; Potting SHED, Cold PITS, and Walled-in GARDEN, containing altogether about 60 poles. A stream forms one boundary of the Property. Address X., Page's Advertising Offices, 108, Fleet Street, E.C.

PROTHEROE and MORRIS, HORTICULTURAL MARKET GARDEN and ESTATE AUCTIONEERS and VALUERS, 67 and 68, Cheapside, London, E.C., and at Leytonstone, E. Monthly Horticultural Register had on application.

P. EONY ARBOREA — P. SINENSIS.—The unique and very best selected collection in the world—300 varieties of P. arborea; 350 of P. sinensis, including new, rare and very rare varieties; also Japanese and Chinese sorts. Special Collections well selected for Amateurs. Ask for the Descriptive CATALOGUE of Prices, printed in English, to L. PAILLET, Nurseryman, Chateaux (Seine), near Paris, France. Established 1827. NOTE.—Best season to plant P. sinensis, August, September, and October, but Paeonies may be planted also up to April.

ORCHIDS.**THE LIVERPOOL HORTICULTURAL CO.**

(JOHN COWAN), Limited,

Have just received a fine Importation of
ONCIDIUM MACRANTHUM.
ODONTOGLOSSUM HALLI.
LELIA XANTHINA.

„ **HARPOPHYLLA.**
CATTLEYA WARNERI.

And many others.

Circular with full particulars of these and other Importations, also copy of their new Illustrated and Descriptive CATALOGUE OF ORCHIDS, will be sent free on application.

THE VINEYARD and NURSERIES, GARSTON, near LIVERPOOL.**Orchids.**

Duplicate Plants, well grown and superb varieties, many having obtained First-class Certificates, from

MR. BRAY'S COLLECTION,

Mont S. Amand, Ghent, Belgium.

Cypripedium Arthurium, Ceanothus superbum, cardinalis, Crossianum superbum, Euryandrum, Godseffianum, Kaiturum, microchilum, Lceanum superbum, Mrs. Canham, marmorophyllum, Morgane, Meirax, nitens, idilum, Sedeni candidulum, Swanianum, vexillarium. Cattleya Mossie alba, Mossie Reineckiana, Morgane, Trium alba, Gaskelliana alba. Dendrobium Leechianum, Ainsworthii.

Address as above.

ENGLISH YEWs, 3, 4, 5, and 6 feet.

BOX, Green, 3, 4, 5, and 6 feet.

„ Variegated, 3, 4, 5, and 6 feet.

PIÑUS AUSTRIACA, 3, 4, 5, and 6 feet.

All well furnished, and finely rooted. Many thousands.

ANTHONY WATERER, Knap Hill Nursery, Woking, Surrey.

A. LIETZE, Rio de Janeiro.—New PRICE

A. LIST for PALM SEEDS, Post-free to all applicants, from ADOLPH V. ESSEN and CO., 73, Gr. Reichenstr., Hamburg.

TREES and SHRUBS suitable for Towns and Smoky Districts. CATALOGUE free on application.—RICHARD SMITH and CO., Nurserymen and Seed Merchants, Worcester.

LAXTON'S NEW STRAWBERRIES.

Four First-class Certificates from the Royal Horticultural Society.

The earliest, largest, finest, and lat. at high-quality sorts, and the most profitable for Market or Private Growers, as they make the highest prices in Covent Garden. Send for Descriptive Priced LISTS, with Press and other Testimonials, to LAXTON BROTHERS, Bedford.

SPECIAL OFFER OF FERNS.—Pteris

crenula, P. cretica, P. cretica cristata, P. serrulata cristata compacta, in thumbs, fit for immediate potting. Also the same varieties, good stuff, in 48's, to offer in quantity.

Prices per 100 or 1000 on application.

R. FENGELLY, Dyson's Lane, Upper Edmonton.

INTENDING PLANTERS are invited to

Inspect our Stock of ROSES, RHODODENDRONS, FRUIT TREES of all descriptions, ORNAMENTAL TREES and SHRUBS, FOREST TREES, &c., extending over 150 acres.

Descriptive CATALOGUE free on application.

H. LANE and SON, Nurseries, Berkhamsted, Herts.

SPECIAL OFFER

TO THE TRADE.

500 LAPAGERIA ALBA, of various sizes.

2000 ASPIDISTRA LURIDA and VARIEGATA, fit to pot into 48's.

2000 ADIANTUM CUNEATUM in 48's and 32's, grown cool, and particularly hard.

HOWARD'S Nursery, Southgate, N.

MAIDENHAIR FRONDS.—Wanted to

supply the above, matured and fresh, carriage free, 6s. per dozen bunches of 30 fronds each.

HENRY SNOW, 2, Russell Place, Old Dover Road, Blackheath.

"PAUL ENGLEHEART."

Rooted Layers of the above fine Crismon Bedding CLOVE CARNATION are now ready to lift. The variety can be confidently recommended as possessing all the good qualities of the "Old Clove," with much greater vigour of constitution, and a dwarf sturdy habit, which REQUIRES NO STICKS.

Price, 2s. each, 18s. per dozen, 9s. half-dozen.

GILBERT DAVIDSON, Ammanford, R.S.O., Carmarthenshire

The New Raspberry.

LORD BEACONSFIELD.

(A Seedling). The finest Raspberry and best cropper ever known. First-class Certificate, Royal Horticultural Society. Canes 22 per 100; 6s. per dozen. Trade supplied; Cash with Order.

A. FAULKNER, Ickpen, Hungerford.

HURST and SON

have good stocks of the following, and will quote at specially Reduced Prices:—

ROMAN HYACINTHS.

LILIUM CANDIDUM.

„ HARRISII.

DAFFODILS, double and single.

NARCISSUS POETICUS.

„ double white.

„ OBVALARIS.

SNOWDROPS, and other sorts of Bulbs for forcing and planting.

Please refer for special quotations.

Seed Warehouse: 162, Houndsditch, London, E.

THE GARDENERS' ORPHAN FUND.**DONATIONS and SUBSCRIPTIONS**

WILL BE THANKFULLY RECEIVED BY

A. F. BARRON, Hon. Sec.,

Royal Horticultural Society's Gardens, Chiswick, London, W.

NOTICE.—I, the undersigned, LOUISA MAULE, of the Nurseries, Stoke Gifford, and Stapleton Road, Bristol, hereby give notice that the business of Messrs. W. Maule & Sons, carried on as above, will be closed from this date. All accounts to be sent in by the 21st day of Dec., 1888. Dated this 11th day of October, 1888.

(Signed)

LOUISA MAULE,

Southborne Villa, Coburg Road, Bristol. Witness, EDWARD F. PARKER, Auctioneer, Bristol.

THE PARKS COMMITTEE of the Halifax Corporation are prepared to **RECEIVE TENDERS** for the SUPPLY of 100 TREES, 14 feet to 18 feet in height, of any of the following species:—Western Plane, Lime, Sycamore, Wych Elm—delivered at Savile Park, Halifax, before November 30, 1888. Tenders, endorsed "Tender for Trees," must be sent to the undersigned before November 10, 1888.

By order, **KEIGHLEY WALTON**, Town Clerk. Town Hall, Halifax, September 27, 1888.

Borough of Penzance.

TO LANDSCAPE GARDENERS.

Extension of Time.

THE PENZANCE TOWN COUNCIL invites PLANS for LAYING out as PUBLIC WALKS and PLEASURE GROUNDS the Morrab House Property. A Report explanatory of the details of the plan and estimated cost must accompany each design. Premiums of Twenty and Ten Guineas will be given for the best and second best Designs respectively. Should the Author of the Premiated Plan be selected to carry out the work the Premium will merge in the Commission. The Premiated Plans to become the property of the Council. The Grounds to be laid out 4 acres in extent, and having throughout a southern slope—can be seen on application to the Borough Surveyor, from whom a Plan may be obtained on payment of £1, which will be returned to those forwarding designs.

Plans, &c., with distinguishing motto and name in sealed envelope, to be sent to me at my office, Public Buildings, on or before OCTOBER 27 next, instead of 20th instant, as previously advertised.

THOS. CORNISH, Town Clerk.

Penzance, October 9, 1888.

HOW TO MAKE THE MOST of the LAND by the Profitable Cultivation of Fruit, &c. **THE HORTICULTURAL and TECHNICAL COLLEGE, Ltd.**, Swanley, Kent. Winter Session commences Oct. 17.—Address, Mr. BUCKLAND.

SMALL SHRUBS and CONIFERÆ.—

Araucaria imbricata, 10 to 12 inches, 50s. per 100; Abies Douglasii, 1-yr., 4s. per 100; A. orientalis, 1-yr., 30s. per 1000; American Arbor-vitæ, 1½ foot, 60s. per 1000; Sweet Bay, 1-yr., 30s. per 1000; Scarlet Chestnut, 1-yr., 6s. per 100; Cupressus macrocarpa, 1-yr., 30s. per 1000; Lawsonii, 18 inches, 60s. per 1000; erecta viridis, 4 inches, 30s. per 1000; do., 1 foot, 12s. per 100; stricta, 1 to 1½ foot, 12s. per 100; Allium, 1 foot, 14s. per 100; Cedrus atlantica, 1-yr., 1-yr. transplanted, 10s. per 100; C. Deodara, 1-yr., 7s. per 100; Escallonia macranthe, pots, 14s. per 100; Laurel (common), 2-yr., 20s. per 1000; Portugal Laurel, 1-yr. transplanted, 20s. per 1000; Colchic Laurel, 1-yr., 25s. per 1000; Laurel rotundifolia, 1-yr., 25s. per 1000; Limes, 1-yr. transplanted, 16s. per 1000; Pinus Cembra, 3-yr., extra, 16s. per 1000; P. insignis, 1-yr., 3s. 6d. per 100; P. excelsa, 1-yr., 4s. per 100; P. Nordmanniana, 1-yr., 30s. per 1000; P. Jeffreyi, 1-yr., 8s. per 100; P. Mastersiana, 1-yr., 10s. per 100; P. Strobus, 2-yr., 2s. per 100; Oak, Evergreen, 1-yr., 30s. per 1000; Scarlet Oak, 1-yr., 3s. per 100; Privet ovalifolium, 8 to 9 inches, 10s. per 1000; Retinospora plumosa, 10 to 12 inches, 10s. per 100; R. squarrosa, 8 to 9 inches, 8s. per 100; do., 1 foot, 12s. per 100. Thuia Lobbi, 8 to 10 inches, 30s. per 1000; do., 15 inches, 45s. per 1000; T. dolabrata, 8 to 9 inches, 80s. per 1000; do., 10 inches, fine, 12s. per 100. T. Ellwangeriana, 6 to 8 inches, 6s. per 100; Veronica Traversii, 6 to 8 inches, fine, 6s. per 100; English Yew, 1-yr., 1-yr. transplanted, 20s. per 1000; do., 8 to 10 inches, 7s. per 100. Irish Yew, 6 to 9 inches, 10s. per 100.

GARLIES MITCHELL, Nurseryman, Stranraer.

SPECIMEN CONIFERS.—Trees for Avenues, Evergreens, and Forest Trees in great variety. CATALOGUE free on application.—RICHARD SMITH and CO., Nurserymen and Seed Merchants, Worcester.

STRAWBERRY PLANTS, in small pots.

Splendid stuff of all best kinds, and true to name. Price List on application.

FRANCIS R. KINGHORN, Nurseryman, Richmond, Surrey.

Palms, Foliage Plants, Heaths, &c.

FRANCIS R. KINGHORN will be pleased to forward LIST of above with low prices. Leading decorative PALMS in all sizes, great quantities, and in finest health. Richmond, Surrey; and 191 and 192, Flower Market, Covent Garden, W.C.

EUONYMUS (Green).—50,000, all nice bushy

well-grown Specimens, 9 to 36 inches, £1 to £10 per 100.

J. J. CLARK,

Goldstone Farm, Brighton.

80,000 CLEMATIS, in Pots, of all the finest Double and Single Varieties (some of the flowers of which become 10 inches across, and are of every shade, from pure white to the darkest purple), for climbing and bedding, from 12s. to 24s. per dozen, strong plants; extra strong plants, potted into 5½-inch pots, 2s. 6d. each; Beauty of Worcester, a magnificent purple, excellent for bedding, recently sent out by us, reduced price 2s. 6d. each. Descriptive LIST on application.—**RICHARD SMITH AND CO.**, Nurserymen and Seed Merchants, Worcester.

LARGE SHRUBS and CONIFERÆ.—*Aucuba japonica*, 1½ to 2 feet, 30s. per 100; do., 2 to 2½ feet, 40s. per 100. *Berberis aquifolia*, 1½ to 2 feet, 12s. per 100; Box tree, 1½ to 2 feet, 12s. per 100; 2 to 3 feet, 20s. per 100. *Cotoneaster Simonsii*, 3 to 3½ feet, 10s. per 100; *Deutzia crenata*, flore-pleno, strong, 4s. per dozen; *Escallonia macrantha* (pots), strong, 24s. per 100; *Griselinia littoralis*, 1½ to 2 feet, 35s. per 100; *Honeysuckle* (strong), 8s. per 100; *Irish Ivy*, 4 feet, 6s. per 100; *Laurel*, common, 1½ foot, 6s. per 100; 2 feet, 10s. per 100; 3 to 4 feet, 16s. per 100. *Colchic Laurel*, 1 to 1½ foot, 12s. per 100; 2 to 2½ feet, 16s. per 100; 3 to 3½ feet, bushy, 20s. per 100. *Portugal Laurel*, 1 to 1½ foot, 16s. per 100; 1½ to 2 feet, 20s. per 100. *Rhododendron ponticum*, 1 to 1½ foot, 22s. per 100; 1½ to 2 feet, 30s. per 100; 2 to 2½ feet, 35s. per 100; 3 feet, 50s. per 100; 4 to 4½ feet, bushy, 50s. per 100. *Abies Douglasii*, 3 to 4 feet, 35s. per 100; 4 to 5 feet, 50s. per 100; do., 6 feet, 70s. per 100. *Araucaria imbricata*, 2 to 2½ feet, 30s. per dozen; 3 to 3½ feet, 48s. per dozen; 3 to 4 feet, 60s. per dozen. *Cupressus Lawsoniana*, 2½ feet, 20s. per 100; 3 to 4 feet, 40s. per 100. *C. stricta*, 2 to 2½ feet, 40s. per 100; 5 to 6 feet, extra fine, 18s. per dozen. *C. erecta viridis*, 1½ to 2 feet, 25s. per 100; do., 2 to 2½ feet, 35s. per 100. *Picea Nordmanniana*, 1½ to 2 feet, 30s. per 100; do., 2 to 2½ feet, extra, 40s. per 100. *Retinospora plumosa*, 18 inches, 25s. per 100; 1½ to 2 feet, 30s. per 100; 2½ feet, extra, 40s. per 100. *R. aquarosa*, 1½ foot, bushy, 30s. per 100; *Thuia Lobbi*, 1½ to 2 feet, 12s. per 100; 2 to 3 feet, 24s. per 100; 4 feet, 50s. per 100; 6 feet, 18s. per dozen. *Thuopsis borealis*, 2½ to 3 feet, 8s. per dozen; *T. dolabrata*, 1 foot, 30s. per 100; 1 to 2 feet, 12s. per dozen; 2½ to 3 feet (fine), 30s. per dozen.

GARLIES MITCHELL, Nurseryman, Stranraer.

MR. DODWELL'S GRAND CARNATIONS.—The finest grown. 5000 Unbloomed Seedlings, warranted of the highest parentage; unselected whether for bedding or forcing for spring flowering. 3s. 6d. per doz.; 21s. per 100. Special terms for quantities. Particulars on application. The Cottage, Stanley Road, Oxford.

Dutch Bulbs Direct from the Growers.
ANT. ROOZEN AND SON'S CATALOGUE for 1888, containing details of their immense Collections of New, Rare, and fine Bulbs and Plants (86 pages in English) is now ready, and will, as usual, be sent post-free, on application to themselves or their Agents, Messrs. MERTENS AND CO., 3, Cross Lane, St. Mary-at-Hill, London, E.C., from whom also can be obtained. **ANT. ROOZEN AND SON'S** New Work, Notes on the Cultivation of Dutch and Cape Bulbs. Price 1s., Post-free.

W. GORDON, IMPORTER OF ORCHIDS.—An Immense Stock of recently-imported Plants compels a sale of the established plants to make room. They have not yet flowered, but are all flowering plants, and must be sold at a great sacrifice. Very valuable varieties are certainly to be obtained, and great bargains. See Public Journals for high prices recently obtained. The Special Offer affords a paying investment to anyone with glass at command, which should not be overlooked. Such plants may never again be offered to the public and the Trade. **LILIES**, Silver Banksian Medal, Silver Medal National Chrysanthemum Society, September, 1888. **JAPANESE MAPLES**, Silver Banksian Medal. **TREE FERNS**, 7 First-class Certificates. **IRIS**, most gorgeous, 4 First-class Certificates. **CATALOGUES** of the above on application to The Nurseries, Amarynd Park Road, Twickenham.

OLD-FASHIONED HEDGES.—English Yew, bushy, and with a profusion of fibrous roots, 1½ to 2 feet, 6s. per dozen, 35s. per 100; 2 to 2½ feet, 8s. per dozen, 50s. per 100; 2½ to 3 feet, 9s. per dozen, 60s. per 100; 3 to 4 feet, 12s. per dozen, 84s. per 100. Prices of larger sizes and other Evergreens, suitable for Hedges—e.g., Tree Box, Holly, Laurel, Privet, Cypress, Juniper, Thuia, &c., on application.—**RICHARD SMITH AND CO.**, Nurserymen and Seed Merchants, Worcester.

Christmas Roses—(the large-flowering variety). **100,000** fine, healthy and strong Plants to select from, all my own growing (not imported), as far as unsold:—

	Per 100.	Per 1000.	Per 10,000.
Extra size	70s.	600s.	5000s.
1st "	60s.	500s.	4000s.
2nd "	40s.	350s.	2500s.

SPICEA JAPONICA, extra strong clumps. **GLADIOLUS BRECHLEYENSIS**, fine bulbs. For large quantities special prices on application. Cases and packing free. Offered by **HERMAN BUDDENBORG**, Bulb Grower, Hillegom, near Haarlem, Holland.

The Best Present for a Gardener.
VINES and VINE CULTURE.
The most complete and exhaustive Treatise on Grapes and their Culture ever published.
New Edition.
Price 5s., post-free 5s. 6d.

A. F. BARRON, Royal Horticultural Society, Chiswick.

100 Herbaceous and Alpine Plants for 25s.
RICHARD SMITH AND CO.'S Selection as above contains a most interesting and valuable assortment of beautiful and Hardy Plants for the Border or Rock-work, which produce flowers and render the garden attractive all through the year.—**RICHARD SMITH AND CO.**, Nurserymen and Seed Merchants, Worcester.

Grandest Violet.
DOUBLE VIOLET, "VICTORIA."
Best for pots, frames, or garden. 3 First-class Certificates. Strong clumps, at reduced price, to 10s. per dozen. Remittance to accompany all orders. Order now from **Mr. J. CHAMBERS**, the Kaiser, Westlake Nursery, Isleworth, W.

SHIRLEY POPPIES (the genuine strain).
The most startling novelty of the season. Surprising results. Now now for next season's display. Sealed packets, with description, &c., 1s., post-free.
Also **ICELAND POPPIES**, 7d. and 1s. per packet.
JOHN R. BOX, East Surrey Seed Warehouse, Croydon.

PLANTING SEASON.

**HARDILY-GROWN
FOREST, FRUIT,
TREES & PLANTS,
Evergreens, Roses, &c.**
NURSERIES 400 ACRES.

Largest & Finest Stocks in Europe.
INSPECTION EARNESTLY INVITED.

PRICED CATALOGUES GRATIS & POST FREE.
ESTIMATES & ALL PARTICULARS ON APPLICATION.

DICKSONS
(LIMITED),
**The Nurseries,
CHESTER.**

Address for Letters & Telegrams—**Dicksons Chester.**

VALLOTA PURPUREA, Scarborough Lily.

NARCISSUS, Butter and Eggs Daffodil.

„ Double White, sweet-scented.

IXIA CRATEROIDES, Crimson.

SEE OUR

Special Wholesale Catalogue of Bulbs,

Containing LIST of all the best varieties of **HYACINTHS, TULIPS, CROCUS, LILLIUMS, DAFFODILS, SNOWDROPS, IRIS**, &c., free on application.

WATKINS & SIMPSON,

SEED AND BULB MERCHANTS,
EXETER STREET, STRAND, LONDON, W.C.



B. S. WILLIAMS'

Improved Mushroom Spawn,

Per bushel of 14 cakes, 5s.

Per cake, 6d.; per cake, free by Parcel Post, 1s.

For Outdoor and Indoor Culture.

Victoria and Paradise Nurseries,

Upper Holloway, London, N.

SPECIAL CULTURE OF FRUIT TREES AND ROSES.

A Large and Select Stock is now offered for Sale.

The Illustrated and Descriptive Catalogue of Fruits post-free.

The Descriptive Catalogue of Roses post-free.

THOMAS RIVERS & SON,
THE NURSERIES, SAWBRIDGEWORTH, HERTS.



CUTBUSH'S MILL-TRACK MUSHROOM SPAWN.

—Too well known to require description.

Price, 6s. per bushel (1s. extra per bushel for package), or 6d. per cake; free by parcel post, 1s.

None genuine unless in sealed packages and printed cultural directions enclosed, with our signature attached.

WM. CUTBUSH AND SON

(Limited), Nurserymen and Seed Merchants, Highgate Nurseries, N.

Hooper's
The *Excellent* *Seeds at low*
Corent Garden *prices*
Seed Warehouse

The only complete Collection of Daffodils existing.
BARR'S NEW DAFFODIL CATALOGUE
for 1888. Now Ready. Free on application.

Containing a full Descriptive List of High-class and Distinct Daffodils only, and also a Descriptive List of Beautiful Hardy Daffodils, at greatly reduced prices. This Catalogue also contains Barr's Specialty Collections of Iris, Lilies, Paeonies, Michaelmas Daisies, Plantains, Lilies, Day-Lilies, and a select List of Showy Hardy Herbaceous Plants.
BARR AND SON, 12 and 13, King Street, Covent Garden, W.C.

EVERGREEN HEDGES.
EVERGREEN HEDGES.

YEW, English, 1½ to 2 feet, 30s. per 100; 2 to 2½ feet, 45s. per 100; 2½ to 3 feet, 65s. per 100.

HOLLIES, Green, 2 to 2½ feet, 40s. per 100; 2½ to 3 feet, 60s. per 100.

LAURELS, Common, 1½ to 2 feet, 12s. per 100; 2 to 3 feet, 15s. per 100; 2½ to 3½ feet, 20s. per 100.

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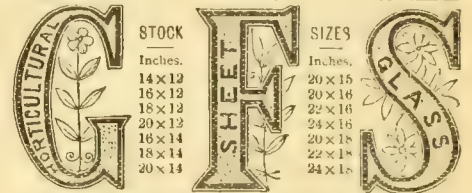
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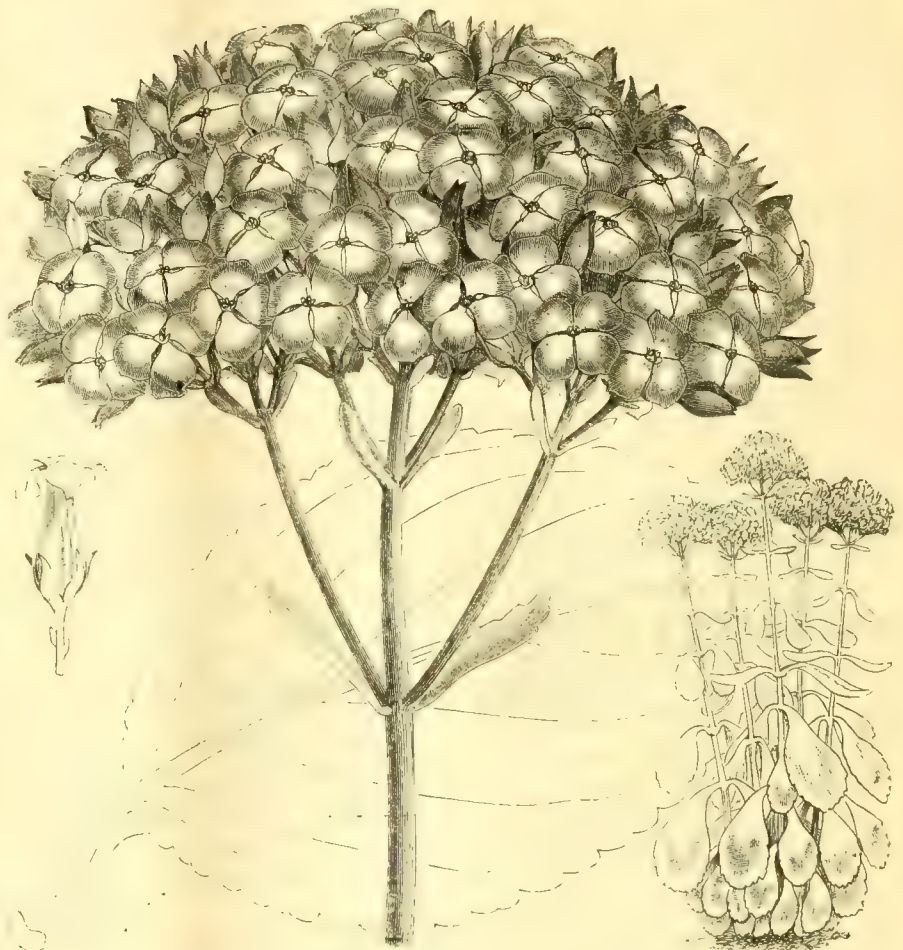
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THE

Gardeners' Chronicle.

SATURDAY, OCTOBER 20, 1888.

ROYAL HORTICULTURAL SOCIETY.

CHISWICK FRUIT EXHIBITION AND CONFERENCE.

THE following are the papers read at this meeting up to Wednesday night. A summary of the discussion which ensued is given in another column, as also a full report of the exhibition. The other papers will be printed in our next issue.

APPLES FOR PROFIT.

By Mr. GEORGE BUNYARD, Maidstone.

THE commercial growth of Apples for market is frequently entered upon in a wrong manner, because many start into the enterprise without sound information. Beginners fight shy of the growers of trees for sale under the unfair notion that they would recommend those kinds of which they held a stock; they then procure the "tip" from the salesmen in the various markets, who, as far as they can (and in good faith), give them the names of the kinds that sell well; fruits, so to speak, which dispose of themselves by their names or appearance. Many of the choicest Apples produce but a small crop, or are so long in coming to a state of profitable production that planters get discouraged; others are recommended which are very slow growers, or rarely make good orchard trees, and thus land is not fully utilised. As the markets are supplied from a large area, the salesmen have but a general idea of the suitability of sorts to a district, and hence much valuable time is lost. In the short time at my disposal, I propose to give a few hints as to the formation of a profitable Apple orchard or plantation, where the return shall be speedy, and yet in the future, for a century, shall promise a good result. The first operation is the procuring of suitable land.

In a district where little fruit is grown, an idea can be gained from the growth of the few fruit trees in the cottage gardens, and perhaps the orchards near gentlemen's seats. If the Apples show a kindly and clean growth, with an absence of lichens and canker, and if Elm trees flourish, it will so far be favourable. Exposure to prevailing winds is to be avoided, either by shelter-planting, or, better still, by taking advantage of existing woods or hedgerows.

and a slope to the south or west is to be preferred, but in order to secure a permanent orchard, care must be taken to get deeply cultivated, or rich, deep soil, or a few years of fertility will only be the precursor of decay and disappointment.

Having settled on suitable land, the tenant or purchaser next proceeds to put the land in order for planting, either by steam cultivation, or by thorough digging or trenching—the latter, though expensive at the start, is of permanent benefit. This operation is best done before the frosts set in, that the land may be purified and sweetened by exposure. The ground should then be set out, and standard trees, on the Crab or free stock, of the following sorts, planted 24 feet apart, requiring seventy-five to an acre:—

APPLES FOR STANDARDS ON WARM LOAMY SOILS.

1. *Desserts to Pick and Sell from the Tree.*—August: Devon Quarrenden, Sugar-loaf Pippin. September: Lady Sadeley, Yellow Ingestrie.

2. *To Store from October to Christmas.*—King of Pippins, Mabbott's Pearmain, Cox's Orange, Blenheim Orange.

3. *Kitchen Apples to Sell from the Tree in August and September.*—Early Julien, Keswick Codlin, Lord Suffield, Duchess of Oldenburg, Councillor, Grenadier (true), Ecklinville.

4. *To Store from October to December.*—Warner's King, Schoolmaster, Lord Derby, Golden Noble, Tower of Glamis, Waltham Abbey.

5. *To Keep from January to May.*—Wellington Winter Queening, Norfolk Beaufin, Lady Henniker, Bramley's Seeding, Annie Elizabeth.

If the soil is cold but rich, omit Suffield, and add Lord Grosvenor, and omit Cox's Orange and King of Pippins.

So far for the top crop, the space between being utilised by placing three two or three year old dwarf trees between each standard, others at 6 feet apart, which, less 75 for standards, will be 1135 per acre, until the plantation is filled up. These dwarfs will produce the best fruit from trees on the Paradise or surface rooting stock, and may consist of the following:—

APPLES FOR BUSH OR FREE PYRAMIDAL STYLE TO BE GROWN ON PARADISE STOCKS.

6. *Dessert kinds to sell from the tree.*—(7.) Early:—Gladstone, Red Juneating. September:—Colonel Vaughan, Duchess Favourite, Worcester Pearmain, Duchess of Oldenburg, Yellow Ingestrie.

(8.) *To store for sale from October to February.*—Cox's Orange, Cox's Pomona, Peasegood's Nonsuch, Baccocoyne's Scarlet, Beauty of Kent, Baumann's Reinette.

If the soil is cold, omit Cox's Orange and Worcester, but if very rich and good warm land add Adams' and Hubbard's Pearmain, Rossa, Nonpareil, and Gipsy King, while for very late keeping Golden Knob, Sturmer, and smaller fruit of Mignonne are useful.

(9.) *Kitchen Apples of large size to sell from the tree (on dwarfs).*—Lord Grosvenor, Ecklinville, Mank's Codlin, Golden Spire, Pott's Seedling, Stirling Castle, The Queen, Small's Admirable, Grenadier, Councillor, Stone's.

(10.) *Fine kitchen Apples to store (on dwarfs).*—Lord Derby, Murfitt's Seedling, Winter Peach, Lane's Prince Albert, Dutch Mignonne, Bismarck.

In six years' time the trees immediately beneath the standards can be transferred to other land, and will, if removed with care (in October or early in November), suffer little from lifting, and in the second year will produce heavy crops. After the sixth season the orchard should be left with a permanent crop of dwarf Apples and standards at 12 feet apart. The dwarfs at some future time could be cut away, and the standards, which

would then be established and strong, should be laid to grass, and thus fodder for sheep keep and a top crop of Apples could be secured annually. Until the 6 feet trees cover the land Potatoes may be grown between the rows, or Lily of the Valley, or Daffodils. But if land is cheap the space may remain without crop, and the roots will benefit greatly from the run of all the land. Weeds must be kept down, and if standards only are planted, no corn crop must be taken; but in this case soft fruit may be placed between them. The plantation should be dug in December or January each year, and be knocked over with a prong hoe in March.

Oxen and horses should not be allowed in young orchards. Shelter can be quickly obtained by planting Damson or bush Plums (the latter a Kent sort) with Crawford or Hessele Pears as an inner line at 12 feet apart, and this screen would pay its way. If desired, Plums could be placed between the Apple standards and Gooseberries and Currants, omitting the dwarf Apples. If the land is properly prepared the Apples should need no manure for some years, as the use of stimulants while the trees are young is prejudicial by inducing a sappy unripened growth which lays the tree open to damage by frost. When the trees are carrying a heavy crop, mulching may be carried out in June, or liquid manure can be used with advantage in the growing time. Such a plantation as described would commence to bring a return from the dwarfs in two years, and the fruit with a little care in thinning would command a ready sale, because, when growing in this manner, it is cleaner in appearance and much larger in size. In three or four years the standards would commence to fruit, and a much larger return would annually be made, and if properly managed, at the end of fourteen years, the crop would buy the fee-simple of the land outright.

In order to make the highest price, all fruits should be "graded," as the Americans say, and be of an even sample throughout, be properly named, and packed carefully, so that the baskets open clean and bright at the market. In the case of choice dessert kinds it would probably pay to pack them in light card boxes, such as those introduced by Mr. Tallerman for Cherries, &c., and manufactured by Messrs. Johnson (figured at p. 135, and also p. 292). In fact, we should take a leaf out of the French books, and put up our produce in an attractive form. The pruning of the Apples in February or March is of the simplest, no Apples should be pruned the first year of planting; for the first two years commence to form the standard trees by taking out all the inner wood to attain a bowl shape, and cut back the young growth to four or six eyes, to a bud pointing outward. The fourth or fifth year shorten, the wood of the current year to 6 or 12 inches, and keep the centres clear, and after that time let them grow as they like, merely shortening the tips to procure an evenly balanced head, and taking out any crossing pieces of growth. The dwarf can be cut-in to form pyramids or basins, as desired, for two years, and after that be allowed to grow freely. Other matters, such as securing the limbs in a heavy crop, and staking the standards, will have to be attended to, and the stakes must be removed from the standards in the winter as soon as the trees can do without support, as the ties are apt to cut into the bark and produce canker.

For Apple growing land need not be contiguous to a railway station, as they will travel well if carefully packed. Storing enables a grower to realise a high price at a time when good Apples are scarce; where proper stores, such as the Hop

oasts of Kent, do not exist, a frost-proof shed will do; and if care is taken to store all sound fruit, a thick covering of straw will effectually exclude frost, and keep the fruit plump and heavy. If 1100 trees bore half a gallon each, at three years old the crop would be about 70 bushels per acre, which, at 4s. nett (carriage and salesman's charges deducted), would give a return of £14 per acre; at five years 1 gallon each would double the produce; and so on. When the top and bottom crop come to pick, an average of half a bushel per tree would give a return of about £120 per acre. The risk of loss by wind is small with dwarf trees, and the cost of picking is less than in tall trees, and they can be readily thinned and attended to.

A word as to old existing orchards. My recommendation is, "Woodman spare that tree." If such old trees are well manured, in two years they would be either producing good fruit, or, if cider Apples, they would so benefit from the improved culture that they should pay for re-grafting with superior kinds. I believe much may be done in this way, as the roots soon respond to generous treatment, and the foundation of success rests upon them. Suitable kinds for grafting on old trees would be:—Stone's, Lane's Prince Albert, Small's Admirable, the new and splendid Bismarck; or the smaller dessert Apples, such as Duchess Favourite and Yellow Ingestrie.

The list of fruits given is more extended than is advisable, but it may only be possible to obtain a part of the sorts given in the planter's locality the fewer kinds used the better.

FRUIT CULTURE FOR PROFIT IN THE OPEN AIR IN ENGLAND.

By WILLIAM PAUL, F.L.S.

I THINK I may safely assume that a much larger quantity of English fruit would meet with a ready sale if put before the public in a tempting state. I think I may also assume that there are thousands of acres of land in Great Britain at present bringing little or no profit to owners or occupiers, which if planted with fruit trees, might be made to return a good profit to both. Not that I think large fortunes are to be made by the venture, but a fair remuneration for the outlay of capital, and the application of industry and skill.

To give these opinions a practical application, I propose to say a few words on the subject under the following heads:—1, Climate; 2, Soils; 3, Holdings; 4, Sorts.

1. CLIMATE.

A mild equable climate free from sudden changes of temperature, and storms of wind or rain should be taken in preference. I do not believe in planting Apples, Pears, Cherries, and Plums in the bottom of valleys. This is often done on account of the quality of the soil. But it is of little benefit to the grower to realize a good growth and abundant flowering if his crop is destroyed in the flowering state by the spring frosts. Over the last few years there has been a wonderful show of blossom on the fruit trees in the valley of the Lea, but little fruit has followed owing to the destruction of the embryo by the severity of the spring frosts in this low situation. This is the one point in climate that would seem to render it unsuitable for culture for profit, as it can be but partially amended by shelter or any other means.

It seems to me that many important points desirable to secure success, are well known to those who are thoroughly versed in these matters but which have not yet taken hold of the general mind, and till they do this they cannot be too often repeated. Only a few years ago I was surprised to meet with an orchard newly planted in the bottom of a moist valley, the climate of which in spring was trying in the extreme for early buds and blossoms. The sorts, too, were indifferently chosen. Nevertheless the

planter persevered with their culture, until he found that for three or four years in succession he got plenty of blossom but little or no fruit. He has recently destroyed them and cropped the ground with vegetables. But what a waste of time and money, and what a source of vexation and disappointment!

I believe in planting on slopes or uplands, where the spring frosts are less destructive, with distant shelter to be provided, if not already existing. If cheap, quick-growing trees are planted for shelter within a few yards of the boundaries of the plantations, at the time young fruit trees are planted, the former will afford the necessary shelter by the time the fruit trees come into bearing.

On a farm of 200 acres there may be a difference of climate that would render fruit culture profitable or unprofitable, according to the position in which the trees are planted. In the valley of the Lea I find that in some years the crop is mainly or wholly on the bottom, and in others on the top of the trees. This I attribute to the frost being more severe in the one case near the ground, and in the other at a greater elevation during the period of flowering.

2. SOILS.

A light or medium loam of good depth and well drained is generally accepted as the most favourable for the production of an abundance of good fruit. It matters not if it be poor, provided manure can be obtained at an easy distance or at a cheap rate. A bad soil in a good climate often yields the grower more profitable results than a good soil in a bad climate. If the ground be wet, thorough and deep drainage is an essential condition of land to be employed in fruit culture, for it improves the climate as well as the soil. Chalk or gravel would seem to be a better subsoil than clay, as the latter, especially if wet, favours the development of canker.

As to soils for the different fruits, I would prefer for Apples a medium loam; for Plums, Pears, and Cherries a light warm loam. For Strawberries a light rich loam, cool and moist, with ready access to water. For Raspberries a deep, light loam, also cool and moist. For Gooseberries and Currants a deep, strong loam. But I would not convey the impression that these soils are necessary; in well-drained soils cultivation may be safely extended even to strong or clayey loams.

Of course, the working of the soil is, or should be, much more costly than in ordinary farm operations, and the cultivation of the trees by pruning and keeping free from insects is also an item of cost in labour which must not be lost sight of. In estimates of profits lately put forward it appears to me that these facts in connection with the cultivation of trees and soil have not been sufficiently allowed for.

3. HOLDINGS.

It is often said one should not plant fruit trees for profit except on his own land. But this would unnecessarily limit the number of growers. A long lease, however, is indispensable. According to calculations I have made, but with which I need not trouble you, thirty years is the shortest lease I should advise anyone to plant under. If the lease be for a shorter period I think the tenant should expect from the landlord either a renewal at the same rent as before, or that his trees be taken at a valuation.

It may be thought by some that this is asking too much from the owner of the soil, but I do not think it is more than it is his interest to concede. By such concession he may secure a good tenant and a good rent, and there is ample security for his rent in the value of the trees on the soil. I will read a brief extract from a recent number of the *Sussex Advertiser* in reference to land tenure in Kent, and without offering any opinion on the course taken by the tenant, as I know nothing of the case beyond what is here stated, I think you will all agree with me that such a state of things is to be deplored:—

"LAND TENURE IN KENT.—One of the results of the unsatisfactory system of land tenure now prevail-

ing in this country is to be seen at Knockholt, Kent. The lease held by Mr. Edwin Bath, of Curry Farm, in that parish, expires at Michaelmas, and he is not allowed to renew his tenancy, nor can he recover compensation from his landlord for a valuable plantation of 30 acres of Raspberries on the farm. Consequently the extraordinary spectacle may now be seen of a reaping-machine cutting down and a steam plough following it rooting up this plantation, which has cost a very large expenditure of time and money to produce. When it is considered that the produce of the plantation in question realised in the present year upwards of £1600, and that the plantation was vigorous and in full bearing, some idea may be formed of the sacrifice of property involved."

Further: It has often struck me that the manner in which the charges on land are levied is not equitable, and is calculated to discourage rather than encourage the planting of fruit trees for profit. A few words will, I think, make this plain. A man plants fruit trees, not looking for any quantity of fruit for four years. During that period he receives nothing, or next to nothing, in the shape of produce, although rent charges on land and expenses of cultivation are going on and have to be met. Then, when his crop brings him a larger return than ordinary farm produce would bring, the charges on the land are raised. Now, it would seem only fair if the charges on land are calculated according to the value of the annual crop, the planter of fruit trees should pay nothing the first four years.

4. SORTS.

Of large fruits grown for profit Apples would seem to stand first, Plums next, then Pears, then Cherries. Of small fruits, Strawberries, Raspberries, Currants, and Gooseberries are the most important; Filberts may also be planted to give a profitable crop in odd sheltered spots where other fruits would not grow well. But these different fruits do not all require precisely the same climate and soil. The Apple is perhaps the least particular in these respects, some varieties of which will thrive and produce large crops of good fruit in almost any well drained soil when grafted or budded on the Crab or Apple stock—the Paradise stock I have found next to useless under field culture on the clayey soils of Sussex. There are fifteen sorts of Apples which I should plant in preference to others in my own county (Hertfordshire), having an eye to disposal of the crop, as well as to its production. They are:—Blenheim Orange, Cox's Orange Pippin, Cox's Pomona, Devonshire Quarrenden, Ecklinville, Duchess of Oldenburg, Irish Peach, Keswick, King of the Pippins, Lord Suffield, Small's Admirable, Stirling Castle, Sturmer Pippin, Warner's King, and Wellington.

I can speak favourably of the Ecklinville from experiments made both in Herts and Sussex. I planted in Sussex four years ago two hundred Ecklinville apples that had been cut back as maidens to 2½ feet. The soil (a quarter of an acre) was good, and had been subsoiled 18 inches deep a few years previously. They grew well. The third year they produced five bushels, the fourth year seventeen bushels, which sold on the ground 5s. per bushel. They were planted about 6 feet by 6 feet, but strong growers might be planted 9 feet by 9 feet, and small fruits or vegetables might be grown between the trees for a few years. I estimate the expenses of planting and cultivating these two hundred Ecklinville Apple trees on a quarter of an acre of ground in 1884 as follows:—

Cost of trees, 200 at 50s. a hundred	£5 0 0
Planting and Digging	0 15 0
Four Years' Cultivation, at 15s. per year	3 0 0
Rent, Rates, &c., at 10s. per year	2 0 0

£10 15 0

Returns in 1888:—

Twenty-two Bushels of Apples Sold on the ground at 5s. per Bushel	£5 10 0
	£5 5 0

Next year I expect to get the outlay back, and look to the future for profits.

In exposed situations pyramid or bush trees are preferable to standards, because the fruit is not so liable to be blown down, and in large orchards, if

the trees have stems 2½ to 3 feet, sheep could run under them to feed, and thus help the returns.

Plums.—The Early Prolific, Early Orleans, The Czar, Belgian, and the Victoria are good ones. Purple and Pershore Damsons also, of which the Farleigh is well to the front, are usually a profitable crop.

Pears want a better climate and a warmer, richer, and deeper soil than Apples, and are not usually so profitable a crop as Apples. They do well as a rule on a subsoil of chalk. Of Pears, Aston Town, Eye-wood, Hesse, Williams' Bon Chrétien, Beurré de Capiaumont, and Beurré d'Amanlis are the most profitable sorts to grow in Hertfordshire; Louise Bonne of Jersey, where it will grow, and Marie Louise, where it will bear freely, are also good varieties.

Cherries like a lighter and deeper soil than Apples. The May Duke, Bigarreau Napoleon, and Kentish are good sorts.

Strawberries.—Vicomtesse Hericart de Thury, Sir J. Paxton, Elton Pine, President, Sir Chas. Napier. **Raspberries.**—Carter's Prolific, Fastolf.

Currants.—Black Naples, Lee's Prolific, Red Dutch.

Gooseberries.—Whitesmith, Warrington, Crown Bob, Lancashire Lad.

In selecting sorts of fruits it should not be lost sight of that some sorts flower later than others, and the blossoms of some sorts are more frost-proof than others, and thus the crop is often saved by late-flowering or frost-resisting blossoms. If I were about to plant fruit trees for profit, I should look closely to these matters in the selection of sorts. I would examine all the fruit trees, and talk to all the practical gardeners in the neighbourhood whom I could persuade to listen to me to ascertain which sorts produced the best and most certain crops in the district.

In conclusion, let me say that the grower's work is only partly done when he gathers his crops. He has to sell them. Like other men of business, he must be sufficiently intelligent, industrious, and energetic to find the best market for them, and to pack them properly, if packing is needed, or he misses the reward of his skill and labour.

DESSERT PEARS.

THE FEWEST NECESSARY TO SUPPLY RIPE FRUIT FROM AUGUST TO MARCH.

By W. WILDSMITH, Heckfield, Hants.

THE subject of this paper was suggested to my mind by the controversy anent the reduction of the varieties of fruits—Pears in particular—that took place in one of the horticultural journals a few months since. The general tone of that discussion went to show that there was a unanimous feeling in favour of reducing the number of varieties, but to what extent opinions differed greatly, twelve being suggested by more than one writer as the maximum number of varieties—a proposition that in some respects I had a good deal of sympathy with, but the number twelve ended, so far as I was concerned, simply because I knew from years of experience that no twelve kinds that could be named by the greatest expert in Pear lore would suffice to give an unbroken succession of ripe fruit throughout the Pear season—say from the beginning of August to the middle of March. That twelve kinds might be selected that would extend over the Pear season is quite another matter. I have long had the honour to serve an employer whose favourite fruit is the Pear, and consequently have had to give special attention to it, and if one point more than another has had to be studied it is that of quality, a solitary flavourless fruit of an otherwise good variety has not unseldom been the cause of the condemnation of the variety generally. I name this to show that my experience has been gained at some cost of labour and anxiety, and at the risk of being considered egotistical I think this entitles me to speak with some degree of confidence anent this matter of limitation of sorts. Every

fruit grower knows how precarious and how variable the Pear is in different soils, aspects, and positions, and no twelve kinds, however good they may be in one garden or district, will be equally so in another, even but a mile or two away, nor even in the same garden can they be relied on to be of the same excellence any two consecutive years; and it is this precariousness that I think renders it necessary to grow a goodly number of varieties. For the purpose of this paper I have closely examined the pear notes in my diary for several years, in which is noted date of gathering, of ripening, and duration, *i.e.*, time they continued fit for table, and from these notes I have compiled a list of twelve that, supposing I was compelled to grow only that number of kinds, would be likely to give me the most regular (not constant) succession of fruit. They are placed in the order in which they ripened here: Williams' Bon Chrétien, Fondante d'Automne, Beurré Superfin, Marie Louise, Thompson's, Doyenné du Comice, Glou Morceau, Winter Nelis, Josephine de Malines, Huyshe's Victoria, Easter Beurré, and Bergamotte Esperen.

These twelve kinds constitute the cream of all the varieties (nearly one hundred) that are grown here, and out of the twelve there are but two that are at all liable to prove of doubtful quality, and this from a cause over which we have no control, namely, a sunless season. The two kinds in question are Easter Beurré and Bergamotte Esperen, both of them late varieties, and requiring a longer season of sunshine than the others. I may, however, add that I have occasionally in a sunless season had recourse to means that has tended to make both of the kinds palatable, namely, by wrapping the fruit separately in tissue paper, and placing them in shallow baskets in a dry, warm room, for ten days or a fortnight before the fruit were required for use. And now with respect to the question of the number of varieties "necessary to ensure a continuous supply of ripe fruit." I have, after considerable deliberation, founded on the practical experience of many years, come to the conclusion that it is next to impossible to accomplish the feat with a less number than twenty-five varieties. To some this number may appear excessive, and to such I ought to explain that my experience is given from the standpoint of a private gentleman's gardener—say of a large garden—and from which liberal supplies of Pears are demanded the season through, and therefore it is necessary to have, as it were, two strings to one bow; as, for instance, if Williams' Bon Chrétien Pear run short, I ought to have Beurré d'Assomption to supply the lack; or if Marie Louise be scarce, I must eke out with Beurré Bosc, and so on, to the end of the chapter.

I regret that I have not practically tested with how few it is possible to keep up a constant supply, but I am sure I should fail if I undertook the task with a less number than twenty-five, and the following are their names, and placed in order of ripening:—Souverain du Congrès, Williams' Bon Chrétien, Beurré d'Amanlis, Fondante d'Automne, Louise Bonne de Jersey, Madame Treyve, Beurré Hardy, Beurré Superfin, Seckle, Marie Louise, Doyenné du Comice, Thompson's, Duchesse d'Angoulême, Glou Morceau, Winter Nelis, Comte de Lamy, Beurré Bachelier, Josephine de Malines, Winter Crassane, Huyshe's Victoria, Olivier de Serres, Easter Beurré, Ne Plus Meuris, Knight's Monarch, and Bergamotte Esperen. All these are generally well known varieties in most parts of Britain—proof sufficient, I think, of their excellence; and I can vouch for their reliability for this district in respect of constant and free bearing, and their high quality.

The least meritorious in the list are:—Madame Treyve (quickly over), Duchesse d'Angoulême (gritty), Beurré Bachelier (mealy), and Ne Plus Meuris (also gritty), yet I know no other four kinds that can—all points considered—replace them. Lest any one should conclude from what I have said as to the number of kinds to ensure a regular succession of useful fruit, that is all that is required to make certain of the supplies, I will undeceive them

at once by saying no. There is no fruit that gives better returns for labour expended, and none that more quickly resents the "let alone" policy that one is occasionally compelled to behold. As regards the former, nearly all our trees are grafted on the Quince, from which stock it is no exaggeration to say that we get at least double the fruit that we do from trees on the Pear stock, and high feeding is therefore a matter of necessity; but the labour of applying these manurial mulchings we place as a set-off against that of the time expended in root pruning, that nearly all trees on the Pear stock require about every alternate year, and the fruit is neither so numerous nor so well coloured, and not superior in quality. No, if good crops of fruit are expected annually, water and mulch, mulch and water, must be the order of the day all through the fruit swelling season. Those that must by reason of restricted space grow only a few varieties, and whose demands for fruit are, as a matter of course, proportionately restricted, may do something towards lengthening out the supply of ripe fruit by gathering the same variety of Pear at varying intervals of from a week to ten days. The fruit of most varieties—more especially the earlier kinds—will then ripen at similar intervals, and thus the season of ripe fruit be considerably extended. To those that have unlimited room, and can therefore grow the required number of varieties to ensure supplies, this piecemeal gathering is not of so much consequence, nevertheless I strongly advise its being done with any varieties that ripen rapidly, such as Citron des Carmes, Jargonelle, Williams' Bon Chrétien, and Fondante d'Automne.

ON PRUNING.

By SHIRLEY HIBBERD.

It is commonly asserted in the books, and it forms part of the faith of mankind, that pruning tends to augment the vigour of trees, and as a consequence much of the pruning that is done has in view to promote the end predicated for it. There can no longer be entertained by observant men a doubt of the fact that pruning, so far from augmenting, actually diminishes the vigour of the subjects operated on, and the one sole reason that the fact is not strikingly illustrated in the outdoor world is that Nature is generous, and accomplishes much in compensation for the injuries that are inflicted by the pruning-knife. And because Nature is generous and compensative, a certain amount of pruning may be done without harm, and as regards the objects we have in view in pruning fruit trees, with positive benefit. But so long as we keep in mind that pruning in the abstract is objectionable, we shall be careful to prune in a way to ensure a maximum of the advantage for ourselves, with a minimum of disadvantage to the trees.

Keeping this in mind, we at once compare the several forms of trees with a view to arrive at conclusions as to their relative values. For the present we will compare the standards, the pyramids, and the bushes. We must deal with them generally, and make broad comparisons, for particular cases would require particular consideration that would be scarcely possible in connection with this Conference.

We will begin with standard orchard trees that bear abundantly, as many orchard trees do. It will be observed that pruning neither augments the vigour of these trees nor does it promote their fruitfulness, for as, generally speaking, they are not pruned at all, they teach a bold lesson of the non-necessity of pruning. Now we will turn to the perfect pyramids, say of Apples and Pears, formed to an ideal model by long years of pruning and pinching. As pyramids are perfect, being of even contour, dense with foliage, with scarcely room anywhere to allow one to thrust a hand in, and they are healthy and bright from the ground line to the summit. It has to be remarked of these compact, leafy trees that they produce so little fruit as but rarely to pay a fair return for the land they occupy. They do, indeed, occasionally present their owner with a crop, and often he is satisfied. But if we are to take measures

for increasing the production of fruit we shall rather avoid than accept trees of this form, or if we must have them we shall, having fruit in view, rather promote an open growth with room to thrust one's head in at many places, this form of tree being favourable to fruit production. We have in our collections many kinds of Apples and Pears that will not, no matter what we do for them, conform to our ideal of the perfect pyramid. It is usual, therefore to suffer these to grow as open loose bushes, and the difference between them and the pinched pyramids is seen, not only in the form and furnishing, but in their superior fruitfulness.

Pursuing the comparison, it will be observed that pruning tends to promote secondary growth that often is immature when the season closes. This growth, therefore has been obtained by a false system, and its uselessness is a proper commentary on the violence done to Nature. The perfect pyramid is for ever loaded with immature wood that earns nothing, and the density of the foliage so completely excludes the light and air from the wood that fruit-spurs are few and commonly unproductive. The free bushes that are not pruned at all, or but moderately pruned, are, as a rule, vastly more fruitful than the pyramids, and the free standards are more fruitful than either. Thus, as a matter of fact, the order of fruitfulness is in an inverse ratio to the order of the pruning; and we may conclude that the pruning-knife is a deadly enemy to Apples and Pears.

The natural growth of a fruit tree is definite and orderly, but much of our practice appears to proceed on the hypothesis that it is a matter of accident. There is sent forth a certain number of long rods. If these are cut back secondary rods appear, and by stopping these we obtain a lot of soft spray; and so on for ever. But the long rods left to themselves throw out a few side branches and form fruit-spurs the greater part of their length. In due time the fruit appears. Often, where the soil and climate favour the business, and the varieties are naturally free-bearing, the fruit may be seen to hang like ropes of Onions, while at the same time pruned trees of the selfsame sorts are thinly dotted with fruit, so that we can actually count them, which in the other case is impossible. The unpruned standards and bushes are free to follow the course of Nature, and we see them fruiting abundantly and frequently, while the pruned trees fruit scantily and seldom. The obvious lesson is that long rods, admitting light and air freely, are more serviceable than rods systematically cut back, and thereby compelled to become densely furnished, forming compact trees impervious to light and air, as compared with the free trees, that delight to display their fruits in the fullest exposure. The leading shoots, therefore, should never be shortened except for some special reason.

In the year 1876 I had the honour of reading before the Society of Arts a paper on "Fallacies in Fruit Culture." One of my objects was to demonstrate that systematic pruning and pinching of open ground fruit trees deferred and limited the production of fruit, although these operations were intended to hasten and augment fruit production. And I placed before the meeting for inspection and criticism a number of trees that I had in the first instance selected for their ugliness, but which, having for some years occupied a good soil in a suitable situation, had acquired symmetry and proportion and fruitfulness without aid from the pruning knife, one great point in the business being that every annual growth had been allowed to acquire maturity, no secondary growth being promoted by summer pinching, and no superabundance of furniture resulting from winter pruning. Some of you will remember that in doing this I exposed myself to what I may now recall as a shower of hot shot; but I live still, and repeat the story, and if another dose of hot shot is ready for me I will not flinch so much as to move my eyelids, so sure am I that common sense will at last prevail, and that it will be agreed all round that Nature has something to do with the production of fruit.

I have the consolation, however, of knowing that common sense has prevailed. The horticultural papers altered their tone on the subject of pruning from that date; practical gardeners who lead by intelligence and example saw and acknowledged I was right, and to their advantage they have used the knife less freely than formerly. Moreover, since the year 1876 we have had a succession of Apple and Pear Conferences, and their collective lesson appears to be *Magna est veritas et prevalebit*, for have we not entered on a new career in fruit culture, common sense guiding the way, because only where common sense prevails does Nature prove herself in every sense the friend of man. While we repudiate reason Nature destroys our false work and does not even stop there, for she destroys man himself, and history is in great part the record of the price that man has paid for adherence to unreason, superstition, and folly.

Amongst the many persons who have carried out my proposals, I will name Mr. James Hudson, the gardener at Gunnersbury House, who is known to you, and whose work is near at hand. He had long lamented the unfruitfulness of a collection of good varieties of dessert Pears, but he saw no way to treat them but to resort to the practice of pruning. He saw my sample trees in 1876, and from that time he allowed the trees to manage their own affairs, since when they have been constantly and abundantly fruitful. Mr. J. James, then gardener at Redles, took a similar course, and secured equally happy results. In this garden of the Royal Horticultural Society you may see collections of pyramid Pears that have been systematically summer pruned for any number of years, and have borne moderate crops intermittently. But you may also see a collection of Apple trees in the form of free bushes that have only been lightly winter-pruned to keep them somewhat in order, and they have been constantly and abundantly fruitful, and, in fact, have every year for several years past illustrated my idea of fruits displayed like ropes of Onions. In the famous garden at Calcot, near Reading, where the late Mr. Richard Webb had every year finer crops of fruit than probably could be found in any garden of similar extent in all the home counties, there was absolutely no pruning practised, the trees never made more than a moderate growth, though in land of great strength, and the fruit was of such quality that Mr. Webb took a high place in great exhibitions as well as in Covent Garden Market. When lately at Heckfield, Mr. Wildsmith pointed out some Pear trees under reverse training that proved more than ordinarily fruitful. This reverse training does not pay when it is carried out in a severe manner by the aid of the knife and a multiplicity of ligatures, for that system is a mere warfare against Nature, which can never pay. It is in this case practised in a coaxing kind of way; the trees know but little of the knife, and the long rods are brought down gently, as I suggested years ago in what I termed "pulley pruning." Many fruitful trees acquire a half-weeping habit from the mere effect of the weight of the fruit which brings down the branches. There is no merit in observing this, but there is merit in taking from the fact a lesson in cultivation. The reverse position of the branch checks growth, exposes the wood and the fruit most completely to the sun and the air, and we may say the mere fact of fruitfulness is promotive of fruitfulness; the half-weeping habit that the law of gravitation enforces on the tree exactly suits its constitution as a fruit producer. Very much of the prevailing practice in pruning promotes rigidity of growth, and compels the tree to be a mere leaf-producer.

Now to conclude. Observation and experience have taught me that summer pruning is too promotive of useless secondary growth to be advantageous; and it tends also to keep the roots in action until late in the year, when they ought to be at rest. The effort of the tree to ripen useless wood is detrimental to its more profitable duties. Prune immediately after the fruit is gathered, first cutting out all dead wood, then cutting out cross and ill-placed shoots that would interfere with the free play of light

and air, and then conceal the pruning knife lest anyone should venture to cut back the long rods, and so renew the old warfare between useless wood and useful fruit.

Pyramid trees of many sorts of Pears will acquire beauty of contour, and become regularly furnished, and will produce abundance of fruit without any pruning whatever, as I have shown by my trees that for fifteen years continuously were never touched with the knife. The lower branches of pyramid trees never bear fruit, probably from proximity to the ground and its exhalations, as well as from the low temperature that often prevails at that level. When left to form themselves or aided in quite an infinitesimal degree they remain open to light and air, and soon become well clothed with spurs that ripen perfectly and do their duty. The dense, leafy pyramids are useless in proportion to their leafiness, and very often it may be said that the free bushes and standards are useful in proportion to their leanness, and it must be owned that many of the lean trees are amongst the most profitable. Long rods pay, short rods are more plague than profit.

A most instructive contrast between the useless pyramids and the profitable standards has occurred in the garden planted many years since by my friend Mr. J. B. Saunders, then of The Laurels, Taunton, now of Teignmouth. Mr. Saunders was proud of his pinched pyramid trees, and managed them with orthodox care. They were but moderately fruitful, though models of form, and as handsome in leafage as Camellias. In the course of time, my friend having left Taunton, a portion of his beautiful garden, of which many of the pyramid trees were occupants, came into the possession of Mr. Godding, nurseryman, of that town. This gentleman soon discovered that the pyramids would never pay rent for the land they covered, and he determined that they should pay liberally, and cover no land at all. He cut them back to sheer stems of 7 to 10 feet or so, according to their form and stature, and allowed them to form free heads over the gravel walks. They have done this; he crops the borders under them to their very stems, and they arch over the walks, forming rustic bowers, and their fruitfulness is such that it is necessary to provide artificial support to save them from self-destruction. You have never seen pinched pyramids in the deplorable condition of needing artificial support.

Of wall and cordon trees I do not propose to say anything at this time, except that they must be amenable to common sense, and Nature must have some freedom even when the trees are so fettered. Of one thing I am satisfied, that any system of pruning that promotes a late summer growth is pernicious, for it is not in this climate that fruit trees can make and mature useful wood after the passing of Midsummer Day.

CANKER: ITS CAUSE AND CURE.

By JAMES DOUGLAS, Ilford, Essex.

This troublesome disease in fruit trees has very frequently been the subject of discussion in the gardening periodicals and elsewhere. Nearly every gardener has had to deal with it in his experience of the details of fruit culture, and as I had considerable experience of it some twenty-five years ago, in an old Essex garden, I may at least claim to bring it forward as a subject for discussion.

At the outset it may be taken for granted that it is absolutely necessary to ascertain the cause of a disease before any attempt can be made to find a remedy. The late Mr. Robert Thompson, author of the *Gardener's Assistant*, and Superintendent of the Royal Horticultural Society's Garden at Chiswick, writes on canker with considerable diffidence. In the work above cited, p. 381, he says:—"The cause of canker is imperfectly understood, and so, consequently, is an effectual remedy."

His idea of the causes of canker, as summarised in his admirable work, are:—

1. Sudden checks to the vegetation of the tree, especially in spring and the early part of summer.
2. Derangements of the flow of sap, from vicissitudes

tudes of heat and cold, as well as of moisture and dryness.

3. Unskilful and severe pruning.

4. Vitiating of the sap by deleterious substances in the soil or subsoil.

5. Dryness at the root doubtless gives rise to a species of canker, which manifests itself on the younger branches and on the shoots.

Referring also to Lindley's *Theory of Horticulture*, p. 110, it is stated that a Mr. Reid, of Balcarras, had shown "that one of the causes of canker and immature fruit, even in orchards, is the coldness of the soil." He found that in a cankered orchard the roots of the trees had entered the earth to the depth of 3 feet; and he also ascertained that during the summer months the average heat of the soil at 6 inches below the surface was 61°; at 9 inches, 57°; at 18 inches, 50°; and at 3 feet, 44°. He took measures to confine the roots to the soil near the surface, and the consequence was the disappearance of canker and perfect ripening of the fruit.

Another cause has been suggested, viz., insect agency. But this view of the matter will probably not be sustained by practical gardeners generally. That insects of various kinds, including that troublesome pest, American blight (*Aphis lanigera*), will penetrate into the cankered part for shelter, is likely enough. Indeed, I can assert they do; but they are not there as the cause of canker, but because the cankered part affords a secure resting-place, which the smoother, healthier portion of the bark does not. Indeed, I can also assert that cankered trees may be found in the garden with insects upon the affected part, and others near them also cankered with no insects upon them.

My contention is that canker is caused in two ways, and affects two different parts of the trees. Perhaps the most serious disease is that which affects the trunk or larger branches of the trees. This I hold is caused by the roots pushing downwards into cold, undrained, or unsuitable soil. The other aspect of the disease is that which lays hold of the twiggy portion of the trees, for even the one-year-old shoots do not escape. The immediate cause of this is probably owing to the rupture of the sap-vessels by frosts, when the sap is in an active state. But I have a firm belief that the primary cause is also to be found in the condition of the roots, which, being in an inactive state owing to unsuitable soil, or their penetration to a great depth, prevents the perfect ripening of the wood, or maturation of the blossom-buds in the autumn.

I come now to my own experience in our old garden twenty-five years ago. There were upwards of one hundred trees of various sizes, some only a few years old, others a hundred years planted at least. Most of them were cankered, and in places where the old trees had been removed and young ones planted, canker showed itself in a few years.

The soil was light, over a gravel subsoil, and was naturally drained; the water did not stand on the surface for any length of time, even in very wet weather. I was confident that want of drainage had nothing to do with it, and that the fault was in the cultivation. Young trees seldom do any good planted amongst old ones, even if the soil has been well dug up and enriched with manure where the roots are to be placed. They require a wider and better field for their ramifications. I found I had to make gravel paths as well as fruit borders, and as most of the old trees were on the wane, and the young ones of but little value owing to their cankered state, it was thought best to remove them. But they were not all removed at once, as it was necessary to keep up a supply of fruit for household use. A space about 30 feet wide was lined off through the whole length of the garden, and was cleared of all trees and bushes. In the middle was a space 6 feet wide for a gravel path. The borders on each side, about 12 feet wide, were trenched, where possible, 2 feet deep, and we found the gravel cropped up in places within a foot of the surface. Where this was the case the gravel was taken out and used to make the path, the soil from the path being used to fill up

the space from whence the gravel was removed. A good dressing of decayed farmyard manure was worked in with the operation of trenching, and as we could obtain good clayey loam, a barrow-load of it was spread out over 2 square yards, and 6 inches below the surface; a thin layer of decayed manure was placed on the ground before the loam. This was easily done as the work proceeded; one man could wheel in the loam and manure to two at work trenching.

When the work was finished we had a good gravel path with Box edging on each side, and the borders, through the trenching and manuring, were about 8 inches higher than the surrounding ground level. I had to plant the trees soon after the trenching was finished; they were Apples, Pears, and Plums on various stocks, and in considerable variety. We planted them but 6 feet apart at first, and when they were planted a portion of good decayed turfy loam was placed round the roots. With this treatment, as might be expected, the trees made good clean growth even the first year.

As we manured rather too heavily by placing in two layers of fat stuff, I thought it best to retrench the ground the next year, lifting the trees as the work proceeded. I found they had made a mass of fibrous roots into the loam, and when the trees were replanted again quite another barrowload of loam was placed round the roots, but no manure this time. However, round the roots of each tree some decayed frame manure was placed, to keep the frost from them.

The trees made good clean growth again, and formed plenty of blossom-buds. But I found 6 feet was too close even for Apple trees on the Paradise stock, and they had ultimately to be removed from 9–12 feet apart. In the course of the next ten years other borders were made, and in some cases the trees which were too close to each other were thinned out to furnish them. Many of the old cankered trees remained in proximity to the young ones for quite ten years, and with some two or three unimportant exceptions none of the young trees cankered. This shows, I think, if the disease has been caused by insects they might have travelled from the old diseased trees to the young ones. It was some seven or eight years before any canker appeared, and then only on the Dumelow's Seedling, or Wellington. These trees were lifted, the canker cut out, and they were replanted again with fresh loam under and over the roots. The cut out portions soon healed over, and I saw no more of the disease.

The object I had in view was to encourage the roots up to the surface, and to keep and feed them there. The entire border quite close to the surface was full of roots, because it was not dug over, but merely scratched with a fork or hoe; and during winter and summer there was a thin layer of manure over it. Within the borders were the kitchen garden squares, well manured, to be cropped with vegetables, and the roots ran into this freely. We were well within the London fogs, being less than seven miles from the Bank of England. In our new garden, not much further out, we had to do the same sort of work, but the soil was much better, being medium clay of considerable depth, and nothing more was necessary than to trench the ground twice over, in order to incorporate the top and bottom soil well together. We had to drain it, and find a good outfall for the water. In such a case the drains should be about 6 yards apart.

I have brought this subject forward as much in the interest of amateurs who own small gardens, and who do most of the work themselves as a relaxation from sedentary occupations, as in that of gardeners. It is quite true that some classes of soils are more suitable to fruit culture than others, but my experience is that some soils are condemned when neither the soil nor the climate, but the culture alone, is to blame. Only the other day I met a person who has several hundreds of fruit trees in his garden, most of them young ones, and a considerable proportion are showing canker on the larger branches. I examined the soil, and found that it had not been

broken up more than 10 inches deep; and, further, all sorts of vegetable crops were planted close up to the trees. This system of culture can satisfy no one, and it cannot be profitable. I fancy many good gardeners will bear me out when I say that want of preparation of the soil and subsequent neglect of the special requirement of each class of trees is the sole cause of canker.

Having found a cause, I would suggest the remedy.

In the first place it may be remarked that heavy clay soils nearly always require to be drained, and a free outfall provided for the water. Three feet depth of drains is sufficient, with a main drain at the lowest part of the garden 3 feet 6 inches deep.

Secondly, trenching, or at least stirring, the soil to a depth of about 2 feet is necessary. But I would not invariably throw the subsoil up to the surface, but would always stir up the bottom to the depth of 8 or 9 inches with a fork, and if the soil could be trenched twelve months before planting all the better.

In the third place good healthy trees should be selected; they ought to be carefully lifted, and planted as soon afterwards as possible. Care must be taken to keep the roots in a moist state from the time they are lifted until they are again in the ground. Spread the roots out carefully when planting them, and work the soil well in amongst them. Trees on the free stocks should be planted the same depth as they were before. Those on the Paradise and Quince stocks, or, in fact, any dwarfing stocks, should be planted to the union of the stock and scion. It is also of great advantage to the trees to have a mulching of decayed manure around the roots after planting, and if they are exposed to high winds they ought to have some artificial support until they are well established.

Lastly, as to the pruning and training. I seldom do any pruning in winter. It is a more pleasant occupation in summer, and is a very simple operation, merely consisting in thinning out the young wood when it is too much crowded, and pinching off the points of any vigorous young growths that are likely to run out too far for the others. If they grow too much, it is easy to dig round the circumference of the roots, and to underneath to sever any roots that are running directly downwards. This will be enough to throw any tree into bearing. To allow a fruit tree to form a thicket of wood in the summer, and then to cut it all off in the autumn, is the right treatment for a pollard Willow, but will not do for fruit trees of any kind. There should be more reverence for life in the mind of the pruner than for such reckless pruning to be possible.

It is quite time that a better system of fruit tree culture should be adopted in small as well as in large gardens. Why should amateurs purchase fruit when they can grow it themselves, and have all the pleasure as well as the profits? It is useless to sit down and blame the climate, the soil, or anything else, when the real cause is a bad selection of varieties, or bad cultivation. Let the old worn-out cankered trees be rooted out from old gardens, and their places filled with approved sorts likely to do well in the neighbourhood, for each district has its special varieties.

Preparation of the ground by trenching and manuring is necessary, and whether the soil is light over gravel or a clay soil over heavy clay, the results will be satisfactory, and justify all the expenditure.

CANKER IN FRUIT TREES.

By EDMUND TONKS, Esq., B.C.L., Knowle, Warwickshire.

I HAVE been requested by Mr. Barron to contribute a paper for discussion at this meeting, and as the results of some experiments recently made by me appear to indicate that there may be a remedy for that worst of all diseases affecting fruit trees—canker, which is described in the *Herefordshire Pomona* as "the terror of all orchardists and the bane of most orchards," I thought it right to comply with the request. As my own experience scarcely extends beyond my garden, and numerous duties have prevented me from devoting even there that close and

continued observation which is necessary for the proper study of such a subject, I should have hesitated to intrude my crude notions in antagonism to the authorities if their views had been clear and definite; but as these are very vague, both as to the cause and the cure of the disease, I venture to state my own. Thompson, in the *Gardener's Assistant*, says:—"The cause is imperfectly understood, and so, consequently, is an effectual cure;" Mr. Fish, in *Cassell's Popular Gardening*, says:—"In fact it may almost be said to be incurable;" and the *Dictionary of Gardening*, the most recent publication on the subject, says:—"Were the causes better known, the remedy might generally be much easier found." Yet these, and most of the other writers on the subject, according to my ideas, indirectly indicate both the cause and the remedy for the disease, the cause being mal-nutrition, the consequence of an imperfect provision in the soil of the food required by the plant; the remedy, the supply of the food which is deficient. These writers inferentially indicate this remedy: for instance, Thompson recommends that "the soil be ameliorated, by trenching and other means;" Mr. Fish, in *Popular Gardening*, says:—"Lift the roots into higher places of warmth, and better and more immediately available supplies of food;" and the *Dictionary of Gardening* says:—"Trees that are badly cankered may be improved by lifting and replanting in improved or better drained soil."

Perhaps the most convenient method of dealing with the subject in detail is to analyse, paragraph by paragraph, all that is stated relating to canker by some recent and recognised authority; that splendid work, the *Herefordshire Pomona*, is possibly the best for the purpose, as it may be assumed to contain a summary of the most recent knowledge of all that relates to orchard growth. The first paragraph of the passage in that work relating to canker states that "it is always due to direct injury." In a controversy a clear and definite issue is most satisfactory, therefore with all submission I venture to assert that it is never due to such cause. That canker may appear in parts which have been injured is no proof that the injury caused the canker, although the injury may determine the particular spot where the disease makes itself visible. A well nourished and consequently healthy tree may be injured to any extent without development of canker, while an ill-nourished tree, or, to avoid begging the question, a tree infected with the disease, will develop in all parts the external signs without the slightest injury or abrasion of any kind, and very frequently on parts where, from their well-protected position, such as the angles of the branches with the main stem, it is almost impossible that injury could take place. The coincidence of canker and an injured part is no more proof of the former having been caused by the injury than that a hole in a building through which the flames of a conflagration are first visible is the cause of the fire.

The second paragraph states that "weakness is at the bottom of the canker." This weakness cannot be want of apparent vigour of growth, for I have frequently observed trees attacked which for a number of years have made the strongest growth, yet the disease has appeared before any external signs of weakness were visible, the very vigour of the growth in some cases appearing to hasten the attack in a soil containing too limited a supply of the necessary food, as that supply is sooner exhausted, and the time arrives when the large tree can no longer find within reach of its roots sufficient for its maintenance. It may be that only one element of food is failing, but every element is indispensable for perfect growth of the whole tree, and that failure would fully account for arrest of growth in parts, weakness and consequent disease.

The third paragraph is "the tree is old." This may be expressed in other words—the tree has for a long time been growing in the same soil. It is not difficult to realise that in the course of many years a tree may exhaust the most fertile soil. Many seem to overlook the necessity of restoring to the soil what is taken away year after year by large crops of

fruit. However rich the soil may have been originally each crop takes away a definite quantity of the food required by the tree, until in time insufficient remains; then the tree fails, not through age, but through inanition. The same gardeners who leave their fruit trees unfed would think it most unreasonable to expect them to grow their crops of vegetables without manure.

The fourth paragraph is, "or the variety is very old or very delicate." This raises the much-vexed question whether a seminal plant has a finite life, or one which can be prolonged indefinitely by propagation. Experience seems to prove that individual life has a limit, though there is evidence that many seminal plants have a very prolonged existence; however, the limits of this paper do not allow the present discussion of the question. It may be sufficient to say that observation does not lead me to believe that the age or delicacy of a variety renders it more like to canker when the soil contains what it requires.

The fifth paragraph suggests "that the soil is not sufficiently drained." Canker, according to my observation, occurs equally on well-drained as on ill-drained soils; it is not a question of condition of roots. My own garden formerly contained several trees rapidly succumbing to canker, which, when grafted with other varieties, at once put on healthy growth, made fine heads, and have since for many years been perfectly free from the disease. Each variety requires its own appropriate food; Strawberries afford a very good illustration of this. I have among my friends the reputation of growing this fruit to perfection, yet I had the greatest difficulty in finding varieties which would do fairly in my soil, and after trial of many more than a hundred, have so far discovered only about half-a-dozen which are moderately successful. British Queen refused to fruit; Dr. Hogg bore fairly as an annual, but did not survive to the second season—in fact all the Queen race and many other kinds only do more or less ill. Such being the case, it is not unreasonable to believe that some varieties of fruit trees find in some soils what they require, while others do not, and in consequence become subject to canker.

The sixth paragraph is, "or it (the soil) may be too poor." I quite agree with this, as I believe a deficiency in the soil of the necessary food of the tree is the cause of canker.

Seventhly, "The wood may be weak, and is not well ripened, when a sudden frost, especially after rain, ruptures the vessels, and this forms the chief cause of canker." Unripe wood, which is, however, often the result of imperfect nutrition, is productive of much mischief of a temporary nature; but as canker attacks well matured wood, I cannot believe it to be in any case its cause, although when the real cause is at work it may appear on such wood.

In the eighth paragraph the author repeats himself. "Any direct injury, however, to the bark of a tree, as from friction of one branch upon another, the pressure of a clothes' line tied from tree to tree, or injury from a ladder in fruit gathering, may all cause it, even in healthy trees." This calls for no further reply than that given to the first paragraph.

Finally, the author states that "Canker commences with an enlargement of the vessels of the bark, more apparent, by the way, in Apple than in Pear trees, and continues to increase until, in the course of a year or two, the alburnum dies, the bark cracks, rises in large scales, and falls off, leaving the trunk dead, and ready to break off with the first wind if not before removed. The canker shows itself quickly, and if the cause be sought for it will often admit of a remedy. The most usually effective is a good supply of nourishment to the trees affected, together with the removal of the parts injured." I confess that the preliminary symptoms described as the enlargement of the vessels of the bark have escaped my observation; but there appears to be some contradiction in the statement, as while the first symptoms of the disease are described as extending over a year or two, further on it is stated that canker shows itself quickly. However, although I

differ so much from the writer of the article in the *Pomona* as to the causes of canker, we are agreed on the remedy, namely, "a good supply of nourishment to the trees."

In 1886 my attention was specially directed to plant food, having been requested to write a paper on that subject for the Birmingham Gardeners' Association. In the same year, having noticed that a number of Apple trees in my collection had become unsightly through canker, I marked about a dozen of them for destruction; but while studying the subject of plant food, which involved the consideration of the analysis of various plants, I was very much struck with those of the fruit and wood of the Apple in Wolff's *Aschen Analysen*, the great authority on plant analysis. I found that the fruit contained an exceptionally large proportion of soda and the wood of lime. This at once suggested the idea that my soil might not contain sufficient of one or both of these elements to supply the wants of the Apple tree; therefore I resolved, instead of destroying the marked trees, to give them and all my Apple trees a good dressing of a complete artificial manure which contained full proportions of soda and lime. In the following season, 1887, which was exceptionally hot and dry, either through the drought, the manure, or some other cause, not a spot of active canker could be found; all the edges of the old wounds on the marked and other trees, almost as badly affected had put out granulations and healed over, and the trees, many of which had previously ceased to extend, made healthy and vigorous growth. Last winter the trees were again dressed with the same manure; this season they have been exposed to the most unfavourable conditions; the soil to a great depth was almost dust dry when they were making their first growth, while an army of caterpillars ruined what foliage was made. Then followed the most continuous cold weather and rain experienced for many years. Notwithstanding conditions so conducive to the extension of disease, there is at the present time still no appearance of active canker. The trees have been carefully inspected by some experienced pomologists who, doubtless will confirm my statement. Short as is the time during which the trees have been submitted to the treatment, I can only conclude that the arrest of the disease is due to the supply of elements of food required by the trees, of which a sufficient quantity was not previously contained in the soil.

The food required by a plant is a complicated mixture of many elements, all of which are necessary for its well-being; the complete absence of one of them would be fatal; a deficient supply of one would arrest its development, and render it subject to disease. Nothing is more instructive and conclusive on this point than the copies of photographs of plants grown for the purpose of testing the effect of manures more or less complete to be found in treatises on the subject. That of *Ville on Artificial Manures*, published by Longmans, contains many such illustrations, which clearly show that when the soil contains every element of fertility but one it remains absolutely barren. For instance, in a soil without potash, the Vine makes no growth.

It remains to say that the manures necessary to restore a tree to health vary as the soils, although the ashes of the wood of the Apple tree contains 71 per cent. of lime—an exceptionally large quantity—it would not be necessary to supply this element on a lime formation; nor would soda be required in a soil near the sea, although on other geological formations or situations a deficiency of one or both may be the cause of canker. Like conditions apply to the other elements.

Various soils require such manures as will supply their various deficiencies; but as it is most difficult to ascertain even by analysis what may be the deficiencies of a soil, the practical way of dealing with the subject is to study the analysis of the ashes of the plant in question, and to use a manure which is composed of these elements; for instance.

The ashes of the wood of the Apple tree contain:—Potash, 12.0; soda, 1.6; magnesia, 5.7; lime, 71.0;

iron, 0; phosphorus, 4.6; sulphur, 2.9; silica, 1.8; chlorine, 0.2. And those of the fruit:—Potash, 35.7; soda, 26.1; magnesia, 8.8; lime, 4.1; iron, 1.40; phosphorus, 13.6; sulphur, 6.1; silica, 4.3; chlorine, 0. Ville lays down the rule that soils generally contain sufficient of all the mineral elements except potash, lime, and phosphorus, and the gaseous element nitrogen, and says it is only necessary to supply to the soil manures which contain these four. This may be sufficient for the general purposes of cultivation, but more recent experiments have conclusively proved that the addition of a small quantity of iron largely increases the development of foliage, and consequently of the plant. In dealing with a mysterious disease such as canker, I should not leave out either iron or magnesia.

The following formula, which may be varied as circumstances require, is suitable for the Apple tree:—

Superphosphate of lime	...	...	12 parts.
Nitrate of potash	...	...	10 "
Chloride of soda	...	...	4 "
Sulphate of magnesia	...	...	2 "
Sulphate of iron	...	...	1 "
Sulphate of lime	...	...	8 "

This may be used at the rate of $\frac{1}{4}$ lb. to the square yard over the whole extent of soil within reach of the roots. It need not be dug in; one effect of the manure may be relied on, if it does not cure canker it will, at any rate, most certainly benefit the trees.

I hope you will excuse me for having questioned some of the conclusions of great horticultural authorities, but it seems that some of these conclusions have been accepted, without sufficient examination, as being time honoured traditions handed down through many generations. Gardeners are, in this respect, perhaps a little too conservative.

I think much may be learnt by occasionally departing from these traditions and making independent experiments in cultivation; my own experience proves that many such experiments resulted in failures, but there is full compensation if only one useful discovery be made, or one error exploded.

RENOVATION OF OLD AND FORMATION OF NEW ORCHARDS IN THE WEST MIDLANDS.

By W. COLEMAN, Eastnor Castle Gardens.

FIVE years having passed since the Royal Horticultural Society inaugurated the first comprehensive Apple Conference, the present Council has wisely decided upon testing the result of that important step by again calling together those interested in Pomology. A small minority at the time thought the exhibition of thousands of plates of Apples would not benefit the growers, but the consumers also. Since that time the growers' prospects have not improved, owing, they say, to the prevalence of low prices brought about by gluts and foreign competition. Buyers, on the other hand, say the supply is unevenly and irregularly distributed, and the price is too high when they purchase from the retailer. Growers say fruit culture will not pay until the land each man holds or occupies is as good as his own, or let to him on a very long lease, indeed; but present owners of the soil somehow do not seem to see the force of their argument, consequently the most important work the present gathering has before it is the framing of a scheme of open markets in which consumers can buy first hand at fair remunerative prices. This is all very well, but supposing each householder is in a position to buy Apples say, from day to day, where are those Apples to come from? Why, we must import them. Actually, we must trust to the Colonies for the produce of a tree which is indigenous to our soil, whilst thousands of acres of land capable of producing the finest fruit is going out of cultivation. To the Royal Horticultural Society should attach the honour of taking the initiative in working out this problem, but before the body can move we must learn from reliable men the progress which has been made in the great fruit-growing districts. Living as I do in the county of

Hereford, boasting its 27,000 acres of orcharding, where in days gone by thousands of tons of good fruit was lost, wasted, or converted into indifferent cider, I am able to form a pretty correct opinion of our own progress, and although less rapid than I could wish, I may say it is fairly satisfactory. Cider drinking amongst the working classes since I first knew the county has gradually decreased, consequently small parcels of the rosy Tom Pott and other useful Apples, alike good for cooking or vintage, are now stored for daily use by all the members of the grower's family. If not wanted, then they are sold to dealers, who make a profit, for conveyance to retailers, who also make another profit, and that a heavy one from their customers. Although a slight step forward, this state of the case is not quite satisfactory, neither will it be until a powerful fruit-growers' association, which should be the outcome of this Conference, has established a network of markets in all provincial towns as well as in London markets in which producers, as in all parts of Paris, can meet face to face with consumers without the aid of so many middlemen. In fruit growing counties, like Hereford, Worcester, Gloucester, Kent, Devon, and Somerset, these local markets should be well supported, as we gather from statistics that three-quarters of a million of money is sent out of England annually for Apples alone. If landowners, hitherto blind to their own interests, and legislators now take up the matter, I see no reason why growers should not go forth to the production of an article which the public must and will have, and so keep the money at home. Our climate is all that can be desired for the growth of fresh crisp fruit, not quite so highly coloured or so large as picked samples from the Colonies, but large enough to command top prices when well grown, and packed, and properly marketed. There must be no shaking from the trees, but the cream of the crop must be hand-picked, and honestly packed as firsts and seconds. The residue or refuse, which added to the best would increase expenses and pull down prices, would then remain at home for various purposes.

Mr. Knight, the great physiologist and hybridist, who worked so much in Hereford and Salop, proved by analysis that some soils, even in these favoured counties, were preferable to others for producing Apples of dense gravity, and full of saccharine matter. The late Dr. Bull, of whom Hereford should be proud, following in his wake, corroborated all that Knight had said, proving, I think satisfactorily, what past generations of shrewd men had found out for themselves, both as regards the quality of the fruit and the constituents of the soil which should be chosen for Apples, also for Pears. The conclusions at which they arrived were these: The light thin soils will not grow the best Apples; therefore, those who would plant a successful orchard, must choose a deep, stiff sandstone loam, if they have the opportunity of doing so. All the orchard land in this county is not alike good; indeed, some is very bad; but the soil here, as in Devonshire, which produces the best fruit, owes its fertility to the plentiful supply of lime from the marl or cormstone; to its great depth and sustaining nature. Scientists who will, may peruse the first part of the *Herefordshire Pomona*, or they may follow Mr. Rivers through his exhaustive address delivered at the Crystal Palace (see p. 289), but my remarks, necessarily brief, will guide plain practical planters to the best spots for new plantations.

Having been honoured by an invitation to contribute a short paper upon the Apple, I have determined to confine myself to the West Midland orchards, in which, I am pleased to repeat, some progress has been made since the first Conference was held in 1883. Draining, grubbing, grafting, and planting are still going on, but much remains to be done before we can invite inspection. Although the Apple is a long-lived tree, and perfectly hardy in all its parts, save its flowers, the occupants of many of our oldest orchards, crippled by age, bad usage, and neglect, are past recovery, and should be cleared away; but the ground they occupy should

not be replanted if better or equally good sites can be found for new plantations. Other orchards, again, containing thoroughly sound young trees, although of inferior sorts, after the grubber's axe has passed over the land, may be converted by grafting, and resuscitated by draining and top-dressing. Some of our oldest orchards, which date back to the Wars of the Roses, contain a great number of wildings, or kernel fruits, of no value to the owners even; whilst younger plantations are crowded with healthy, vigorous trees, at one time supposed to be Norman, but now proved to be English seedlings, no better than the stocks used in large nurseries. Upon the first I would not spend money, as they are too old for grafting, too old to pay rent, too old for anything save loss and disappointment. The second I would behead, and regraft with choice varieties which have been proved in the locality. Confining myself to old orchards now existing or languishing in the Western Counties, I may close my remarks upon this head by saying, Cut down all useless trees, thin out the heads of those worth keeping; cleanse the branches and stems from moss and insects; regraft sound, healthy trees into good market sorts, and see that the drainage is satisfactory. I will not presume to inform practical men who may deign to read my remarks that sound, deep, naturally drained orchards are better than others which require artificial treatment, and that a certain quantity of moisture in the soil is absolutely necessary, but on no account must it be stagnant. All gardeners are well acquainted with the fact that soils too dry produce fruit that is small and mealy, whilst waterlogged soils are several degrees colder than others of similar texture that are free from this root-chilling poison. They know, moreover, that warm summer rains run off the surface, whilst the sun acts very slowly in raising the temperature of the wet subsoil in which deeply seated roots soon perish, and those nearest the surface are little better off, as they do not commence fresh action much before midsummer. Drainage, all good cultivators assert, is the first essential in the preparation of new orchards or in the renovation of old ones, and why?—well, simply because the removal of stagnant, if not putrid, water and the introduction of fresh air raises the temperature of the soil from 3° to 5°, a condition which not infrequently forms the dividing line between success and failure.

So far my remarks have been confined to old orchards, planted haphazard upon all sorts and conditions of badly-prepared land, as well as in unfavourable situations. The best of these may be retained for a time, upon the principle that half a loaf is better than no bread; but the majority of them must go, and young ones must spring up before we can hope to realize an average £10 an acre, or compete with the colonists in our own markets. Some years, as many present know, have passed since horticulturalists commenced agitating, but the good seed which was intended to put three-quarters of a million of money into the British farmers' pocket for a long time fell upon stony ground. Some recently has taken root, and far-seeing landowners are now putting our theory into practice by offering land upon conditions that will induce capitalists to invest in fruit culture precisely as they do in coal and iron. In this and the adjoining counties good landlords are raising and distributing to their tenantry Apple and Pear trees by thousands. These mostly are standards on free stocks, the only class of tree suited to pasture and arable land. Nurserymen, again, who have brought propagation up to a fine art, are producing standards and dwarfs by the million, and these surely in a few years should make their mark. Meantime a complete network of markets, I insist, must be created throughout the kingdom.

From the preceding remarks, those who run may gather the fact that I do not set much value on the thousand of acres of ragged, decrepit, moss and lichen laden trees, but until the new plantations come into bearing we must make the best of them. Then, with Gladstonian vigour, we may hew them down, and let the Apple-sick sites go back to Hops, corn,

and pasture. Upon this principle change of site may be worked precisely as gardeners now manage their Strawberry plantations, and with similar results. I venture to say, one acre of modern orcharding will beat ten of the old—at least in the West Midland counties.

Already I am afraid my paper is too long, but having warned to my subject, I should like to say a few words upon the formation of the modern orchards I might divide them into several parts, such as aspect, site, soil, preparation, planting, the best style of tree manuring, mulching, pruning, and protection, gathering, storing, packing, and marketing, but my time being limited, my words must be brief and general.

Aspect and site being so closely dovetailed together these I will not attempt to separate. All gardeners, I believe, are pretty well agreed that a south aspect is best, as trees in this position ripen their wood well, and produce fruit of the highest colour and quality. The Apple, however, being perfectly hardy, the quality of the soil must not be lost sight of; neither must altitude and shelter from north and east winds be repudiated. Under these circumstances, the soil being deep sandstone loam resting on marl, and naturally drained, I should not object to a point east, or any other aspect round with the sun to full west. The latter, however, I should prefer, and for these reasons: although western gales in this part of the country do some damage, it is well known that if plants are exposed to the first rays of the morning sun when they are frozen they will suffer, but if they are shaded until they are gradually thawed by the rising temperature of the air they will stand a few degrees with impunity. An orchard open to the east or south-east is almost sure to suffer after an attack of spring frost when in full flower or setting, whereas one with a western aspect, which does not receive the sun until the temperature has risen and dispelled the frost often sets and carries full crops to maturity. Hardly a year passes in which the gardener does not find early crops of all kinds are safer and finer upon west borders than upon others; therefore, I think, few will deny that his experience is of great value to the planter. The site, I may say, should be above the line of fog, and it should not be too near or on a level with water. If naturally drained much time and expense will be saved, otherwise this operation must be well carried out as a preliminary to preparation. This may be performed in two ways, viz., by trenching two spits deep for pyramids or bushes, or by taking out large circular stations on grass or arable land, for standards. If trenching is decided upon, the bottom spit, if heavy and inferior, should not be brought to the surface, but it may be ameliorated by the addition of burnt clay from the drains, by road scrapings, or any other fresh friable material short of rich animal manure. This, unless the staple be very poor, I would keep back for use as a mulch after the trees are planted. On all ordinary loams young trees grow fast enough at first, but the time comes when they must be fed, otherwise they cannot be expected to yield, year after year, fruit of the finest quality.

In the preparation of stations for standards on grass or tillage ground I would throw off the top spit 9 feet in diameter, break up the bottom, and throw out clay or bad material to be carted away or burned. If cold or at all unfavourable to root-growth, exposure of the soil for a few weeks or months would greatly improve its quality. Otherwise, after correcting the bottom spit, that thrown off first, turf included, with anything in the way of road-scrapings or old lime rubble added, may be chopped in until the hole is quite full, or a little above the general ground level. A stout stake should then be driven down to the solid bottom, as a support for the tree when planted.

Planting may be performed at any time from the beginning of October up to the end of April. Autumn, however, is best, as the roots at once take to the soil and the trees make a fair growth the following summer. October and November undoubtedly are the best months—that is, provided the land is in

perfect condition and the weather favourable; but so important is getting the trees into the ground when it is fairly warm and dry, that I would rather defer planting until April than risk placing the roots in a pasty medium. Trees of home growth, that is, from one's own nursery, which every fruit grower should have, may be planted much earlier than others brought in direct from a distance. All trees should be carefully divested of faulty or injured roots by a clean cut with a sharp knife; they should never be allowed to become dry, and each root and fibre should be spread out in a horizontal position, lightly covered, and watered home.

In the arrangement of trees, the rows, if convenient, should run from north to south, or north-east to south-west, as three out of the four sides then receive an equal share of sun and light. The old fault of planting them too close should be carefully guarded against, as good fruit cannot be expected when the heads grow into each other and the roots are constantly shaded. Standards of upright-growing varieties may be placed 30 feet apart each way, whilst 40 feet will not be found too much for spreading trees like Flanders Pippin and Blenheim Orange. Trees, again, of one variety, or a similar habit of growth, and which ripen their fruit at the same time, should be kept together, or in rows, alternating with others of a spreading or upright character. By observing this rule at the outset the general and orderly appearance of the nursery will be greatly improved, and much time and labour will be saved when gathering the fruit. The same rule applies also to pyramids and bushes which, by the way, should have plenty of room for extension in every direction, as no extensive planter can afford to prune close home upon villa garden principles, especially when the best of the fruit is cut away by the process. Thinning the shoots and branches annually of course is necessary, but beyond this and maintaining the balance by tipping a gross shoot, I should let each tree go. The distance apart will depend upon the kind of stock, as trees on the French Paradise may be grown for years at distances of 4 to 6 feet apart each way. On the English Paradise or Doucin, which I like best, they grow stronger; consequently more room is required. Twelve feet from row to row, and 6 feet from tree to tree, will give them room for a long time, but eventually it may be necessary to transplant every alternate tree, when those left will stand equidistant, viz., 12 feet from stem to stem. Some I know plant much closer, but when it is borne in mind that a well-developed head turns off not only more, but better fruit than a small one, abundance of room is a decided advantage. Moreover, plenty of space favours a spreading growth, which keeps the heads near the ground, safe from wind and easy of access for pruning, manipulating, and gathering. When standards are planted they should be well secured to the stakes previously driven, but in a way that will allow them to settle with the subsiding soil, otherwise the roots will drag and strangle. If on pasture land, they should be well protected from sheep and cattle, and the orchard itself must be fenced and wired round to keep out hares and rabbits.

Varieties.—The only point I must now venture to touch upon is the selection of varieties for special soils, situations and purposes. A few years ago we planted very early sorts for coming in before the American importations, but this is now over, as the quick run, and summers hotter than our own combined, enable our friends to be abreast of us at the beginning, as for a long time they have been at the end of the season. Our only way out of this dilemma, as I have before observed, is high cultivation. We have a climate which ripens fruit crisp, tender, and juicy, not quite so highly coloured, perhaps, but in my opinion superior to the general run of American. We have the soil which, thanks to yearly tenancies, nobody cares to till; and we have the ability. All we want is quality, then it matters little whether we market early or late, always provided we confine ourselves to a few of the best sorts which do well in the locality. This hackneyed phrase for a long time

puzzled would-be growers, who said, "Where must we look for anything better than a Suffield or a Blenheim?" Well, I am not sure that anyone requires anything better, but if they do, they must just look into any of the great well-known nurseries about the end of September, and there they will find thousands of trees of all the leading kinds carrying fruit of the highest quality. Some of these on dwarfing stocks—just the thing for the garden or home nursery—will be loaded with large, bright fruit, of which at the present time we ought to have 100,000 tons ready for storing. They will find also standards on free stocks specially prepared for planting on pasture and arable land. From these they may select scores or hundreds of trees of one sort, and so on of another, but on no account must they select one or two trees each of a hundred sorts, as this plurality is a great drawback to commercial culture. Very early sorts generally go direct from trees to the market; medium and late sorts must be stored in dark, cool fruit-rooms or dry cellars, and this accommodation, or the want of it, must be the guide in making a selection.

Gathering, storing, and marketing hitherto in the Western Counties has not received proper attention; but a great improvement is now taking place, and the day, I hope, is not far distant when ruthless shaking the boughs will be looked upon as a barbarous custom of the past. Apples worth growing are worth hand-picking, and when hand-picked they are worth sizing—that is, dividing into two classes before they are stored or sent to market. The best only should be sent away; seconds may be retained for home use, or consumption in the neighbourhood. There should be no mixing of sorts, or good and bad together, but one uniform quality should prevail. Buyers in this part of the country still stick to their pots. I do not mean earthenware, but wicker, which hold from 5 to 7 pecks each; but invariably they sell by weight, and this, I think, is the fairest way, as anyone can compute the value of a ton of Apples. Before Apples are hand-picked for storing they should be ripe, that is to say, the kernels should be brown and somewhat loose in their cells. The fruit, moreover, should be perfectly dry and free from spot or blemish, as one black sheep soon demoralises the flock. Once put away the less they are turned or handled the better, especially when sweating or during frosty weather.

If the store-room is fitted with lath shelves, the choice varieties should be placed one, or at most two layers, thick, but late sorts grown in great quantities may be laid upon dry floors in greater bulk. They may be stored also in dry flour-barrels, which should be labelled and put away in a low even temperature for the winter. Good aristocratic store-rooms are rather expensive; but a cutting driven into a dry bank and covered with thatch, with double doors at one end, will make a store equal to the best and most elaborate in the kingdom. Resinous wood should never be used in the manufacture of shelves; neither should hay or straw be admitted within the walls; as all these materials impart a disagreeable flavour. Dry Fern, on the other hand, may be used for covering purposes, but very little of this will suffice where frost, and more especially heat-proof, stores are properly constructed.

APPLE AND PEAR GROWING IN JERSEY.

By CHARLES B. SAUNDERS.

THE island of Jersey, being so noted for the growth and cultivation of fine fruit, especially Apples and Pears, I venture to offer a few remarks upon the modes of culture and the varieties cultivated, thinking they might be acceptable to the committee, and also to the general body of horticulturists interested in the production of these health-giving and palatable fruits.

Jersey being the most southerly of the group of islands in the Bay of St. Michael's, and the slope of the land being from north to south-west, enjoys a very favourable climate; the general moisture, owing to its position and the saline air, which almost

always may be felt blowing over its surface, renders it peculiarly adapted to the growth of Pears. The soil is a good loam upon a substratum of clay retentive of moisture, which suits the Quince stock, upon which most of the Pear trees are budded or grafted. There are localities along the coast of which the soil is much mixed with sand, owing to the continuous drift in stormy weather, whilst some parts of the western side of the island are so much exposed to the Atlantic Ocean as to be entirely unfit for fruit culture, and scarcely worth cultivating, the cereals and root crops growing upon them being very often subject to serious injury from the force of the westerly gales. Now it is easy to understand why the most protected and best sheltered situations are selected for the growth of the finest and best kinds of fruit. Apples are grown on the higher and drier parts of the island, where the land is stiff enough and the drainage good; hence the orchards, where the more ordinary kinds are grown for the manufacture of cider and general consumption, are generally surrounded by hedgerows from 5 to 8 feet high, and planted with Elm and other descriptions of forest trees. The Apple trees in these orchards are generally grafted 6 feet from the ground, and have spreading circular heads, which are perfectly beautiful when in bloom. Very many of us can recollect when the Weigelas of sorts were first introduced, that their great recommendation was that they were as "beautiful as Apple blossoms." Were not Apple blossoms beautiful before then?

These orchard trees, which make such a beautiful display of flowers and produce in favourable seasons such an abundance of fruit, are much neglected, and allowed to grow in a confused mass of branches. To scientific horticulturists it seems a pity that, where Nature does so much, man should do so little in the way of pruning, so as to give the trees a more regular form and better appearance. You will, I think, agree with me that judicious pruning—i.e., removing weak and superfluous branches—would have the good effects of improved appearance, more healthy growth, and finer fruit. The general character of the growth is so vigorous as to render it unnecessary to prune the extremities of the shoots, except for the sake of shaping the trees and balancing the heads, but "thinning out" is the style of pruning requisite.

The finer descriptions of Apple fruit are grown in gardens sometimes against the walls, on espaliers, or on the long cordon system. The dwarf cordon is not much practised, nor is it desirable, inasmuch as the growth, in spite of the Paradise stock upon which the trees are usually worked, becomes so strong that it requires constant cutting back to keep it within the desired limits, and this constant repression of growth is not conducive to fructification.

The finest Ribston Pippin Apples are grown upon south walls in sheltered gardens, trained upon the fan system—the strong radiating shoots being selected to form the frame of the trees, and the lateral and weaker branches being pinched and pruned off, so as to get fruit spurs to form. It is an excellent system, barring the disadvantage of the early maturity of the fruit. Very few other sorts are thought worthy of wall culture. The dwarf bush, the open standards, the rider or tall standard trees are all acceptable forms of garden trees, where the space is sufficient; and such varieties as Early Stibberd, Red Astrachan, Lord Suffield, Hawthornden, Red Quarrenden, Hooper's Seedling, Downton King, Golden and Walton Pippins, Grand Alexander, Cox's Pomona, and Orange Pippin, Court of Wick Pippin, English and Dutch Codlins, &c., are grown freely on Paradise as well as other stock, and take but little space. It is not unusual to see crops of fruit considerably above the weight of the trees producing them. Planting Paradise stock Apple trees in rows 6 feet apart, and the trees at 3 feet apart in the rows, suggests a system of culture which might be made remunerative, and were it not for the constant changing of tenants from one piece of land to another, might be advantageously practised. It is

(For continuation, see p. 448).

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APPOINTMENTS FOR THE ENSUING WEEK.

MEETINGS.

TUESDAY, Oct. 23, Royal Horticultural Society: Fruit and Floral Committees.
WEDNESDAY, Oct. 24, National Chrysanthemum Society: Floral Committee.

SHOWS.

WEDNESDAY, Oct. 24, Royal Botanic of Manchester: Apples and Pears (four days).
THURSDAY, Oct. 25—Exeter Apples and Pears.

SALES.

MONDAY, Oct. 22, Dutch Bulbs, at Stevens' Rooms. Dutch Bulbs, at Protheroe & Morris' Rooms. Nursery Stock, at Mr. C. Noble's, Sunningdale, by Protheroe & Morris (six days). Nursery Stock, at the Grove Park Nursery, Lee, by Protheroe & Morris.
TUESDAY, Oct. 23, Dutch Bulbs and Liliun auratum, at Small & Co.'s Rooms.
WEDNESDAY, Oct. 24, Nursery Stock and Greenhouse Plants, from sample, at Protheroe & Morris' Rooms. Golden Euonymus and Young Conifers, at the Wood Lane Nursery, Isleworth, by Protheroe & Morris.
THURSDAY, Oct. 25, Dutch Bulbs, at Stevens' Rooms. Liliun auratum, African Tuberoses, Lilies, and other Plants, at Protheroe & Morris' Rooms. Azaleas, Lilies, and Dutch Bulbs, at Small & Co.'s Rooms.
FRIDAY, Oct. 26, Dutch Bulbs, and Liliun auratum from Japan, at Stevens' Rooms. Dutch Bulbs, at Protheroe & Morris' Rooms.
SATURDAY, Oct. 27, Duplicate Plants from the Collection of F. G. Tautz, Esq., at Messrs. Protheroe & Morris' Rooms. Azaleas, Dutch Bulbs, and Lilies, at Small & Co.'s Rooms.
Dutch Bulbs, at Stevens' Rooms. Dutch Bulbs, at Protheroe & Morris' Rooms.

The Fruit Congress,

In spite of the many and sore reverses that the Royal Horticultural Society has had to endure, there is still an amount of vitality in it which if properly directed by those at the head of affairs, must lead to ultimate and permanent success. The magnificent display of Apples and Pears that has this week been made in the Society's gardens at Chiswick, brought together without fee or reward, from all parts of Britain, must surely have convinced the Council that the Society has only to continue in the course it now appears to have embarked on—namely, that of carrying out a strictly horticultural policy—to receive the unwavering support of horticulturists generally. The opening of the exhibition on Tuesday was decidedly a red-letter day in the annals of the Society, not only by reason of the number and quality of the exhibits, but also for the fact, that President and Council were present in full force; once again, after many years of neglect, the head-quarters of the Society was really visited by its President and Council, all of whom, it is to be hoped were so impressed with the enthusiasm that their invitation to exhibit had aroused amongst fruit growers generally, that future laxity of duty, so far as regards visits to Chiswick, are at an end.

With regard to the special aims of both exhibits and Conference, namely, the extended and improved cultivation of Apples

and Pears, as a means of profit and an auxiliary to agriculture, horticulturists of all grades are in entire sympathy. To avoid disappointment and failure it may, however, be necessary to warn those not conversant with fruit culture, but who, enamoured by the sight of many hundreds of dishes of splendidly coloured Apples, and but slightly inferior Pears, may be inclined to embark in their cultivation, that this show of Apples and Pears is something above the average standard of excellence that they may themselves annually expect to realise. Dissent from this opinion is sure to be rife, in presence of the extremely unfavourable season we have passed through. It will be argued, "Surely, if in such an exceptionally cold and sunless season so high a standard has been attained, it is only reasonable to expect that at least as high a rate of excellence will be possible in the average of seasons." This is a great fallacy; first, because every dish shown contains selected fruit of the particular variety; and secondly, because not a few of the collections have many dishes of fruit that have not been grown in the open air at all. What renders the exhibits of this section the more misleading is, that the exhibitors have, in most cases, not taken the trouble to state that the examples were the products from glass structures. This is a serious error, and one that, in all future exhibitions, should be avoided, by the adding of a class, or classes, for orchard-house fruit. There is one other respect in which it is possible that some intending planters may be misled, and that is, in respect of the varieties of Apples and Pears best adapted for certain districts. For instance, the schedule asks for 'twenty-four varieties of Pears best adapted for the exhibitor's district. A difficult demand in any season for the largest grower to comply with, and specially so in this year of scarcity of this fruit in many parts of the kingdom; and to the credit of the exhibitors only two or three have attempted the task. At the time of writing we have not seen the jurors' awards, or commendations of the most meritorious exhibits or varieties; not do we know what the readers of the various papers may have to say on this head, but we should prefer the decision of either body, rather than any collection that has been got together under such unfavourable weather conditions as have prevailed this year. On the other hand, it may, with truth, be asserted, that fruits that have turned out well in such a season must of necessity do so in more favourable seasons, and if production—i.e., growth of fine fruit—were the *fiat*, we should not have a word to say against this view of the matter. But we require, not only well grown and handsome, but long-keeping fruit, and the keeping powers can only be had by plenty of sun-heat.

Both Exhibition and Conference are undoubtedly calculated to do great good, and it is with a view of making this good a permanency that we have thought well to allude to one or two of what we consider the weak points of this matter.

One result of the Conferences of 1883 and 1885 is conspicuously apparent at the Conference ending to-day, namely, that of the correct naming of the fruit, there being very few wrongly named exhibits, either amongst Apples or Pears. Add to this the fact that fruit cultivation has been taken up by, and is largely on the increase amongst farmers, as well as professional growers for market, and that at least a part of this increased activity in fruit cultivation—bad season and notwithstanding—may safely be credited to the influence of former Conferences. These are results

that may well stimulate the Council of the Royal Horticultural Society to continue their present line of policy till the numerous special societies that have sprang into existence owing to previous apathy shall have been merged into an indissoluble because a united society.

This action of the Society is of the more importance at this juncture, as its operations and its decisions will, and deservedly, secure an amount of credit with the general public which other associations got up merely for private ends, however legitimate, can never do. No one doubts that the increased cultivation of well selected fruit, carefully grown, and judiciously marketed—if we may coin the word—will be of material benefit to the depressed agriculturist, and especially to the small cultivator; but to hold out the promise that fruit culture is to be an El-Dorado—"the salvation of British agriculture"—is to raise hopes that can never be realised in this, or, indeed, in any other country.

DRAGON TREES IN MADEIRA (see Supplementary Sheet).—The garden with the Dragon trees shown in our illustration is in the environs of Funchal, and is known as the Quinta do Til, that is, the country-house of the Oreodaphne foetens, one of the native Laurels, the stump of an old tree remaining in the ground. The curious but uncouth Dragon tree, a near ally of the Lilies, is also an indigenous plant but so few wild specimens are left on the island that they may almost be counted on the fingers of one hand. Trees are, however, to be seen in several gardens, the finest being at The Mount, 1800 feet above Funchal, but there is not one that approaches the age of the venerable tree that grew at Orotava, in Teneriffe, and was blown down in a storm in 1868. A branch of this celebrated tree is preserved in the Museum at Kew, and the tree itself was illustrated at p. 713, June 9, 1888. The house in the illustration was erected some three generations ago by one of the British wine merchants, who planted it on a large scale, intending to build a palatial residence. But bad times came, and only a part of the design was carried into effect. There is a tank in the grounds to which a melancholy interest is attached, for in it the statesman CANNING's only son, a captain in the navy, was drowned whilst bathing. Our illustration, as also the one that preceded it, was taken from a photograph obligingly communicated by T. HARCOURT POWELL, Esq.

FRUIT DRYING INDUSTRY AT PORTICI.—We have received the following notice for publication from the Agricultural Department, Privy Council Office, 44, Parliament Street, Westminster, S.W., dated October 13:—

"Sir,—I am directed by the Lords of the Committee of Council for Agriculture to inform you that an intimation has been received from the Italian Government that the Exhibition of Fruit Drying Industry, which was to have taken place at Portici during the month of September last, has been put off until September, 1889.—I am, sir, your obedient servant, C. L. FEEL."

THE UNITED HORTICULTURAL BENEFIT AND PROVIDENT SOCIETY.—On the 13th inst. the annual dinner of this Society took place in the Cannon Street Hotel. There was a large attendance of members and visitors, with Dr. Hogg in the chair, and H. J. VEITCH, Esq., in the vice-chair. The Chairman, in proposing prosperity to the Society, pointed out that the Society is not a provident and charity Society, but a trust Society, in which the surplus funds are divided among the members, and invested for them in stocks. The funds of the Society consisted of three different accounts, viz., the benefit or sick fund, out of which payments were made to sick members, who in order to enjoy this advantage need not of necessity be totally incapacitated from work. Then there was the management



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DRAGON TREES IN THE GARDEN OF W.P.HINTON, MADEIRA.

fund, which is used to meet current and office expenses, &c.; and lastly the benevolent fund, out of which grants were made in cases of unusually heavy doctor's bills, and such like cases. He urged that persons wishing to aid the Society should give to the management fund. This was responded to by Mr. N. COLE, one of the oldest members of the Society. H. J. VEITCH, Esq., proposed kindred societies, saying that the one helped the others all round, and did not by any means clash. Messrs. R. CUTLER and G. DEAL replied. Mr. J. WRIGHT, in speaking for the Trustees and officers of the Society, said that the weakness of the organisation was in the management fund, and that the best way to aid the Society was by assisting this fund, which would enable the Society to make itself better known than it was now. Messrs. WHEELER, CHARD, and COLLINS replied. It was announced that Dr. Hoge had made a donation of £12, and that Mr. SHEERWOOD had become a life member. The evening was pleasantly passed, and the proceedings were enlivened by ably rendered music under the direction of Miss MARIE BELVAL, the ladies of the party being presented with handsome bouquets. The tables were tastefully decorated by the kindness of Messrs. LAING, CANNELL, CHARD, and others.

NATIONAL AURICULA SOCIETY: NATIONAL CARNATION AND PICOTEE SOCIETY.—The annual general meeting of the above Societies will be held in the room of the Horticultural Club, Hotel Windsor, Victoria Street, on Tuesday, October 23, 1888, at 4 P.M. precisely. The business of the meeting will be, the election of officers and committee, receiving the Secretary's and Treasurer's reports, the election of judges for the ensuing year, and any other necessary business as may pertain to the annual general meeting.

NATIONAL CHRYSANTHEMUM SOCIETY.—In order to add to the attractions of what is now the great Chrysanthemum show of the year, which is to take place at the Royal Aquarium on November 7 and 8, a large space within the building will be devoted to horticultural sundries, including model greenhouses, hot-water appliances, manures, &c. Applications for space have to be made to the Hon. Secretary, Mr. WILLIAM HOLMES, Frampton Park Nurseries, Hackney, E.

"THE ORCHIDEENNE."—The first meeting of this newly-established Society for encouraging the culture of Orchids among amateurs, was held on the 11th inst. in the exhibition-hall of the "Horticulture Internationale," Brussels. In spite of the unfavourable weather, eighty-five species and varieties were exhibited. The jury consisted of M. DE LANSBERGHE, Chairman; Secretary, M. WALLAERT; and MM. MASSANGE DE LOUVREX, F. KEGELAN, and others. A Diploma of Honour was awarded to M. LINDEN for *Catasetum Bungeorothii*, with twenty-three flowers on two spikes. First-class Certificates to M. PEETERS, for *Odontoglossum vexillarium superbum*; Chevalier LUIGI MODIGLIANO, for *Cypripedium Sanderianum*; M. VAN HOTEN, for *Masdevallia chimæra*; M. MASSANGE DE LOUVREX, for *Cypripedium vexillarium*; Count DE BOUSSIES, for *Vanda Sanderiana*; M. MASSANGE DE LOUVREX, for *Cypripedium expansum*; M. LINDEN, for *Oncidium crispum miniatum*; J. O'BRIEN, for a collection of dried flowers of various species of *Disa*, *Satyrion*, &c., from South Africa; E. VERRAET & Co., for cut flowers of *Cypripedium Harrisianum superbum*; M. MITTEAU, for cut flowers of *Miltonia Moreliana*. Second-class Certificates were awarded to M. LINDEN, for *Oncidium varicosum Rogersii*; PEETERS, for *Cypripedium expansum*; MOENS, for *Lælia Perrini*; PEETERS, for *Cypripedium regale*; and a Second-class Cultural Certificate to M. MOENS, for *Oncidium phymatocheilum*.

THE FUNGUS FORAYS.—We have received accounts of the doings at the Woolhope Club meeting and in the New Forest. On both occasions the weather was all that could be wished, but the supply

of fungi in Herefordshire was but scanty. When our readers have digested the fruit served up to them in such profusion, there may be a chance of a hearing for the fungi. In any case, we are compelled to postpone the record of the meetings in question.

ANAGALLIS PHILIPSI, Hort.—This is, says Mr. Lynch, one of the very best of blue-flowered annuals. It flowers all summer and produces a flower in the axil of every leaf measuring more than an inch across, of cobalt-blue colour. The plant is procumbent in habit, with strong ascending branches which are four or five angled, bearing lanceolate leaves, opposite below but in whorls of three or four above. The peduncles are longer than the leaves, sepals linear-lanceolate, corolla rotate with finely erose margin, filaments clothed with rosy hairs. The base of the corolla is also rosy, but without lessening the intense blue of the floral mass. DE CANDOLLE says the plant is perennial, but in the Cambridge Botanic Garden it is annual. It is referred in the *Prodromus* to A. collina (var. fl. cœruleis), and it is also the A. Monelli var. Willmoreana of *Bot. Mag.* t. 3380, which figure precisely represents the plant, but without demonstrating its ornamental character.

FRUIT CULTURE IN IRELAND.—The following letter, addressed to the Lord Lieutenant of Ireland, has been handed to us for publication:—

"What strikes me most painfully in Ireland—except in parts of the semi-Scotch province of Ulster—is the remarkable absence of those accessories to agriculture, which are indispensable to the success of small holdings everywhere. I do not here allude to the flax industry, peculiar to north-eastern Ulster, but to fruit-farming and market-gardening. Had Mr. GLADSTONE's famous big Gooseberry growing remedy for the depression of British agriculture been specially addressed to Ireland, he would undoubtedly have been on the right track.

"For, in Ireland alone, the economic conditions necessary to its success, already prevail, viz., farms so subdivided as not to afford a comfortable maintenance, except on the intensive, or market-garden system of cultivation, together with the prevalence of abnormally large families. In the wives and deft-fingered children of the 300,000 impoverished so-called farmers, below £10 valuation, you have ready at hand, and crying out for employment, an abundant supply of the personally-interested and delicate labour, required for sowing, thinning, transplanting and gathering the finer kinds of vegetables and all bush fruit.

"The mild and moist climate of Ireland, where sufficient sun heat cannot be relied on for ripening the larger kinds of stone-fruit, is peculiarly favourable to the free growth of Currants, Cherries, Raspberries, Gooseberries, Filberts, Walnuts, and fairly adapted to Strawberry, Apple, Pear and Damson culture.

"Most kinds of vegetables will do well everywhere in Ireland, and her warm and moist south coast might rival the Channel and Scilly Isles in the production of early Peas, Potatoes, Seakale, Broccoli and Rhubarb. The finer kinds of vegetables are unaccountably scarce at all times in Dublin, where two-thirds of the fruit consumed is not grown in Ireland.

"Not only should Ireland grow all the fruit and market-garden produce she needs for her own consumption, but with her early springs and her weather open to Christmas, she ought to supply the teeming populations of the north of England and Scotland with both early and late garden produce.

"Dairying must always, of course, be a main feature of Irish farming; but it, too, in the case of the smaller holdings especially, should be combined with fruit-growing. Every farmhouse everywhere, of whatever sized holding, should have an orchard attached.

"Now that the Irish farmer has no longer anything to fear from confiscation of his improvements, he has only himself to blame if he does not turn his land to better account. But he still needs two things, namely, skill and enterprise—the inestimable inheritance of the foreign peasant, who beats him in the British market.

"If the present generation of Irish farmer is well nigh hopeless, much may be done with the next, and it seems the most obvious duty of the State to take the matter in hand.

"Were half an acre, or even a rood, of garden ground, for the purpose of the practical application of the science taught within, attached to every country school in Ireland, and the produce of the scholar's labour allowed, as a perquisite of the school teacher, an immense impulse would be given to gardening in Ireland. Horticulture, in my opinion, rather than agriculture, is practically adapted for teaching in connection with the national schools. The same teacher, at suitable times and seasons, can both theoretically and practically, teach gardening both to boys and girls, whereas it seems obvious that practical farming instruction can only be imparted in connection with a farm—an impossible adjunct to all but a few schools, and requiring a special farming instructor.

"To teach farming there should be at least one counterpart of Glasnevin in each province, and I venture to think that the existing 5 acre farm there, which at present really illustrates nothing in particular, should be made a model of what a 5 acre farm should be for an industrious peasant to get a living out of, in illustration of the combined method of gardening and farming suggested above.

"Although I have here only dwelt upon the most obvious and universally possible accessory to farming, I fully recognise the necessity for promoting every feasible form of home industry in Irish villages, such as wood-carving, basket-making, joinery, lace-making, embroidery, knitting, straw-plaiting, &c., to eke out the family income, and employ idle hands during the long winter evenings. W. H. (Bullock) Hall, J.P."

HORTICULTURAL CLUB.—The first dinner and *conversations* for the session 1888—1889 took place on Tuesday last, October 16, at the new rooms of the Club at the Hotel Windsor, Victoria Street, Westminster, when there was a very large attendance, including Mr. John Lee, Chairman; the Rev. W. Wilks; the Rev. F. H. Gale; Messrs. H. J. Veitch, J. Veitch, Strange, Walker, J. H. Pearson, C. Pearson, A. H. Pearson, Bunyard, Rivers, Drury, Girdlestone, Goldring, Morris, &c. The subject for discussion was Peaches, and was opened by a very interesting paper by Mr. T. Francis Rivers. A discussion took place afterwards, in which Messrs. Lee, G. Bunyard, H. J. Veitch, Pearson, Goldring, and others, took part. A vote of thanks was given to Mr. Rivers, and the Secretary announced that at the meeting in November, Mr. George Bunyard would read a paper on November and December Pears; and in December Mr. Charles Pearson one on the Chrysanthemum. Unqualified approbation was bestowed on the new arrangements for the Club, and a very agreeable evening was spent.

BRITISH FRUIT GROWERS' ASSOCIATION.—The executive committee appointed at the first Conference, held last month, submitted at the meeting at the Crystal Palace on Thursday last a draft constitution, which stated that the objects of the Association would be to promote the profitable culture and the improvement of fruit in the United Kingdom and to facilitate the distribution to consumers. The Chairman (Mr. T. F. RIVERS) said the inception of this Association was wholly due to Messrs. GORDON and CASTLE, who a few months since began the organisation of a society which, he thought, had succeeded in drawing the attention of the people of England to the important fact that a large and lucrative industry was being silently withdrawn from our country, to the great advantage of those who had skillfully taken advantage of our apathy and indifference. The United States, Canada, Australia, and New Zealand were all on the alert to supply our markets with a commodity which they were supposed to be unable to furnish. Were they to sit with folded hands and allow this to be done? Were they to complain that their inability was owing to landlords, land laws, railway rates, or middlemen? In his opinion they had nothing to do with it. The profits derived from judicious fruit-cultivation were sufficient to cover the moderate and fair rents now asked for land. The real and fundamental cause was ignorance, not arising from want of intelligence or energy, but from the fact that no organised society, school, or college had ever undertaken seriously to teach the methods by which fruit-cultivation might become successful.

The State spent a large sum on botanical gardens with the most useful result, but it did not at present give any encouragement to an industry which was of serious importance to the land. One of the aims of their Society would be to draw attention to this omission, to rectify their past errors, and to place pomology in the rank which it should take as a science of high economic value, instead of being regarded as harmless and rather twaddling. The other aims and objects of the Society would be to invite discussion, to hear papers, and to organise meetings in different parts of the country, in order that a special knowledge of pomology might be diffused as widely possible and intending planters furnished with information which would lead to success instead of failure. Mr. J. WRIGHT read a paper on "Profitable Fruit Farming," mainly Gooseberries, giving an interesting account of how they were grown on the fens of Lincolnshire on an extensive scale, and with great success pecuniarily. Mr. D. TALLERMAN read a paper on "Practical Fruit Growers' Associations," in which he pointed out that fruit, at present very little cultivated in any county in England and said that in four-fifths of the kingdom, more particularly in those districts which were in proximity to large industrial centres of population, so far as fruit-production was concerned, the soil was a barren waste. If the desire of the founders of the Association were successfully obtained, it would simply revolutionise the existing condition of fruit cultivation and the course of procedure that the fruit cultivators of the United Kingdom had hitherto followed. Foremost among the subjects on which fruit-growers required information stood the economical production of early and late crops. In no way could such large prices be obtained in fruit-growing as by early production. Foreign produce which reached our shores from the South of France, Italy, and the Mediterranean, early in the season, not only made long prices, but also took away the edge of the taste of the paying public for fruit. With Practical Fruit Growers Associations formed and at work in all parts of the kingdom this condition of things would not last, and sooner or later our fruit-growers would produce early fruit that would successfully and profitably compete with anything that could be imported from abroad. The question of scientific irrigation would also repay the Society for any attention which might be bestowed upon it.

ORCHID NOTES AND GLEANINGS.

RODRIGUEZIA (BURLINGTONIA) FRAGRANS.

This charming Orchid, a native of Brazil, appears to be better known on the Continent than in this country, where it is not often seen. The name is included in the catalogue of some continental nurserymen, and a figure appeared in the *Orchidophile* in 1884. It is flowering now at Kew, and is conspicuous by the beauty and Hawthorn-like fragrance of its flowers. The pendent spikes carry about ten flowers, each flowers being $1\frac{1}{2}$ inch in length. The sepals and petals are of a glistening white, slightly tinged with purple on the outer side; the lip is deeply bilobed, and fringed at the margin; it is also white, with the exception of a few lines of yellow on the centre. The habit of the species is that of a large *R. secunda*.

When growing, this Orchid like a warm, atmosphere, and a free supply of water at the root. Even in winter water should only be withheld in accordance with the lessened amount of light and heat, as it requires but little rest. The plant under notice is growing in a basket of sphagnum, and carries four spikes. *W. Bean*.

LULIA PERRINII ALBA.

A large specimen of this chaste autumn and winter flowering Orchid, in whose large pure white flowers no trace of colour exists saving a faint sulphur-yellow tinge in the middle of the labellum, is now in flower in the collection of R. H. Measures,

Esq., at The Woodlands, Streatham. The plant in question has fourteen flowers, and was obtained from Messrs. F. Sander & Co., of St. Albans, with a warrant that it has quite borne out. White Perrinii are often heard of, but on examination the white has more or less of pink in it; however, in this case there is not the slightest suspicion of colour, and in size the flowers are equal to the best type, *J. O.E.*

CATTLEYA HARDYANA.

A specimen of this rare natural hybrid between *C. aurea* and *C. gigas*, with over one hundred bulbs and ten leads, now bears several spikes of gorgeous fragrant flowers, apparently exactly the same as the original plant, is in bloom with R. H. Measures, Esq., at Streatham. The plant was a lucky speculation, it being bought unflowered as *C. gigas* variety out of an importation of Messrs. F. Sander & Co. In the Woodlands collection, also, a specimen of the beautiful *Oncidium undulatum* bears sixty-eight expanded flowers; *Cymbidium elegans* has eight spikes carrying over three hundred blooms; and a large number of rare *Cypripediums* are in flower and bud. *J. O.E.*

SEASONABLE NOTES ON HARDY FLORISTS' FLOWERS.

THE AURICULA.—At p. 67 I wrote of gathering seeds, sowing them, and finishing off the repotting of the plants. We did not finish off the work of potting until the end of August, and now the plants are all much alike, whether they were repotted by the end of May or the end of August. The plants are all in cold frames at present, and it would be desirable to have cold weather, with frost at night, as it prevents flowering. In the warmer South the Auricula has a greater tendency to bloom unseasonably than in the North; but much can be done to check this by careful attention to watering the plants. In a general way the plants get too much water in the late summer months, when they ought to be allowed to become dry at the roots before being watered, and certain varieties—even in summer—may not require water more than once in a week. I saw the admirable collection of the Rev. F. D. Horner's choice show Auriculas at Lowfields, Kirkby Lonsdale, in the last days of August, and there was no signs of any autumn bloom; he does not have 5 per cent. of it. From there I went on to Sheffield, and saw Mr. Simonite's collection at Rough Bank, and found his plants at least ten days in advance of Mr. Horner's. Both growers raise many seedlings every year, and have many distinct new varieties on trial. I noticed in Mr. Horner's garden a large bed of seedlings planted out in the open garden, and sheltered from hot sunshine with some thin material, scrim or tiffany. These are usually planted in pots about the end of August, and are placed in frames. Planted out-of-doors in this manner they do not require so much attention as they do in pots. Most of the plants are eighteen months old from the time they appear above ground until they produce their flowers.

The young seedlings should now be kept in a dry, airy place, and they ought not to be watered very frequently; but must not be allowed to become dust dry. When water is needed give enough to thoroughly moisten the soil, and do not water again until they really need it. The old plants in frames lose their leaves (the outer ones) very rapidly since the frost set in, and these should be removed frequently, as a decaying leaf will sometimes cause the death of a valuable plant. The plants are not quite free from greenfly, but this troublesome pest does not increase much if at all at this season; but it can hold its own even when the plants are exposed to frost. It is best to fumigate with tobacco-smoke when the weather is mild. They can also be brushed off with a soft brush dipped into tobacco powder, so that those insects not brushed off are killed.

Alpine Auriculas in frames require very similar treatment to the show section when they are grown

in frames, and out-of-doors they lose their leaves very rapidly at this season. Slugs are troublesome creatures, and it is well to look over the plants, clearing away the old spent soil from around the plants, replacing it with fresh compost.

THE CARNATION AND PICOTEE.

Layered plants and rooted pipings are now being potted off or planted out for the winter. If the latter have been managed as I advised at p. 67, they will now be sturdy plants, and as good as the layered ones, as regards some varieties. Carnation growers need not be told that all are equally free in producing roots. I began taking off the layers from our mother-plants in the last week of September, and finished the first week of October, and found them quite as well rooted this year as in any previous year; but there are always a few which cannot be said to have formed roots at all; but they will, as a rule, speedily produce them in a hotbed where there is just a gentle bottom-heat. The pots should be plunged to the rims in cocoa-fibre refuse. The bulk of the plants intended to be grown in pots are now in cold frames, freely exposed to light and air; in fact, as soon as the young plants are fairly established the lights are taken off, except during frost and heavy rains. The plants do not require much water, but they must nevertheless not be kept too dry. We treat the yellow Carnations and Picotees in a similar manner to the others, as they are equally hardy, and grow even more vigorously, whether they are planted in beds or grown in pots.

TREE OR PERPETUAL FLOWERING CARNATIONS

are now very useful, and should be placed in a house or pit where they may have a gentle heat afforded them, and if the plants are near the roof-glass the flowers will open very freely. I may say that although the flaked Carnations and Picotees have made excellent growth this year, the tree Carnations, on the other hand are rather weakly. They have not the strong healthy foliage of ordinary years, but doubtless they will improve with care. The seedlings of various types are likewise less vigorous. Very heavy rains came soon after they were planted out, and hardened the ground so much that we had to carefully fork it over with a hand fork. The growth made in September was fairly good, but I fear that many of them are not strong enough to flower.

THE DAHLIA.

The plants were cut off very suddenly this year; but, fortunately, the rain has kept off, and it being a fine drying day on the 10th, I had my collection taken up. It is fortunate when an opportunity is afforded to get the roots out of the ground in good condition soon after sharp frosts. As they are taken up, the stems are first cut over, some 3 or 4 inches from the surface of the ground. The roots are then placed in the sun for an hour or two with the tuber uppermost, to drain the water from the hollow stems, placing them afterwards in any house or shed which has a dry atmosphere and is also frost proof. Even with the greatest care, a few tubers will be lost each year, but if it is possible to have a few pot roots of each variety, these are more likely to pass safely through the winter, especially in such a season as this, where the plants have had a bad season, as well as a short one to ripen in. Pot roots may be kept in a greenhouse laid on their sides under the stage, or in any house from which frost is excluded.

THE HOLLYHOCK.

I fear we shall not get much seed from the plants this year. The flowers were produced late, and we had not gathered a pod when the first frost came. Last year was a good one for seeds ripening out-of-doors, but this one is just the reverse. If it is intended to winter the plants in frames they should now be taken up and potted, or the frames may be made up with some fine loam and leaf-mould, and the plants set out. I find in our exposed district the plants live out-of-doors through the winter if

they are sheltered from the north and east winds, but where exposed to the full force of the winds we lose a great many each year. The small plants, in pots, propagated from cuttings or single eyes during the summer, ought to be placed in cold frames. It is as well to plunge them to the rims in some loose material. They require at all times ample ventilation, but ought to be shut up close at night, as one cannot tell what the weather may be before morning. *J. Douglas, Great Grearics, Ilford.*

HOME CORRESPONDENCE.

BORDER CARNATIONS.—A new interest has of late been created in these Carnations, and now everybody wants to grow them in gardens, not for exhibition purposes, but as ordinary border flowers. We have also recently begun to discover that there are far more good kinds, especially of self-colours, in the country than we had imagined; and now in all directions good varieties are being presented, so that there is abundance to choose from. Last year being dry and hot proved peculiarly fecund of seed in good sorts, and myriads of seedlings have been raised this year in consequence. This year seed will be scarce, but a good seed season every few years suffices to keep seedlings abundant. Happily, too, kinds which are robust—and none others are for ordinary border culture worth saving—soon give plenty of layers, and in a few seasons any one variety may be largely multiplied. It has occurred to me that a good trial of these border Carnations out in the open ground at the Royal Horticultural Gardens, Chiswick, might be made next summer a matter of peculiar interest, assuming that the Council of the Society approved, and Mr. Barron could provide a few rods of ground for the purpose. The great advantage of having trials conducted at Chiswick is that they are open to anyone to see; and there can be hardly a doubt but that a trial of several hundreds of plants would induce very many persons to go to Chiswick to see them. Now I should like to see some clearly defined lines laid down upon which the trial might be conducted, and in the first place particular colours should be asked for, consisting chiefly of selfs. These can be better judged as border flowers than can the ordinary florists' flakes and bizarres; but still classes may be made for flaked and speckled flowers other than florists' varieties. The chief colours found in self flowers are white, yellow, salmon, rose, scarlet, crimson, and purple. There are some colours, perhaps, hard to class, but most of them would be found closely allied to one or other of the colours above named. All parti-coloured flowers might be termed fancies, and be divided into dark and light sections—as thus:—rose, yellow, flesh, or scarlet markings being placed in the light fancy section, and crimson and purple markings into the dark fancy section. All plants sent should be from layers, no pure seedlings being admitted. Whether named or not, each plant should have the description of the colour of flowers marked on the label, and if also numbered, so much the better. Then, further, some limit should be placed on the number of plants each person should be permitted to send, which should not exceed two in each class, although some may be able to send not more than one, perhaps. The plants should be planted in colours for the purpose of comparison and of giving marks; and if the Council could afford so much, a couple of medals might also be given in each class. The awards should be made by a select body of the Floral Committee, not less than five in number, who should visit the trial weekly until the awards were completed. The plants in due course to be layered, and the senders to have the option of purchasing the respective stocks of his own sending at moderate charges, or leaving them, as he may think fit. Whilst general good quality in the flowers should not be overlooked, the plants generally should be judged as for border decoration. *A. D.*

LATE STRAWBERRIES.—I have to-day (October 11) gathered from the open ground a dish of good President Strawberries from plants which fruited early in the season. We have had several frosts, one of which registered 8°, and during the night of the 1st inst., there fell 3 inches of snow. A few Fern leaves were thrown loosely over the plants as shelter, from the cold winds, but not

enough to exclude the light, and no other protection was afforded them. I have also a bed of Hautbois, some of them runners of last year, which bore fruit in summer, and now is full of flower; and many of the runners of the present season have thrown up fine bold trusses of flowers. A fortnight ago I lifted several of the last years' plants, and placed them in boxes in a vinery, the flowers of many of them have set, and are swelling off their fruit. In such a chequered and unusual season we cannot speak fairly as regards the merits or demerits of any of these varieties, either new or old. *D. Davis, Kyne Park Gardens, Tenbury.*

LONG-LIVED CUCUMBERS.—In a recent number your correspondent, C. Collins, expressed surprise at a fine house of Cucumbers, which was planted in August, 1887. I suppose him to mean that it is by no means a common occurrence; if so, I quite agree with him, and will give him my experience of growing Cucumbers for two years without renewal. In the year 1872 I was foreman in the gardens at Chilworth Manor, Hampshire, Mr. J. Batters being head gardener. Cucumber and Melon growing was then a hobby with me, and I was allowed free scope to grow them according to my own ideas and ability. I entered the gardens in February and found a Cucumber-house that had been planted the previous February with plants struck from cuttings of Telegraph. The stock had been in Mr. Batters' possession 5 years. The plants had borne good crops all through the previous summer and winter, the vine being gradually renewed by cutting out old shoots and laying in new ones; and now it was determined to see if the plant would continue to bear still longer. To make sure the young stock of plants from cuttings was planted by the side of the old; but the latter by frequent top dressings of old Mushroom-dung and liquid-manure carried a fine crop of Cucumbers the whole of the next summer and following winter, and had not the supports of the bed given way, I think it would have done good service another season. From this it will be seen, that by a careful cutting-out of old branches and laying-in of new, keeping the foliage clean and free from aphids, with oft-repeated manurings, Cucumber plants can be made to produce good fruits for two or more years. The plants may not be quite as vigorous as seedlings, but they are by far more productive. Our plants were always struck from cuttings, the original plant being raised from seed soon after the variety was sent out. Where Cucumbers are required all the year round I should prefer cuttings to seedlings, as I have found them to be the more prolific of the two. The Cucumber-house was about the same size as the one spoken of by Mr. C. Collins, and the border of the same width and depth. Hot-water pipes ran the length under the bed, midway between the floor and the bed, a hole being made in the wall to admit by means of a shutter the escape of too abundant heat into the house, and which we found very useful in raising the temperature of the latter, especially during very cold weather. The plants were kept clean by frequent use of the syringe. The branches were kept thin, so that a good deal of light was admitted—a very necessary point. *F. H. Froud, The Bank, St. Albans.*

PLANTING SANDHILLS.—On p. 389 of your last issue "J. E. E." offers suggestions as to the best trees, shrubs, and other subjects to plant on sandhills situated on the north-west coast of England. Living myself on the coast about eight miles from Liverpool to the north, I have experienced the prevailing winds spoken of by "Doubtful," also the shifting sands. I have also been on the east coast from Hunstanton to Yarmouth, having lived near the first-named place for a considerable time, so that I can speak of both shores. In the first place, I would remind "J. E. E." that to one gale on the east coast we get at least ten on the north-west, and, I may say, these are twice as severe. To secure the sand is by no means an easy matter, and the best things are the grasses recommended by "J. E. E."; but then, again, it is useless to plant them without some kind of protection. The best thing I can recommend "Doubtful" before he begins to plant is to get enough wattled hurdles to extend the whole seaward side of his sandhills, but he must not take in too great a width of sand at one time; 10 yards would be enough, and then he can plant his grasses and intermix them with the common Willow, but if he can get the latter to grow any taller than the grass he will be much more fortunate than I was. I have planted at one time or another nearly all the plants which "J. E. E." recommends, but it has

ended in failure, so I have given it up for a bad job, it being nothing less than waste of time and money to go on with this kind of work. I have got my sandhills well covered with grass, but as for getting further I could not. If "Doubtful" wishes to grow ornamental trees, &c., he will have to build a wall 10 feet high, and then he can try, but I do not know what success he will have even then. We have a wall about half-way between the house and high-water-mark, which is 6 feet high, and topped with 4 feet of good strong trellis, which is crossed, so that only half an inch of daylight is seen between the laths. There is a border inside about 10 or 12 yards wide, planted with ornamental trees in 2 feet of good garden soil; but at the present time these look poor miserable objects, and as for getting them to grow above the trellis, that is out of the question. It is impossible to get a bit of Ivy or any creeper to grow on the west or north side of the house, but on the east things do fairly well—the Ivy especially, which is up to the top of the house. It is a very common occurrence to find chimney-pots, slates, tiles, and squares of glass smashed up in all directions. This year, about the beginning of June, we had a terrific gale; the trees were just out in their first young leaf, and looking well, but, alas! the next day after they were like a Scarlet Runner Bean that has had 10° of frost; even the grass on the lawn was as black as your hat, so violent is the wind experienced on the west and north-west coast of the country. If "Doubtful" is situated in the same part anything he may do will be a failure, unless he gets a strong wall built first, and even then I do not think he will find it to pay, let alone be of profit, to cultivate sand, for I know by experience that what I grow costs five or six times its value. *R. C. Townsend, Rumble.*

THE ONION CROP.—Not only will there be a very poor crop of Onion seed this year, but we are wondering from whence will come good sound bulbs which will keep long enough to produce seed next year. Only under exceptional circumstances has it been possible to secure well-ripened bulbs, and only such will keep for six months after lifting. The best results have been found where varieties of the Spanish type were sown last autumn, as those mostly stood the winter well, and were fairly well matured sound bulbs. Those bulbs would, however, hardly keep until April next for field planting. In most cases spring-sown Onions have never ceased growing, and natural ripening has been out of the question. Of course, it has been possible to pull the bulbs, and force ripening of a kind, but not solid maturation. The shortness of the crop should make Onion bulbs dear this winter, and therefore there will be greater temptation to sell than to save for seed production. I found white-skinned Onions, such as Tennis-ball, to be so tender that they failed absolutely, whilst bulbs of the type of Danvers' Yellow proved far more hardy, and have seeded fairly well, but of course late. Bulbs of large size, such as Rousham Park Hero, have done badly, the stems decaying because of the excessive moisture. I tried a well-matured Portugal bulb for seed production, and found that it utterly failed to produce seed, although it flowered. We are finding out now that we have a disastrous Onion season, that this feverish anxiety to get large bulbing sorts is a mistake, and that smaller bulbing, harder kinds, are by far more serviceable. As Onion seed next spring may not be too good, it will be as well to sow some in a frame for transplanting, and thus avoid what outdoors may be absolute failure. *A. D.*

ROOTS AND BUDS OF FRUIT TREES, AND MOISTURE.—At this season, when trees of all kinds on walls and in the open are ripening their wood of the current year, that which tends to impede the process is dryness at the root, and this evil is very apt to occur during dry months like the present October, when rain has been infrequent over large areas of the country. It is surprising how soon the effects of the heavy rainfalls have vanished from some soils, and roots begin to suffer from the lessened amount of moisture about them, and more particularly is this so where they are not mulched. In such cases it may yet be necessary to water, and though this may by some be considered against ripening, it is of the utmost importance that the foliage be maintained fresh as long as possible, and prevented from flagging. In houses it will be a great help to the trees during bright weather if they are heavily syringed in the afternoon, but the more air they get the better, and lights can be taken off. Should we get a change, and go back to dull cloudy

skies and wet, then a resort to fires must be had, but with warm pipes ventilation should be constant. This applies to Vines as well as other plants, and especially to young canes, which, now that growth is at an end, should have all the lateral shoots removed, leaving nothing but the principal leaves; the buds will then have every assistance to develop and mature. Rods bearing fruit, or from which fruit was cut, should also have all new shoots they may have made removed, as it is important that only the principal foliage should remain; and the best cultivators rarely, if ever, allow Vines to run, or make growth, after the first stopping takes place, unless it is to fill up or extend the spread of the stems. Turning to such trees as Pears, Plums, Cherries, and Apricots on walls, or grown in other ways, all shoots that have been made since the midsummer stopping should be cut out at once, as their removal will not only assist the back buds, but in the case of Pears help much in finishing off any fruit which they may have. *J. S.*

BEDDING PELARGONIUMS.—On p. 391 of your issue for October 6, "R. D." speaks in favour of Atkinson over Jacoby. I beg to say that I have bedded out one—viz., *Pride of Trent*—which is superior to any other scarlet I have tried. It is a vigorous grower, throws up a strong flower-stalk, and stands the rain better than any other; in fact, this summer when H. Jacoby, Vesuvius, Brighton Gem, and John Gibbons, were nearly without a flower, *Pride of Trent* was presentable; then as a winter flowering variety I have seen no equal to it. The raiser is Mr. Anderson, Clifton Gardens, Notts. Mr. Anderson has used it as a bedder for three years with great satisfaction; I have used it for two, and can speak well of it. The *Pelargonium Henry Jacoby* was raised by Messrs. Pearson, of Chilwell, and is named after Henry Jacoby, the M.P. for Mid Derbyshire. I invariably find it spelt *Henri*. A London gardener argued with me about it, and insisted on using the "i" instead of the "y." *W. M. Geddes, Thrumpton.*

PLANTS AND THEIR CULTURE.

GLOXINIAS AND ACHIMENES.—Any pots full of these plants had better be now transferred to their winter quarters, the tubers being allowed to remain undisturbed. However, if space be limited, they may be turned out and stored in dry sand, in paper bags, being careful to keep the sorts separate, and labelled. Any dry room where the temperature ranges from 40°–50° would suit very well for the *Achimenes*, but *Gloxinias* are safer where the temperature does not fall below 50°. Late flowered batches of these plants, and which have not yet lost their leaves, should not be hurried to rest. A few weeks' attention to watering, and to affording a drier air, will much improve the tubers. The summer-flowering *Nagelias* and *Gesneras* should be treated in a similar way, as also the plants known as *Eucedonias*, but some of these are late flowerers, and may not yet be over.

Tuberous-rooted Begonias.—Plants which have been standing out-of-doors, or have been removed from the show-house, should be protected from cold, and placed where they can get abundance of light and air to mature their growth, and which will enable the tubers to make a more vigorous start next season, better than would be the case if the due ripening had been checked. When growth is quite suspended stow them away in some dry place where they will be safe from frost, but where a dry frame is at command, in which to plunge the pots, no better place need be desired, well covering pots, bulbs, and all, with the plunging material. There they will be safe during the winter.

Clerodendron fragrans flore-pleno.—The deliciously scented flowers of this plant never fail to please, but as it is often met with, growing in small pots with a single head of flower, the true character of the plant is not observable; but if it be planted out growth is rapid, and the plant soon grows into a large shrub, with numerous corymbs of flowers, which last much longer than those on a small plant; indeed, by taking care to have the bad pips regularly picked off, it gives a succession of flowers for a long period. About the close of the year the shoots should be cut back and the plants put into shape, at the same time giving a good rich top-dressing. This, with an occasional application of liquid manure during the growing season, completes the routine of its management, unless perhaps it be

sometimes advisable to thin out the shoots somewhat at the first break, as from its mode of branching it would get very crowded by the end of one season. *F. Ross, Bletchingley.*

THE HARDY FRUIT GARDEN.

FRUIT GATHERING.—The succession of sharp frosts which we are now experiencing will necessitate the ingathering of all varieties of Apples and Pears still hanging on trees out in the open. But as regards late Pears on walls, as the season has been such a backward one the fruits are as yet rather immature, and if the situation be somewhat sheltered it would be well to allow them to hang another week or ten days, providing, of course, that the state of the weather will allow of this being done. The fruit will then keep all the better, and ripen properly for being allowed to hang a little longer.

Both Apples and Pears should be gathered carefully so as to avoid bruising the fruit, for they cannot be expected to keep well if they are subjected to rough usage. If the fruit-rooms are commodious the fruit should be laid out on the shelves in a single layer only, as they can then be inspected easily, and all decaying fruits be at once detected and removed.

Walnuts are now dropping fast, and when they are required they should at once be knocked off the trees. After separating them from the husks dry and store away in a cool place.

Late varieties of Plums had better be gathered, and if laid out thinly on a shelf in the fruit-room they will keep in a fit state for dessert for some days.

Strawberries.—The beds and borders should be looked over once more, and all runners removed. The surface of the soil between the rows should then be lightly loosened with either a hoe or a fork preparatory to their being mulched with half-decayed manure. It is always a good plan to get this done early in the autumn, so as to let the rains work the essence out of the manure down to the roots, and which proves of the greatest possible benefit to them. The manure also helps in a great measure to protect the foliage in bud, and prevents it from being injured by very severe frosts. *A. Ward, Stoke Edith Park.*

THE KITCHEN GARDEN.

BOX EDGINGS.—The present is a good time for mending gaps in and relaying these where necessary. Any repairs that may be required in the walks should first be attended to, keeping the walk slightly higher in the centre than at the sides, and putting in drains if required. Before commencing the Box a few pegs should be inserted along the centre of the walk for the purpose of having fixed points to measure from, and a line stretched parallel with these at the sides where the Box edging will be planted. After digging the ground on the line of edging, tramping and beating it firmly and making level, a trench 4 inches deep with a perpendicular face against the line should be cut; and having broken the Box in pieces 7 to 8 inches long, place it moderately close together along the trench, filling in the soil with the hand, or a trowel, and finally with a spade put back the remainder of the soil and tread firm. No clipping should be done until April.

Preparing for Winter.—Every advantage should be taken of fine days to get all weeds and rubbish cleared out of the garden. Brussels Sprouts, Cauliflowers, &c., should have their dead leaves removed. Peas and Beans, &c., that are finished bearing should be cleared off and weeds hoed up and raked off clean. Some beds or rows of Parsley should be protected before hard frost occurs, and a plentiful supply of dry bracken or straw got in readiness for protecting vegetables in the open. Celery should now be earthed up finally in dry weather, leaving but little of the top exposed to the action of frost. *W. H. Divers, Kotton Hall, Stamford.*

CATTLEYA DOWIANA AUREA.—A specimen of this very striking variety is now in flower at Gunnersbury Park; it has three remarkably fine blossoms. The sepals and petals sulphur-yellow, the massive lip 4½ inches in length and 2½ inches broad, is grandly reticulated with gold; the margin of the lip crimson-purple with an edge of pale lilac-purple. This is indeed a noble and striking *Cattleya*.

(Continued from p. 443.)

not so here, most of the fine fruit is produced on accidental trees, either found in gardens on taking possession, or planted by incoming tenants. Taking into consideration the time necessary to get a stock of trees into a good bearing state, few tenants would care to adopt any system of planting or training from which they would not derive some immediate advantage.

The cultivation of the Pear has been so very remunerative for years past, that it has been made a subject of more general study and system. Many of the old gardens, established half a century or more ago, offer evidence of the walks having palisades on both sides, for the purpose of training Pear trees upon them, and in some cases, the palisading has been double, so as to admit of trees being trained on both sides, one foot or less being the intervening space between the rows of palisades. Trees planted in this way are generally productive, the main lateral branches being trained and supported horizontally; a regular and continuous supply of sap is provided during the growing season for the development of the fruit. This system has and does answer well, and as long as the trees continue healthy, they bear good crops of fruit, the size of which much depends upon the amount of thinning practised. Against walls, both horizontal, fan, and cordon styles of training are practised, all of which answer well in the hands of careful attendants. Dwarf bush and pyramidal trees are also grown, many acres of ground being devoted to the cultivation of the celebrated *Chau-montel Pear*. The great number of excellent varieties grown, and their exquisite though varied flavours, make the Pear a fruit of general acceptance, though few varieties are much grown. *Citron des Carmes*, *Jargonelle*, *Williams' Bon Chrétien*, *Louise Bonne*, *Maréchal de la Cour*, *Beurrés d'Amanlis*, and *Diel*, *Duchesse d'Angoulême*, *Doyenné du Comice*, *Chau-montel*, *Glou Morceau*, and *Easter Beurré* are more often met with than other varieties; and amongst culinary pears, the *Belle de Jersey* (syn. *Belle Angevine*), and *Catillac*, or *Pound Pear*, are considered the best.

A rich, strong loam suits the Quince stock best, a lighter soil suits the free stock for Pears. The advantage of growing Pears on the Quince as a stock is early fructification, whereas, the generally accepted axiom respecting Pears grafted on the free or Pear stock is, that—

"He who plants Pears,
Plants for his heirs."

There are but few large Pear trees on the island; occasionally one or two are met with, towering above the Apple trees in the orchards, but such trees are the exception, and land is so expensive in Jersey that no room can be spared for unproductive trees (which is the case whilst the tree is growing).

The Jersey farmer, cultivating 20 acres of land, and making a comfortable living off so small a surface, cannot afford to allow a single perch of it to remain unproductive, and every square yard is made to contribute towards the general expenses. The space allotted to kitchen gardening and fruit culture is generally near the homestead, the pathways being planted on either side by bush Apple and Pear trees, Currant and Gooseberry trees filling up the intervening spaces in the rows until the trees have grown sufficiently large to cover the whole space. These highly cultivated and richly manured pieces of ground are made to produce crop after crop in rapid succession. No sooner is one crop off the ground than another replaces it (organic and not artificial manures being used). The trees get the benefit of these repeated dressings and the manipulation of the soil.

THE CONFERENCE.

This was held at one end of the great vinery, and was well attended. The President took the chair, and was well supported by his colleagues in the Council, most of whom were present on the opening day, together with a large and representative assemblage of gardeners, among whom we noticed many of the leaders of the craft from various parts of England and Scotland. The papers read at subsequent meetings are given elsewhere.

The Conference was opened by an address from Sir Trevor Lawrence, the President of the Society,

who spoke as follows:—It is my duty, and I think it is a most agreeable duty, having the honour of holding the office of President of the Royal Horticultural Society, to make a few—and I promise they shall be very few—introductory remarks in opening the exhibition of this very extensive collection of fruit. I should desire in the first place to disclaim in the strongest possible way any pretension whatever to be entitled to express any opinion on the subject of fruit-cultivation myself. At the same time a very large amount of interest is being at the present moment brought to bear upon the question of fruit-cultivation, I believe in some measure due to the observations that have been made by gentlemen occupying positions in the political world, very often somewhat at a loss for a subject. I think I may venture to remind you that an address of some considerable length was delivered lately at Hawarden by Mr. Gladstone, but I am not quite sure that those persons who read the accounts of the ladies who kept thirty or forty chickens and made £5 per annum out of them, or of the persons who made £40 from 1 acre of Strawberries, will not be disappointed if they expect to repeat so remarkable a success. It is a matter of importance in dealing with this subject that we shall not pitch our anticipations too high, and it should not be supposed that in extending, as reasonably as may be extended, the cultivation of hardy fruit that any real panacea for the troubles which have been afflicting the agricultural classes of this country will be found. The utmost that can be done will be done to give the agricultural classes some help where intelligence and skill are brought to bear. As long as we continue to import such large quantities of fruits and vegetables as we do—between six and seven millions in value annually—that fact will be pointed to as indicating a direction in which more may be done in this country; but it must not be forgotten that the total includes some fruits that cannot be cultivated in this country, and it is a further matter for consideration that it is by no means clear at the present moment that where hardy fruits, such as Pears and Apples can be successfully cultivated, that can be done to bring in anything like a satisfactory profit. Since I have been in the gardens of the Royal Horticultural Society I have asked two authorities what they thought on that subject. One gentleman, who is a most successful cultivator of fruit, told me that with all the care and intelligence which could be brought to bear in the cultivation of Apples and Pears, the profit to be made would not perhaps be more than 6d. a sieve. If it be so it is not a very good profit. The other gentleman said he was quite certain that for all the hardy fruit that could be grown in this country a good market could be found. I trust the latter is the correct view. The present Conference has a different object to those of 1883 and 1885. On the previous occasions an attempt was made to collect every prescription of known Apple, with the view, to a certain extent, of eliminating those varieties that were of little value for purposes of cultivation. And that was also the case with Pears. The present Conference proposes to invite the exhibition of such varieties only as find favour, or may be considered thoroughly worthy of cultivation, and one object of this Conference is to illustrate by facts and examples the present state and future prospects of commercial fruit culture in this country. I venture to think that our object is a thoroughly practical one, and when you pass through this conservatory and the tents which are adjuncts to it you will see that, having regard to the exceedingly unfortunate season which we have passed, the exhibition made by the leading fruit growers of the country is one which is eminently satisfactory. It appears to me that what the Conference can most wisely do, and that which the papers to be read promise to do, is to draw attention to the varieties which can best be cultivated, both of Apples and Pears, throughout the country, having regard to the various conditions of climate and soil. Having read the programme for the week, which we have already published, and remarked that the Chairmen for the three last days of the Conference were all excellent men, who would bring additional light to bear on the subjects of discussion, the Chairman went on to say:—One matter of importance has been dealt with by the House of Commons, and that is the question of railway charges for carriage. As Mr. Gladstone justly pointed out in justification of the preferential rates that they have been charging, it was owing to the fact that in dealing with the foreign producer they dealt with a trainful of baskets or hampers, whereas when they came to deal with the local producer they had to

collect the fruit, which puts them to considerable expense. At the same time I think the Legislature has acted perfectly right in deciding that these preferential rates shall be considered and revised by the Board of Trade, for, as we all of us are sometimes painfully aware, the railway companies have had given to them a monopoly of the means of transport of this country. I have observed in the newspapers that as a result of one of the conferences that have lately taken place, some attacks on the gentlemen who devote themselves to the calling of nurserymen. We are told that nurserymen keep large quantities of worthless varieties of Apples and Pears. I have no doubt that that is the case, but what I should think would be ground for blaming them would be if they represented those worthless varieties as good varieties. I have not the least doubt that there is no gentleman connected with the trade who, if I were to get him to recommend me the very best variety for my soil, but who would honestly and judiciously recommend the best varieties. There are persons who desire to make experiments for themselves, and they will not be satisfied that such and such varieties are worthless unless they have tried them themselves. I cultivate a good many Orchids, some of which are considered by my friends to be worthless varieties. At the same time I always cultivate them, and when I go to other gentlemen to purchase them I should not like to be told that they were worthless. It is really a matter of trade, and I think the attacks which have been made are ungenerous and uncalled for. I am quite certain that with regard to the cultivation of hardy fruit exactly the same conditions are necessary for success as with every other description of gardening, that is to say, you must display skill, care, and intelligence, and I think you will find that has a good deal more to do with the result than climate. I remember at the Conferences which took place in 1883 and 1885 a good many of the best exhibits came from the North of Scotland, where the climate is represented to us who live in the South as somewhat severe. However that may be we have got to make the best we can of our climate and taking one year with another I think on the whole it is a very good climate, and if we do not succeed we shall be wiser if we place the fault on our own shoulders than on the shoulders of the climate. I do not think I can add anything else, except to say that the Royal Horticultural Society is extremely indebted to the very large number of persons who have contributed to this show. It is a most satisfactory and numerous one, and one which is most creditable to the exhibitors. The Society have been most anxious to do all it could to promote the undertaking, and they hope to do something to lead the public in wisely making use of the feeling which exists at present in favour of the cultivation of hardy fruits. I trust the Conference will bear good fruit both practically and figuratively.

Mr. SHIRLEY HIBBERD moved a hearty vote of thanks to the Council for inaugurating the exhibition. It had been attended with considerable difficulty, but up to the present everything seemed to have passed off smoothly, and he congratulated them on the success attained. While they had been organising the exhibition other persons had been busy in the same kind of work, and those persons appeared to him sometimes to be freer in their mode of operation. This Society appeared to be more fettered,—it might be to their advantage,—but he had no confidence in any of the associations which had been started lately, and he thought the Royal Horticultural Society rendered them unnecessary. Political, economical, and commercial questions were involved in the question of fruit culture but this Society was content for the present to determine the merits of varieties. This Society should be the last to convert itself into a political agency. They did not want that; but he thought their Fruit Committee should have their powers extended to deal with such things as market tolls, the conveyance by railway, and other difficulties which stood in the way of the seller.

Mr. CREAL seconded the motion, and expressed his gratification that the Council had stepped forward at this moment to place before the country in a practical form what ought to be done, and the best way of doing it.

The CHAIRMAN, on behalf of the Council, returned thanks for the vote, and added that the Council were most anxious to give all assistance to growers in all branches of horticulture. As to whether the questions referred to were within the province of the Society

it was a matter about which opinions might differ. He was one of those persons who believed that the more the cobbler kept to his last the better he was likely to do his work. The questions were important to the subject of fruit growing but they wanted to give every assistance to persons who devoted themselves to the cultivation of hardy fruit—that was clearly within their province. One great advantage of the Conference was that it showed that the collections were more accurately named than was the case in either 1883 or 1885, which proved that the people understood their business a good deal better now than then.

THE EXHIBITION.

OCTOBER 16, 17, 18, 19 AND 20.—This meeting is now an accomplished fact, the fruits were numerous beyond all expectation, and of a quality and size which the ungenial season of 1888 scarcely gave promise of. In forming an estimate of these two points, the mind naturally reverts to the Conferences of 1883 and 1885, which were held in years when the weather during the period of growth and ripening had been almost all that could be desired by the cultivator; and this method of comparison allows us to perceive that the fruit of this year lacks colour—always a desideratum—and the size is not quite up to that commonly observed in the years named.

Some abnormally fine specimens of both culinary and dessert Apples and Pears were to be observed in collections from Home, Southern, and Western Counties, whilst in Northern, and in some Midland, fruits of large size, seldom very observable in fruit from these parts of England, was rendered still more marked, owing to the cold character of the past summer.

Although in point of numbers and general excellence, the trade collections head the list, it is not to these we ought to look for fine specimens; for out of the numerous young trees in nursery quarters, it is always possible to select fine specimens for the show-table. But when the private grower, with his comparatively few trees can put up, say twenty-four dishes of Pears, and the same number of Apples of good quality we may be pretty sure that the varieties shown are such as are suited to the soil and climate of the particular locality—good cultivation being equal in all cases. The method of training the tree does much to influence size and colour; hence we found that the best specimens were the produce of cordons, espaliers, and pyramids—these modes of training admitting the maximum of sunlight to reach the fruits; the thinning of the latter can be likewise easily carried out. And, as a rule, the converse holds good, the produce of aged and large-headed standards being mostly under-sized, and of good colour only when found at the extremities of the branches.

Some of the finest fruits observed at the show were, we understood, to be from miniature trees grown in pots and assisted with surface dressings of artificial and other manures.

In our lists of varieties from various parts of the country many of those now popular will be found amongst them, and these of large size and general excellence, but whether these varieties crop equally well in all parts the exhibitors themselves afforded no information. Local varieties were not many, and were chiefly noticeable in those exhibits from Western Counties. The Home Counties, which have never made a speciality of fruit growing—at least, of Apples—seem to have but few local varieties of Apples, and none of Pears, and these few of the former are getting rapidly supplanted by improved varieties. Beyond the Trent, local varieties find place in most gardens, some inherent good property, it may be, of prolific cropping, late flowering; the readiness with which the wood ripens in the cool summer of the North, or the smaller size of the fruits, which prevents them being blown down by boisterous winds, causing them to be generally planted.

HOME COUNTIES.—Fifty varieties most worthy of cultivation.—In this class Mr. C. Turner, Royal Nurseries, Slough, exhibited Blenheim Orange, Lord Derby, Annie Elizabeth, Hollandbury Pippin, Nelson's Glory, Lord Sheffield, Broadeye Pippin, Golden Noble, Mère de Ménage, Norfolk Beaufin, Keswick and Manks' Codlins, Ribston, Peasgood's Nonsuch, Golden Spire, Lane's Prince Albert, Ecklinville, Cellini, Grenadier, Baumann's Reinette, Scarlet Nonpareil, Cox's Orange very poor, Wellington, Stirling Castle, Frogmore Prolific, Emperor Alexander, &c. The tickets were marked to indicate on which kind of stock—Crab or Paradise

—the fruit had grown. The size was fair only, and in clearness of skin and colour the samples were good.

Messrs. G. Bunyard & Co., Old Nurseries, Maidstone, showed splendid fruits of Emperor Alexander, from a tree grown under glass that were scarcely approached by any others of the variety shown, Pott's Seedling, Cox's Pomona, Lady Henniker, New Hawthornden, the Queen, a recent variety, Grenadier, Golden Noble, and Lord Grosvenor were remarkable for size and generally good points. We may likewise specify Beauty of Kent, Queen Caroline, Belle Pointoise, Calville Malingre, Hornead's Pippin, and Blenheim Orange.

Messrs. C. Lee & Son, The Nurseries, Hammersmith, exhibited a very superior, well coloured collection in this division, the majority being culinary varieties. Some of the finest, and evidently at home on the medium soil of Isleworth were:—Alexander, Lord Derby, Mère de Ménage, Golden Noble, Manks Codlin, Alfriston, Blenheim Orange, Beauty of Kent, Lane's Prince Albert, Wellington, Hambledon deux Ans, Lord Suffield, Yorkshire Beauty, a variety always shown in good size and of high colour; Barchard's Seedling, Hollandbury, Stirling Castle, Small's Admirable, Ecklinville, Peasgood's Nonsuch, Warner's King, Cellini, &c. Of dessert varieties there were:—Fearn's Pippin, high in colour, if not quite up to the usual size; Winter Pearmain, Rosemary Russet, Court Pendu-plat, small; Sturmer, Margil, Dutch Mignonne, Scarlet Pearmain, Cox's Orange, Cox's Pomona, Kerry, Yellow Ingestre, Golden Reinette. This was a collection, one of the best, from the home counties.

Messrs. Paul & Son, Old Nurseries, Cheshunt, Herts, had also a fine collection: very fine were Cockle Pippin, King of Pippins, Round Winter Nonsuch, Grenadier, Cheshunt Pippin, and excellent examples were noted of Court of Wick, Ribston, Fearn's Pippin, Blenheim Orange, Royal Russet, Cox's Orange, Cox's Pomona, Bedfordshire Foundling, American Mother, Hawthornden, Paul's New Winter Hawthornden, Tibbett's Incomparable, and other well-known and good varieties.

W. Roupell, Esq., Harvey Lodge, Streatham, exhibited a clean large well-grown collection from rather unpromising soil, but which by thorough working and incorporating soot, lime, sand, manure, and above all surface mulching the trees, he has been enabled to grow very good apples. Of newer varieties may be mentioned Cox's Pomona, Grenadier, Bismarck, Domino, Sandringham, The Queen, Baumann's Winter Russet. Older ones were Sturmer, Blenheim Orange, King of Pippins, Warner's King, Stone's Pott's Seedling, Peasgood's Nonsuch, Bedfordshire Foundling, Duchess Favourite, Egremont Russet, &c. Messrs. T. Rivers & Son, Sawbridge-worth, showed a collection of uniformly finely grown fruits, well coloured, clean and large, some of which had doubtless been grown under advantageous conditions under glass. The collection was a good representative one, containing the most popular varieties. The selected fruits are:—Ribston, King of Tompkin's County, Cox's Orange, Emperor Alexander, Melon, Lady Henniker, Gloria Mundi, Buckingham, Betty Geeson, Mère de Ménage, Washington, Ecklinville, Cox's Pomona, Cox's Orange, Schoolmaster, Cellini, King of Pippins, Old Hawthornden, Scarlet Pippin, and Tower of Glamis.

The collection shown by the Society in the class was also a very good representative collection, in which the most noticeable were Bauman's Red Reinette, Cox's Pomona, Lane's Prince Albert, The Queen, Frogmore Prolific, Cellini, Stone Apple, Gascoigne's Seedling, Cox's Orange Pippin, Golden Noble, Ribston, Yellow Ingestre, Gravenstein, Ecklinville Seedling, and Swedish Reinette.

The collection shown by Messrs. J. Veitch & Sons, Chelsea, taken as a whole was one of the best exhibited, the fruit being large and brightly coloured, the best were Cellini, Warner's King, The Queen, Lord Suffield, Bismarck, Grenadier, Sandringham, Dumelow's, Stone's, Bramley's Seedlings; Frogmore Prolific, Blenheim Orange, Adams' Pearmain, Peasegood's Nonsuch, Norfolk, Beaufin, Annie Elizabeth, Cox's Pomona, Baumann's Red Reinette, Melon, Lady Henniker, Prince Albert, Braddick's Nonpareil, and Herefordshire Beaufin.

Messrs. H. Lane & Son, Great Berkhamstead, exhibited good fruits of the more generally popular newer varieties, and some of the less known ones, viz., Baumann's Red Reinette, Prince Albert, Mrs. Barron, Schoolmaster.

Messrs. W. Paul & Sons, Waltham Cross, in this class showed good samples clear in the skin and fairly well coloured, of Cox's Pomona, Mabbott's

Pearmain, Golden Spire, Palmerston Russet, Hoary Morning, White Calville, Golden Pearmain, Stirling Castle, and Northern Spire.

Mr. T. Bunyard, Nurseries, Ashford, Kent, showed fruit, some of which was much over average in size, but in some cases not in character. Excellent were Waltham Abbey Seedling, Small's Admirable, Alexander, Manks Codlin, Gloria Mundi, Golden Noble, Hanwell Souring, Harvey's Wiltshire Defiance, a large but light apple Cox's Orange, Belle Joseph, Court of Wick, Prince Albert, American Mother, Schoolmaster, King of the Pippins, Hughes' Golden Pippin, a large crimson and green coloured fruit.

Mr. J. H. Rose, gr., Lockinge Park, Wantage, Berks, sent many small fruits, below average in size and appearance. Cornish Aromatic, Duchess of Oldenburg, Worcester Pearmain, Ribston Pippin, Red Quarrenden, American Mother, Fearn's Pippin, Betty Geeson, Reinette du Canada, Cox's Orange, Cornish Gilliflower, Court Pendu-plat, Golden Russet, Ribston Pearmain, Royal Russet. The collection represents the best of our Apples fit to be grown in most parts of the country.

Twenty-four varieties of Apples best adapted to exhibitor's district.—Messrs. W. Paul & Son, Waltham Cross, showed clean skinned, medium sized fruits of Tower of Glamis, Blenheim Orange, Stirling Castle, Worcester Pearmain, Ribston Pippin, Waltham Cross Seedling, Ecklinville, Reinette du Canada, Keswick, Fearn's, Cox's Pomona, Annie Elizabeth, Warner's King, Golden Spire, King of the Pippins, and Rostocker.

Fruits of fine quality generally were shown by Messrs. Saltmarsh & Son, Chelmsford; the following varieties were the best:—Alexander Cellini, Summer Orange, probably a local variety, an angular fruit of a bronzy red colour; Royal Russet, Garret Pippin, Prince Albert, Lord Suffield, King of the Pippins, Warner's King, The Queen, Worcestershire Pearmain, Cox's Pearmain, Winter Hawthornden, Ribston Pippin, Cox's Orange.

Messrs. John Peed & Sons, Roupell Park Nursery, Streatham, Surrey, exhibited large specimens of popular kitchen and dessert varieties. The soil is heavy and the situation of the nursery high. Cox's Orange, Beauty of Kent, Worcester Pearmain, New Hawthornden, Peasegood's Nonsuch, Prince Albert, Warner's King, Alexander, Cellini, Washington, The Queen being shown.

Mr. C. Hoare, gr. to Sir R. Sutton, Bart., Benham Park, Newbury, Berks, showed fair fruits, but their general appearance points to unsuitable stocks or soil.

Mr. R. Smith, gr. to Lady Frances Fletcher, Kenward, Yalding, Kent, showed well coloured fruits, some of very fine quality, judging from appearance: Beauty of Kent, Winter Queening, Reinette du Canada, Alexander, Warner's King, Tom Putt, Blenheim Orange, Grand Duke Constantine, a showy fruit; Wellington, King of the Pippins, &c.

Mr. A. Waterman, gr. to H. A. Brassey, Esq., Preston Hall, Aylesford, Kent, had a very nice collection of large well coloured fruits, skin clear and smooth. Good were Gravenstein, Queen Caroline, Lady Henniker, Alexander, Stone's Seedling, Cox's Orange, Ribston, Prince Albert, Peasegood's Nonsuch, Gloria Mundi, Worcester Pearmain, Tower of Glamis, Lord Derby, &c.

Messrs. J. Peed & Sons, Streatham, the same district, therefore, as Mr. Roupell's, showed fine examples of Lord Suffield, Henri Decaume, Fall Pippin, Schoolmaster, Keswick Codlin, Warner's King, and Winter Hawthornden.

Messrs. G. Bunyard & Co. exhibited fruits, all of which showed high colour and good development. The finest were Cox's Orange, Tower of Glamis, Lord Grosvenor, Pott's Seedling, Cellini, The Queen, King of the Pippins, Lord Suffield, Small's Admirable, Grenadier, Cox's Pomona, Worcester Pearmain, Golden Noble.

A. H. Smea, Esq., The Grange, Wallington, Surrey (gr., Mr. Cummins), had fruit of generally high colour, with clear skin. This was a private grower's lot of Apples, and contained fruit more remarkable for their flavour and quality rather than for size. Of dessert varieties there were Court of Wick, King of the Pippins, Duke of Devonshire, Brownlee's Russet, Blenheim Orange; and in culinary Apples, New Hawthornden, Cox's Pomona, Queen Caroline, Striped Beaufin, Cellini, Nelson's Codlin, Wellington, Waltham Abbey Seedling, and Beauty of Kent. These fruits were grown on land that is intersected in all directions by watercourses, and where the average water level cannot be more than 3 feet below the surface.

In this class Messrs. Lane & Son, Great Berk-

hamstead, showed fine examples of the following:—Schoolmaster, Blenheim Orange, Stirling Castle, Flower of Kent, Fearn's, Stone's Pippin, Emperor Alexander, King of the Pippins, Prince Albert, The Queen, Ecklinville, Peasegood's Nonsuch, Cellini, and one of the Apples of the future, Baumann's Red Russet. These fruits may be considered as being very suitable to plant on soil that is stony, not naturally of rich quality, but which admits of improvement by cultivation.

Mr. Roberts, gr. to Messrs. Rothschild, Gunnersbury Park, Acton, showed Apples of large size, high colour, and smooth healthy appearance, evidently well suited to the soil—loam on clay—of that district. We mention Alfriston, Lord Derby, Hawthornden, Mère de Ménage, Cox's Orange, Wortley's Favourite, Peasegood's Nonsuch, Alexander, Ribston, Cockle Pippin, Cox's Pomona, Claygate Pearmain, Adams' Pearmain, Warner's King, and Rosemary Russet.

Messrs. J. Veitch & Son, Chelsea, exhibited fine, large, high-coloured well-finished fruits from the nursery at Langley, and from that at Fulham. The following were some of the best samples:—Cellini, Mannington's Pearmain, Winter Hawthornden, Kerry Pippin, Ribston, Cox's Orange, Worcester Pearmain, Brownlee's Russet, Baumann's Red Russet, Warner's King, Alexander, Pott's Seedling, Scarlet Pearmain, Reinette du Canada, and American Mother.

From the gardens of the Marquis of Abergavenny, Eridge Castle, Tunbridge Wells, gr. Mr. Rust, some very fine fruit was exhibited in this class, and varieties were observed not commonly met with in other collections. Roundway, Magnum Bonum, Betty Geeson, Hall-door, Wadham Pippin, Crimson Queening, White Paradise, Hanwell Souring, Emperor Alexander, Lady Henniker, Ribston Pippin, Cox's Pomona, Mère de Ménage, and Queen Caroline, were the best amongst the remainder.

Messrs. J. Laing & Sons, Stanstead Park Nurseries, Forest Hill, S.E., on medium soil overlying gravel, sent a collection of Apples, particularly good in quality for the soil there and the unfavourable season; Blenheim Orange, Lord Suffield, Emperor Alexander, Stirling Castle, Cox's Pomona, Gloria Mundi, Cellini, King of the Pippins, Lord Derby, Atkin's No. 2, Ecklinville, Worcester, Pearmain, Prince Albert, Warner's King, Ribston Pippin, and Manks Codlin.

The Society's collection contained the following as suitable for culture round Chiswick:—Duchess of Oldenburg, Frogmore Prolific, New Hawthornden, Blenheim Orange, Ecklinville, King Harry, Small's Admirable, Cox's Orange, Beauty of Kent, Warner's King, Golden Spire, Lord Grosvenor, Bauman's Winter Reinette, among others. These were generally clean, but deficient in colouring.

Twelve varieties of Apples best adapted to the exhibitor's district.—Mr. J. Hudson, gr., Gunnersbury House, Acton, showed very nice fruits of Blenheim Orange, Golden Knob, Lord Derby, Wellington, Cornish Aromatic, Scarlet Nonpareil, Hollandbury, and Duck's-bill.

Messrs. Paul & Son, the Old Nurseries, Cheshunt, exhibited specimens of kitchen varieties, viz., Alexander, Stone's Seedling, Mère de Ménage, Alfriston, Grenadier, Cox's Pomona, Tibbett's Incomparable, Stirling Castle, Blenheim Orange, and Lord Suffield.

Messrs. J. Veitch & Sons, Chelsea, exhibited fine examples of Warner's King, Lord Suffield, Ecklinville, Sandringham, Bauman's Red Reinette, Northern Greening, Rosemary Russet, and King of the Pippins.

Southern Counties.—Fifty varieties.—Messrs. J. Cheal & Sons, Crawley, showed fruits of high colour, large and thrifty looking. Most of the favourite varieties grow well in the soil of Sussex, so that it is needless to specify any but those which were remarkable for size or novelty; such were Northern Dumping, Cellini, Mère de Ménage, Peasegood's Nonsuch, Domino, Blenheim Orange, Dutch Mignonne, Egremont Russet, Lord Lennox and the Professor.

Messrs. Lacombe Pince & Co., Nurseries, Exeter, exhibited large fruit of good colour. We specify Royal Russet, Tom Putt, Devon Quarrenden, Cox's Pomona, Tibbett's Pearmain, Ribston, Lord Paulet's Pearmain, Bellefleur, Lord Suffield, Dutch Mignonne, Ecklinville and Warner's King.

Mr. W. G. Pragnall, gr., Sherborne Castle, Dorset, had a collection of medium sized fruits, not so clear in the skin as some others shown, and not in character in some cases, Lady Henniker, Alfriston, King of Pippins, Doax Argent, Gloria Mundi, Blenheim Orange, Rosemary Russet, Reinette du Canada, Lemon Pippin, Royal Somerset, Alexander, Nonsuch

Catshead, Adams' Pearmain, and Sturmer were the finest.

Messrs. R. Veitch & Sons, Nurseries, Exeter, had a collection made up chiefly of fine-looking fruits of over the average size. It will suffice to say that these were the choicest varieties in dessert and culinary Apples, and it was remarked that local Apples, of which Devon has so many, found no place amongst them.

Mr. C. G. Slater, Nurseries, Heavitree Bridge, Devon, showed fruits of high colour and large size, the varieties being those tabled by nurserymen generally, the uncommon fruits being Glory of the West, Beauty of Hants, Autumna Gilliflower, American Grindling, Napoleon, Dutch Codlin, and Red-ribbed Greening, mostly of showy character.

Twenty-four varieties, best adapted for the district.—Very fine were Blenheim Orange, Alexander, Dumelow's, Peasgood's Nonsuch, Alfriston, Gloria Mundi, New Hawthornden, Mère de Ménage, and Ribston, shown by W. E. Brymer, Esq., Ilsington House, Dorchester.

Messrs. J. Cheal & Sons, Crawley, Sussex, had a fine lot of high-coloured, large fruits, The Queen, Duchess of Oldenburg, New Hawthornden, Prince Albert, Warner's King, The Professor, Cox's Pomona, and Yorkshire Beauty being some of the most striking.

Mr. W. Gallop, Bradford Peverell, Dorset, showed dishes of small fruits, the large ones being few, and consisted of Nelson's Glory, Alexander, and Winter Peach.

WESTERN COUNTIES.—*Fifty varieties.* Mr. G. Griffin, gr., Slebeck Park, Haverfordwest, exhibited many fruits of fine size and colour:—such were Kentish Fillbasket, Wheeler's Russet, King of Pippins, Cox's Pomona, Adams' Pearmain, Winter Hawthornden, Alexander, Warner's King. Mr. J. Watkins, Pomona Farm, Withington, Hereford, exhibited varieties found generally in other first-class collections, and these were well grown, and with the good colour and clear skins found commonly on Herefordshire Apples:—Belle Bonne, Tyler's Kernel, Crimson Costard, Scarlet Crofton, were varieties not often found in other lots. Messrs. R. Smith & Co., Nurseries, Worcester, showed fruits, generally of a large size and high colour, but not always exhibiting the fruit at its best. The varieties are such as are found in all of the good collections shown by the trade; Calville Rouge, Alexander, New Northern Greening, Worcester Fillbasket, and Golden Winter Pearmain.

Twenty-four varieties best adapted to exhibitor's district.—Mr. T. Coomber, gr. to A. J. Rolls, Esq., The Hendre, Monmouth, showed a collection, which contained good fruits of Alfriston, Ecklinville, Alexander, Blenheim Orange, Lord Suffield, and Tibbett's Pearmain.

Messrs. J. Jeffries & Son, Nurseries, Cirencester, showed clean well-grown fruits, many of them over the average of size. We may name Potts' Seedling, Kerry Pippin, Alexander, Small's Admirable, Grenadier, Gloria Mundi, Cox's Pomona, Worcester Pearmain, and Tower of Glamis.

Mr. Shingles, gr. to the Earl of Ducie, Tortworth, Gloucestershire, had a collection of large and small fruits, some apparently not liking the soil of the district, or had suffered much from the weather. The best were Winter Strawberry, Mère de Ménage, Waltham Abbey Seedling, Brabant Bellefleur, Nelson's Glory, Hawick, and Warner's King.

MIDLAND COUNTIES.—*Fifty varieties.*—Messrs. Dicksons (Limited), nurseries, Chester, had by far the best lot from the Midlands, but the color as in all fruit in the Midlands and north is deficient. The varieties were in the main the same as all the Nurserymen exhibited with a sprinkling of those more locally known, viz., Wareham Russet, Jolly Beggar, and Bellringer.

Twenty-four varieties suited for the district.—Mr. Gleeson, gr. to the Duke of Newcastle, Clumber Park, Notts, had a collection of rather small fruits, many being without names; fine were Dutch Mignonne, Lord Suffield and King of Pippins.

Mr. W. H. Frettingham, nurseries, Beeston, Notts., showed ordinary varieties, and has a good and suitable soil, where, with some attention, Apples would grow well, Nonsuch, Blenheim Orange, King of the Pippins, Beauty of Hants, Frogmore Prolific, Lord Suffield and Spencer's favourite were the best.

Mr. A. Christie, gr. to the Earl of Warwick, Warwick Castle, had smallish examples of large culinary varieties; Warner's King, Lord Suffield, Beauty of Kent, Lord Grosvenor, and Cox's Pomona, were the best of them.

Mr. J. Grey, gr., Normanton Park, Stamford, showed New Hawthornden, Annie Elizabeth, War-

ner's King, Gravenstein, Smalls' Admirable, Peasgood's Nonsuch, and Worcester Pearmain, as his best fruits.

Mr. W. H. Divers, gr., Ketton Hall, Stamford, showed in this class, but the fruits were generally very small: Duke of Gloucester, Carlton Seedling, and Golden Noble, were the best.

Mr. R. Milner, gr., Sundorne Castle, Shrewsbury, showed excellent fruits, from cordons and pyramids, of Stirling Castle, Gloria Mundi, Warner's King, Dumelow's Seedling, Cellini, Ribston Pippin, and Cox's Orange.

NORTHERN COUNTIES.—Mr. W. Chuck, gr. to P. Thelluson, Esq., Brodsworth Hall, Doncaster, showed fruits which indicated the adverse character of the weather during the past season in that part of the country. The presentable fruits were Blenheim Orange, King of the Pippins, and Cellini.

Dessert Apples.—There were several exhibits of a collection of twelve dishes of dessert Apples, and the specimens were generally of a high order of merit, Mr. W. Crump, gr. to Earl Beauchamp, Madresfield Court, Malvern, showing twelve dishes remarkable for their very high colouring; in size they were average. Cox's Orange Pippin, King of the Pippins, Strawberry Pippin, Blenheim Orange, May Queen, Fearn's Pippin, Court pendu-plat, Brownlee's Russet, being the chief examples; some of the finest dessert Apples shown.

Mr. C. Turner, Slough, sent a collection of clean sound fruits, of average size, and of handsome appearance; he showed capital examples of Adams' Pearmain, Cox's Orange Pippin, Scarlet Pearmain, Ribston Pippin, King of the Pippins, and Cluster Golden Pippin.

Messrs. Saltmarsh & Sons, Chelmsford, had good fruits of Ribston, Duchess of Oldenburg, Garrett Pippin, and Summer Orange, with large fruits of Cox's Orange.

The collection from Messrs. J. Veitch & Sons, Chelsea, S.W., was composed of very clean and plump fruits, of which Mannington's Pearmain, Cox's Orange, King of the Pippins, Devonshire Quarrenden, Margil, Ribston, Kerry Pippin, and American Mother were good examples.

—Brymer, Esq., had examples of average quality, in which Claygate Pearmain, King of the Earlies, and Cornish Aromatic were shown.

A collection of very pretty and clean fruits were shown from the gardens of H. A. Brassey, Esq., Aylesford, Kent (gr. Mr. A. Waterman); Worcester Pearmain, Blenheim Orange, Ribston, Cellini, Cox's Orange, and Cox's Pomona were the chief examples.

Mr. J. Rust, Eridge Castle Gardens, Sussex, with Winter Queening, Sturmer Pippin, Duke of Devonshire, Norfolk Bearer, and Rosemary Russet; and Messrs. J. Peed & Sons, Streatham, completed the display in this section. From these varieties there may be seen very well what varieties are most worthy of cultivation in this country.

The collections of six dishes were not of such a good general character as in the larger class of twelve, but there were several good exhibits. The varieties differed but little from those in the foregoing classes. Mr. Frettingham, for example, had Eve in his collection, and Mr. J. Hudson, gr. to H. J. Atkinson, Esq., M.P., Gunnersbury House, Acton sent good fruits of Gravenstein, Court of Wick, and Blenheim Orange, &c.

Several richly-coloured and very fine specimens were in the collection of Messrs. Paul & Sons, Cheshunt, N.—Wyken, Cox's Orange (very fine), Kerry Pippin, and Worcester Pearmain being worthy of note.

Messrs. G. Bunyard & Co., Maidstone, Kent, sent Melon Apple, Margil and Kerry Pippin, in good form. Scarlet Nonpareil and Cockle Pippin were fine fruits in Messrs. J. Veitch & Sons' dishes of well-coloured and fine fruits. Messrs. C. Warden and J. Roberts also sent collections, and Mr. C. P. Saunders, Jersey, had specially fine and good-coloured samples of popular varieties.

Culinary Apples.—In the corresponding large class for culinary Apples (twelve dishes), there was also a good display, but a greater range of quality. H. A. Brassey, Esq., contributed dishes of very fine quality, large and clean; Blenheim Orange, Peasgood's Nonsuch, Stirling Castle, Warner's King, Gloria Mundi, Washington, and Lane's Prince Albert were all good fruits, but not of very high colouring. Mr. Crump sent a grand lot of dishes; Peasgood's Nonsuch (handsome and highly coloured), Cellini (good colour), Stirling Castle, Warner's King, Lord Derby, Lord Suffield, and Lane's Prince Albert, were the chief varieties. Mr. J. Roberts, gr. to Messrs. Rothschild, Gunnersbury Park, Acton, W., sent good

specimens of Peasgood's Nonsuch, Cox's Pomona, Alexander (finely coloured), Beauty of Kent, Ecklinville, and Warner's King. In the collection from Mr. W. H. Frettingham, The Nurseries, Beeston, Notts, Peasgood's Nonsuch, Spencer's Favourite, Duchess of Oldenburg, Lord Suffield, and Warner's King were very good.

Mr. C. Turner had as his best fruits Old Hawthornden, Frogmore Prolific, Mère de Ménage, Keswick Codlin, Stirling Castle, and Blenheim Orange, all the dishes, however, being clean and healthy fruits. The collection from the Society's own collection was composed of good fruits of useful varieties, but deficient in colouring. Stirling Castle, Golden Knob, Stone Apple, Blenheim Orange, Warner's King, Lane's Prince Albert, and such like varieties were shown.

There were not many exhibitors of the smaller collections of culinary Apples, Messrs. J. Veitch & Sons and Messrs. J. Cheal & Sons, Crawley, Sussex, contributing some of the best, all well-known varieties; Messrs. Frettingham and Middleton also contributed.

Fruits from trained trees, &c.—In the classes for a collection of fruit from cordon, bush, or pyramids, and from standards in orchards, there was not observable the difference in quality which might have been expected, but those grown on the bushes, &c., were, if anything, smoother than the others. Messrs. J. Cheal & Sons; W. and E. Wells, Hounslow; J. Grey, Normanton Park, Stamford; and J. Watkins, Pomona Farm, Withington, Hereford, contributing good examples in the bush, &c., class; and of fruit from the standards in orchards Messrs. Wells, J. Watkins, R. Dean, R. Pennington, H. Merryweather were exhibitors, the last-named showing his varieties as Bramley's Seedling, Domino, and Clarke's Seedling, in good and large specimens.

The class for Apples grown on special stocks unfortunately did not bring out exhibits, and thus an opportunity for comparing the effects of various stocks was lost. Messrs. R. Veitch & Sons, of Exeter, who did enter, sent fruits which were all from the English Paradise, and by themselves were valueless.

Market Apples.—The specimens of Apples as grown for market were an attractive feature of the show. They were all excellent samples, but it is necessary to see the large baskets of the varieties in order freely to appreciate their effects. A remarkably handsome lot were those from Messrs. G. Bunyard & Co., large and finely coloured, and in good condition:—The Queen, Cellini, Ecklinville, Warner's King, Beauty of Kent, Grenadier, Worcester Pearmain, Duchess of Oldenburg, Cox's Orange, Stirling Castle, and Pott's Seedling. Messrs. Paul & Son had capital example of King of the Pippins, Golden Knob, Blenheim Orange, Stirling Castle, Fearn's Pippin, Counsellor, Wellington, and Claygate Pearmain being the varieties shown here, and all good. Messrs. W. and E. Wells also sent a good collection of smaller size.

Miscellaneous.—The miscellaneous exhibits were not very numerous. W. T. T. Dyer, Esq., C.M.G., Kew, Surrey, sent a few dishes of fruits. From Messrs. Dicksons, Chester, there came a collection of Apples, but all the fruits were of small size. Waltham Pippin, London Apple, Hambleton Deux Ans, Rymer, and Flower of Kent, &c., were to be seen here.

The Rev. W. Wilks, Shirley Vicarage, Croydon, had a dish of Cox's Orange of wonderful size, being three or four times larger than usual, of a bright yellow colour, and altogether extremely fine and handsome, having been grown under glass. W. T. Manning, Esq., Blackheath, had a few dishes; and a dish of very large and excellent fruits of Domino were shown by H. Miller, Esq., Chiswick. A dish of New Northern Greening was shown by Messrs. J. R. Pearson & Sons, Chilwell, Notts; the variety is stated to keep well till June.

SCOTLAND.—Apples from Scotland were fairly numerous, but with the one exception of those sent by Mr. McDonald, Perth, were inferior to the collections from English counties which, considering the bad season, is not at all to be wondered at. Mr. McDonald had some very fine, clean and large fruits of Peasgood's Nonsuch, Cox's Orange, Wellington, Tower of Glamis, Blenheim Orange and Ecklinville in his collection, only lacking colour to make them first-rate examples.

Mr. M. Dunn, Dalkeith, contributed an extensive collection, but the specimens had unfortunately been damaged in transit; they were, however, fairly good, and mostly of medium size. Some of the best shown were Worcester Pearmain, Lord Nelson, Orange Pippin, Gravenstein, Carraway Reinette, Loddington,

Scarlet Pomona, Alfriston, Golden Knob, Ecklinville, Bedfordshire Foundling, Cox's Pomona and Warner's King.

A fairly large collection was from Messrs. Dickson & Co., 1, Waterloo Place, Edinburgh, but the examples were generally deficient in size and colouring, and were not very clean.

Other exhibits were from Mr. W. Drummond, Stirling (good fruits of Beauty of Montrelle, Ochitree, and Dunmore).

New or little known Apples.—In this class Mr. Vertegans showed a long, cylindrical Apple, yellow streaked with red. It is shown under the name of "Malus pendula." The fruits are about 3 or 4 inches in length, and 2 inches wide—probably a good decorative sort.

Messrs. R. Veitch & Sons, Exeter, contributed a collection containing varieties which are not often to be noticed on the exhibition table. They were all well coloured fruits of average size. We may mention Sandringham, Ottery, Rougemont, Bramley's Seedling, Warmington, Towsington, Smiling Beauty, St. John's Favourite, and Hollow Core—all of good prepossessing appearance.

Mr. C. Ross, Welford Park, Newbury, had some good samples of out-of-the-way fruits, as Grand Duke Constantine, Beauman's Reinette, Lady Alice Eyre, a pale round fruit; and Gospatrick, a capital variety.

In Messrs. G. Bunyard & Co.'s collection, Oker, a dull red, slightly elongated fruit, was shown. It is of Swedish origin, and appeared in this country, we believe, for the first time in a collection of Swedish Apples shown at the last Conference in 1883. It is a sweet and tender-fleshed Apple, and was shown also by Messrs. J. Cheal & Sons, Crawley, and Mr. T. Bunyard, Ashford, Kent. Messrs. G. Bunyard & Co. also had Cardinal, Belle Pontoise, Opetien, Gospatrick, Evagil, and Bismarck, in good specimens. Messrs. J. Veitch & Sons sent several dishes, King Harry, Ringer, Castle Magar, The Sandringham, and Niton House, showing up well. Messrs. Cheal had Professor and Ottershaw, and others were from Mr. C. Turner, A. H. Smee, Esq. (with Remsborough, a handsome dessert), Mr. Crump, and Mr. C. G. Slater, Exeter.

PEARS.

The exhibits of Pears were not so large as those of Apples, indeed the classes were very properly reduced, so that the large collection included thirty-six varieties as against fifty of Apples in the corresponding class. The general appearance of Pears in the mass is not so pretty as that of Apples, the colours being of a duller hue. When the season is considered the quality of the exhibits is of a high order, especially in the large classes; exhibitors seeming to place inferior samples in the smaller classes.

HOME COUNTIES.—*Thirty-six Varieties.*—A handsome lot of fruits were those shown by Messrs. C. Lee & Son, Hammersmith, W. The entire lot was good in quality and very clean, in fact one of the best in the show. Pitmaston Duchess, Marie Louise d'Uccle, Souvenir du Congrès, Louise Bonne of Jersey, Trout, Beurré d'Amanlis, Mad. Treyve, B. Hardy, Williams' Bon Chrétien, B. Clairgeau, Prince of Wales, Durondeau, B. Bachelier, Doyenné du Comice, and B. de Capiaumont were one and all remarkably fine and deserve mention.

Messrs. J. Veitch & Sons, Chelsea, were also exhibitors of a splendid lot, very clean and even throughout, that was about the best coloured collection; Doyenné Boussoch and Louise Bonne must be singled out as finely coloured samples, then followed Pitmaston Duchess, Souvenir du Congrès, Triomphe de Vienne, Van Mons Leon le Clerc, Durondeau, Clairgeau, and Madame Treyve were also fine.

Messrs. T. Rivers & Sons also had a lot of large and clean fruits, some from under glass, we imagine. This collection was remarkable for the large size of its fruits; Pitmaston Duchess, and General Todtleben, were specially noticeable in this respect; Doyenné Boussoch was finely coloured, and of the others the best were Emile d'Heyst, Duchess d'Angoulême, Lebrun, Catillac, Grégoire Bordillon, and Marie Louise d'Uccle, all large and clean.

A very creditable collection came from Messrs. G. Bunyard & Co., generally well coloured and of large size. Catillac, Beurré d'Amanlis, Louise Bonne, Comte de Flandres, Souvenir du Congrès, Conseiller de la Cour, Doyenné du Comice, Beurré Clairgeau, Marie Louise d'Uccle, Beurré Hardy, and Doyenné Boussoch were all fine samples.

Messrs. J. Feed had a finely coloured lot, Doyenné Boussoch being the best, and good colouring was

also to be seen in Louise Bonne, Emile Heyst, Pitmaston Duchess, Marie Louise d'Uccle, Beurré Bachelier, B. Clairgeau, and B. Superfin.

An even collection of medium quality was shown by Mr. R. Smith, gr. to Lady Fletcher, Kenward, Yalding, Kent; Passe Colmar, Williams' Bon Chrétien, Beurré Bachelier, and Marie Louise being the finest shown.

Maréchal de la Cour, Uvedale's St. Germain, and Durondeau were good in the collection from Mr. C. Turner, Slough.

Messrs. W. Paul & Son, Waltham Cross, showed an average collection, generally wanting in size; the best fruits were those of Beurré Spence, B. Baltet Père, B. d'Amanlis, B. d'Anjou, Emile d'Heyst, General Todtleben, Brockworth Park (Bonne d'Ezée), Conseiller de la Cour, and Doyenné Boussoch.

Mr. J. Roberts, Gunnersbury Park, showed superior well-grown fruits of Beurré Clairgeau, B. Diel, Nouvelle Fulvie, Catillac, Marie Louise d'Uccle, and Fondante d'Automne.

Messrs. Saltmarsh & Son, Chelmsford, showed an average lot of fruit; the best were Mad. Treyve, Louise Bonne, Durondeau, Doyenné Boussoch, Beurré Hardy, and B. Clairgeau.

Mr. C. Howe, Benham Park, showed fruits of medium size: Beurré Rance, Doyenné Boussoch, Triomphe de Jodoigne, Zephirine Gregoire, Hacons Incomparable, Gansell's Bergamotte, and Knight's Monarch were the finest.

Messrs. J. Veitch & Sons, Chelsea, exhibited some excellent fruits, some of which may have been grown under glass; the best fruits were Doyenné Merode, Beurré Bachelier, B. Superfin, B. d'Amanlis, B. d'Anjou, Marie Louise, General Todtleben, Napoleon, Conseiller de la Cour, Alex. Lambre, Fondante d'Automne, Pitmaston Duchess.

In the fruits shown by the Society in this class there were noticeable Louise Bonne, Beurré de Charneuses, B. Diel, Jersey Gratioli, B. d'Amanlis, Souvenir du Congrès, Madame Treyve, Napoleon, and Vineuse—altogether a first-rate lot, of fine size, clean and even.

In the *twenty-four best adapted to the district* the Society showed well again, with excellent fruits of Beurré Hardy, Louise Bonne, B. Superfin, Fondante d'Automne, Maréchal de la Cour, and B. d'Amanlis; but here, as in all the exhibits of the Society, colour was deficient, but the fruits themselves were fine.

Very similar varieties were well shown in the collection of Mr. J. Roberts, Gunnersbury House, Acton, and again by Messrs. J. Veitch & Sons, Chelsea, who had fine fruits.

Mr. J. H. Rose, Lockinge Gardens, Wantage, had Beurré Clairgeau, Louise Bonne, and Doyenné du Comice from walls, and all extremely brightly coloured.

Mr. A. Waterman, gr. to H. A. Brassey, Esq., Aylesford, showed Beurré Bachelier, Louise Bonne, Conseiller de la Cour, Gansell's Bergamotte, and Bonne d'Ezée in his collection.

Mr. Cummins, gr. to A. H. Smee, Esq., Wallington, Surrey, sent a nice neat lot also in the class, having King Edward, Beurré Rohan, and Durondeau in good specimens. Mr. T. Fletcher, Kingston, Herefordshire, and Mr. Griffin, Haverfordwest, also showed, but their exhibits do not call for special mention.

Twelve varieties of dessert Pears best adapted to the exhibitor's district.—Messrs. J. Veitch & Sons showed very nice examples of Doyenné Merode, Williams' Bon Chrétien, Beurré d'Amanlis, B. d'Aremberg, B. Diel, B. Bachelier, Bergamotte d'Esperen, and Fondante d'Automne.

Mr. J. Roberts, Gunnersbury, showed excellent fruits of Nouvelle Fulvie, Conseiller de la Cour, Beurré Bosc, B. Bachelier, Van Mons. Leon le Clerc, British Queen, Louise Bonne, and Marie Louise d'Uccle.

Messrs. Saltmarsh & Sons, Chelmsford, showed fruits of quite an average as regarded size, and clear skinned. Beurré Hardy, B. d'Amanlis, Doyenné du Comice, Thompson's Souvenir du Congrès, Madame Treyve, Pitmaston Duchess, and Marie Louise were the finest.

Mr. T. Richardson, 11, Eleanor Terrace, Barnes, had fair sized clear-skinned specimens of Beurré Rance, Bon Chrétien, Easter Beurré, B. Diel, B. Bosc, and Knight's Eyewood.

Messrs. Paul & Son, Old Nurseries, Cheshunt, showed medium-sized fruits of General Todtleben, Fertility, Louise Bonne, Duc de Morny, Beurré d'Amanlis, Triomphe de Jodoigne, and Marie Louise d'Uccle.

Twelve Pears, adapted for the district.—Mr. J. Hudson, Acton, had Pears of good average quality

of the following varieties:—Bellissime d'Hiver, Pitmaston Duchess, Beurré Clairgeau, B. d'Amanlis, and Marie Louise.

SOUTHERN COUNTIES.—*Thirty-six varieties.*—The collection from Mr. G. Pragnell, Sherborne Castle, Dorset, showed some very fine specimens, others were only of average quality; this was in the class for thirty-six. Those best represented were:—Uvedale's St. Germain, Pitmaston Duchess, Beurré Clairgeau, Esperen, Autumn Nelis, Louise Bonne, Duchesse d'Angoulême, Doyenné du Cornice, Beurré Diel, Jersey Gratioli, Marie Louise, Beurré Hardy, Hessel and Passe Colmar, which were of fine colour and clean.

Messrs. J. Cheal & Sons also showed here with good sized fruits of Belle de Bruxelles, Alexander Lucas, Baltet Père, Beurré Hardy, Doyenné du Comice, &c.

Twenty-four varieties.—Among others they also showed here good sized fruits, but lacking colour. Forelle, Conseiller de la Cour, Madame Treyve, Catillac, Clairgeau, &c., were well shown.

Twenty-four varieties.—Messrs. Lucombe, Pince & Co. had a collection of fruits showing generally much speckling of the skin; Pitmaston Duchess, Gansell's Bergamotte, and Napoleon were the better fruits.

Twelve Pears.—Mr. S. Ford, gr., Leonardslee, Sussex, in his collection had of fair size and appearance—Durondeau, Beurré Clairgeau, and Marie Louise d'Uccle. Mr. Wildsmith, gr. to Viscount Eversley, Heckfield Place, Hants, had a collection much above the average in size this season, and which in some cases were well coloured fruit. The best were—Doyenné Boussoch, Fondante d'Automne, Beurré Bachelier, B. Hardy, Doyenné du Comice, B. d'Ezée, Knight's Monarch. Many if not all these varieties were on the Quince. Mr. C. Turner, Slough, showed fine fruits of Beurré d'Amanlis, Hacons' Incomparable, Pitmaston Duchess, and Doyenné Boussoch.

C. Brymer, Esq., Ilslington House, Dorchester, showed medium sized fruits, with clear skin, Louise Bonne, Beurré Sterckmanns, B. d'Amanlis, B. Rance, Suffolk Thorn, Glou Morceau, and Zephirine Gregoire were the finest.

Six varieties of dessert Pears, best suited for the district.—Excellent fruits, although not so finely coloured as some in the show were to be seen in the collection of Mr. W. Wildsmith, Heckfield Place Gardens, Winchfield. They were all good and clean, including Pitmaston, Louise Bonne, Beurré Diel, Doyenné du Comice, Marie Louise, and Brown Beurré.

WESTERN COUNTIES.—Messrs. R. Smith, Worcester, showed in the collection of thirty-six varieties, of smallish size generally, but a few were of good size: Beurré Clairgeau, Pitmaston Duchess, General Todtleben, Gratioli of Jersey, Colmar d'Été, Glou Morceau, and Louise Bonne being the best.

In the smaller class for twenty-four best suited to the district, Mr. T. Coomber, Hendre, Monmouth, showed several fine examples, stated to have been grown under glass on walls in several instances. Maréchal de la Cour, Flemish Beauty, Catillac, Durondeau, Madame Treyve, Beurré de Capiaumont, Doyenné du Comice, and Bonne d'Ezée were grand fruits, and the whole lot was very clean and neat.

Twelve Pears.—Mr. Crump, Madresfield Court, Malvern, had fine well developed example of Josephine de Malines, Doyenné du Comice, Brockworth Park, Bergamotte d'Esperen, Pitmaston Duchess, and Glou Morceau. The fruits sent by Mr. T. Southall, South Bank, Worcester, were very inferior.

MIDLAND COUNTIES.—The fruits from the Midland districts were very few. Mr. Parker, Impney Gardens, Droitwich, however, contributed a handsome collection of twenty-four best suited to his district, very clean and neat all through; Zephirine Gregoire, Brown Beurré, General Todtleben, Gansell's Bergamotte, Duchesse d'Angoulême, Pitmaston Duchess, Hacons' Incomparable, and Beurré Diel were excellent fruit.

Twelve Pears.—Mr. R. Milner, Sundorne Castle, Salop, had very nice examples of Louise Bonne, Glou Morceau, Beurré Sterckmanns, B. d'Amanlis, B. Diel, Brockworth Park, Marie Louise d'Uccle, and Gratioli.

NORTHERN COUNTIES.—*Twelve Pears.*—Mr. Chuck, Brodsworth Hall, Doncaster, had highly coloured, rather small fruit, clear in the skin, of Beurré Diel, Doyenné du Comice, Maréchal de la Cour, &c.

In the collections of culinary Pears there was a fair display, Messrs. J. Veitch & Sons and C. Turner, Slough, being the chief exhibitors. Messrs. Veitch sent Catillac, Verulam, Vicar of Winkfield, Gilles-ô-

Gilles, and Bellissime d'Hiver, in good and well-coloured samples.

Mr. Turner had Catillac, Clairgeau, Uvedale's St. Germain, and Beurré Diel.

Messrs. W. Paul, Saltmarsh, and J. Hudson also showed good all-round fruits here. In the Society's collection, Uvedale's St. Germain, Vicar of Winkfield, Gilles-ô-Gilles, and Besi de Louvade were to be seen.

Fruits from Trained Trees, &c.—The classes for Pears from various forms of trees were not responded to so well as they might have been. The fruits from walls shown by Messrs. W. & E. Wells, Hounslow, and Mr. Charles Warden, Clarendon Park, Salisbury, were fine in form and size, but all lacked colour. Messrs. Wells had better looking fruits in the collection from pyramids, bushes, or cordons, Marie Louise d'Uccle especially so; and here were to be seen some really magnificent fruits from bushes under glass in pots from the Rev. W. Wilks, Shirley Vicarage, Croydon. Pitmaston Duchess were beautiful, extremely large, and remarkably clean. Beurré Baltet père, Beurré Dumont, Doyenné du Comice, Beurré d'Anjou, Josephine de Malines, and a large André Leroy were all remarkable fruits in the collection. Mr. W. Wildsmith also showed a fine lot of clean specimens of Pitmaston Duchess (pyramids), General Todtleben (cordon), Beurré Diel (pyramid), Duchesse d'Angoulême (open cordon), Beurré Hardy (bush). The specimens in this section going far to prove the value of trained trees for obtaining the finest fruits. Fruits from standards were, however, excellent from Mr. R. Dean, Bedford; Messrs. Wells, and Mr. J. Watkins, Pomona Farm, Hereford. Mr. Dean had Dr. Jules Guyot as is best; and Souvenir du Congrès from Mr. Wells.

The *Market Pears* were as attractive as the market Apples, and it was in this class that Messrs. Wells showed some of the finest Pears to be seen in the show. Souvenir du Congrès was specially remarkable, and others were Pitmaston Duchess, Doyenné du Comice, Louise Bonne of Jersey, Beurré Diel, and Hessel, all splendid samples.

Messrs. G. Bunyard & Co. also showed a fine lot here, and they were well coloured, too, especially Durondeau and Louise Bonne, Pitmaston Duchess, Fertility, and Doyenné Boussoch were also well shown.

In the *New or little known Pears* there were but very few exhibitors. Messrs. J. Veitch & Sons were the chief, with five dishes, containing, among others:—Triomphe de Vienne, Princess, Beurré rouge, De Livre, B. Baltet Père, Williams' Victoria, Fondante de Malines, Admiral Cecil, among others, all looking well, and many of them creeping into favour. Messrs. W. Paul & Son had Merisssa, Nevill, and Maude Hogg, Caroline Hogg; and A. H. Smee, Esq., sent Breadwell, a small green fruit with a red cheek.

Miscellaneous.—Mr. Allen, Gunton Park, Norwich, had some good clean fruit in a collection, the best being Maréchal de la Cour, Beurré Clairgeau and Mad. Treyve, General Todtleben, Beurré Superfin, and Marie Louise d'Uccle, which were fairly large specimens.

Messrs. Dicksons, Limited, Chester, and T. Rivers & Sons, Sawbridgeworth, completed the chief exhibits.

DISCUSSION ON THE PAPERS READ ON THE SECOND DAY (WEDNESDAY).

Dr. Hogg in the Chair. At the opening of the proceedings, the Rev. W. Wilks, Shirley Vicarage, Croydon, said they had had a request from the Melbourne Exhibition Committee to send out to them a representative collection of English Apples and Pears to be shown at the Exhibition in Australia. The request would be acceded to, and he wished to ask growers of Apples and Pears who were exhibiting here to be good enough to let Mr. Barron choose one or two specimens of different sorts and varieties which he should think worth sending out. Of course, sending out in that way was really sending a representation of what England could do, and he hoped they would not fail in giving their specimens for so good a purpose.

The CHAIRMAN said for some time past they had been treated to the observations of the theorist and doctrinaires as to what was the best way of developing fruit culture in this country, but they had now come to the practical part of the exhibition, from which he had no doubt great good would result.

APPLES FOR PROFIT.

Mr. BUNYARD read his paper, printed at p. 435.

In the discussion which followed, Mr. LE MAITRE (Acton) asked whether he should prune back every year, or let the tree grow in its own fashion?

Mr. SHIRLEY HIBBERD asked if The Queen was a marketable Apple?

Mr. WRIGHT said he had tried experiments on a small scale with regard to pruning, and although he had seen trees without being pruned doing well, on the whole the advantage had been in favour of pruning after planting. He thought it was wise to prune in the first year.

Mr. BUNYARD said he had every faith in The Queen becoming a very marketable Apple. It had one objection—that of being flat—and he knew market people had a preference for conical Apples. It was, however, extremely beautiful and fertile, which placed it in the first rank. As to pruning pyramids the remarks which applied to standard trees after the second and third year were also intended to apply to dwarf trees. It would be necessary to preserve the dwarf trees by pruning, and it must be left to the judgment of the grower and the state of his soil as to whether he pruned in four or five years or not. In Kent it was the custom to prune very hard indeed, and he thought it was carried too far. He was of opinion that they might allow Nature to have her own way more. No Apple tree should be cut in the first year of planting. Plum trees could be cut in the first year, but Pears and Apples and Cherries should be allowed to grow at their own sweet will.

Mr. ROUELL maintained that removing a tree well answered the same purpose as pruning if it be done in its growth. The effect of removing a tree made it more fertile and obviated to some extent the necessity of pruning.

Mr. BUNYARD said when a tree was taken up the soil was seen at once. If three or four roots were found they were shortened down and removed—removing being only a common-place name for root-pruning.

Mr. SHIRLEY HIBBERD objected to that definition. Lifting and root-pruning were very different. Root-pruning as it was commonly understood was a barbarous business.

Mr. PEARSON (Notts) said the most profitable orchard apple in his district was the New Northern Greening. As to grafting he had found that old Apples were very impatient to work. Pears would stand it very well, but apples did not like it at all.

Mr. WOOD (Kent) said he grew seven acres of Councillors [or Yorkshire Beauty] and he did not know anything better to grow. It was one of the best Apples they could grow in Kent.

Mr. BUNYARD said that when market growers demanded a thing, they might be quite sure that it was a thing worth having, he had a very high opinion of the New Northern Greening, but he omitted it, wishing to speak from his own experience.

FRUIT CULTURE FOR PROFIT.

Mr. PAUL then read his paper (see p. 436).

A gentleman asked why Mr. Paul left Jefferson out of the Plums?

Mr. PAUL replied that it was one of the finest Plums, but was not a sufficient bearer.

Another gentleman asked what was the age of the plants when put in the ground, if they were not to be pruned until four or five years; and Mr. Paul replied two years.

A question was asked whether it was legal for the tenant mentioned in the paper to clear away his Strawberries?

Mr. WOOD (Kent) said it was legal to clear away Raspberries and Strawberries and such-like, but not Pears or Apples.

Mr. DEAN (Hounslow), replying to a further question, said a market gardener had no power to destroy his top trees except he replaced them by others. He was, however, entitled to destroy what was known as ground crop. Trees should not be looked to to return a profit under four or five years, during which time an income might be derived by planting under them Violets, Wallflowers, &c.

Mr. SHIRLEY HIBBERD, speaking on the subject of frost, said its effects were different according to the strata of the atmosphere. At 10 feet above the surface frost was usually less intense than immediately in contact with the surface. There was more risk up to 10 feet than above it.

Mr. PAUL said that was not so always, as sometimes they had a better crop of fruit at the bottom of trees than at the tops. But as a rule the frost was more severe close to the ground, especially in

spring and autumn, than it was at certain heights; but he did not think it was universal.

Mr. ROUELL said, that a cutting wind at the top was worse than a frost at the bottom. A Duchess Oldenburg Apple was in full bloom in 10° of frost, and remained uninjured, while taller trees were very much more affected, because of the wind blowing a gale.

Mr. LE MAITRE (Acton) asked why British Queen was omitted from the Strawberries?

Mr. PAUL replied, that he had a high opinion of the British Queen, but he should not plant it for market. He preferred Dr. Hogg.

Mr. TONES could quite understand why it was left out. He grew a large number of Strawberries, but he could not get the British Queen to fruit at all on his ground.

Mr. T. BUNYARD spoke as to the effect of climate on fruit trees. Everything had been considered but dew. He had noticed on fruit trees, that while the lower branches had been saturated with dew the upper branches were quite dry. He thought frost would have a more injurious effect on dew-saturated blossoms than on the dry ones. The water got in and ruptured the germ, and there was an end of the fruit.

Mr. PEARSON, speaking on the subject of "sticking trees," said one source of trouble and disappointment was, that trees were planted nearly always three times too deep. He could not consider anything more unjust to the fruit tree than to have its roots shoved down so deep, so that it could not get sun or air. He was against deep planting, and he would suggest that planting should be done on a mound. The more they prepared the land the better would be the results. Replying to a question as to how deep he would plant, he said there was always a mark round the tree as it grew in the nursery, and if they planted to the same point again they could not go wrong.

Mr. SHIRLEY HIBBERD said he should like to point out a source of danger in private gardens where "sticking in" was done. Wherever a tree had been for any considerable length of time it was dangerous business to plant another in the same spot, for nine times out of ten there would be in the soil a residue of the old roots which would breed a mass of fungus.

Mr. DEAN said his rule was to plant Plums where Apples had been, as while Plums took one constituent out of the soil, Apples took another.

Mr. WILDSMITH then read his paper (see p. 437) on

DESSERT PEARS.

Mr. TONES asked why Jargonelle was left out of both lists?

Mr. WILDSMITH said he had a conscientious objection to the Jargonelle, as it went to sleep too soon. Replying to a question as to the nature of his soil, Mr. Wildsmith said it was a sandy gravelly loam. It was not a bad loam if it was well done, but it was no use digging it—as digging was understood. He never dug a bit of ground but always trenched, even for cabbages. He found no difficulty in growing Pears of a very good quality on a sandy gravelly soil.

A gentleman instanced how he had ripened successfully some Josephine de Malines by placing them on the hot air pipes for ten days, when their owner, who had discarded the tree from which they were taken, praised them highly.

Mr. WILDSMITH said he had also ripened the late Pear, Bergamotte Espere, in the same way.

PRUNING.

Mr. SHIRLEY HIBBERD then read his paper (see p. 438).

Mr. PEARSON thought Mr. Hibberd rather meant to talk about bad pruning *v.* good pruning than the non-necessity of pruning.

Mr. WRIGHT said the longer he lived the less he should use the knife in pruning if his object was to get the greatest possible amount of fruit. He referred to the Pear trees at Cardiff Castle, and said they had been allowed to assume their natural habits, the pruning they had been subjected to being the taking out of a few branches here and there so that the sun could shine through. Those trees were bearing 3 or 4 bushels of fruit as good as could be found in the exhibition. The great object was to let light shine through the trees, which would then form natural spurs. There were, however, in the garden some good examples of pruning and non-pruning. On the whole, for commercial fruit growing, people, Mr. Hibberd, he considered, was right in his principles and philosophy.

Mr. LE MAITRE said they had been talking about standard trees, but did the same remarks apply to wall trees?

Mr. SHIRLEY HIBBERD, in reply, said he was pleased to see that the general concurrence of opinion was with him. The trees at Cardiff Castle were very interesting, as illustrating this question. He did not say anything about wall trees, because he considered one subject enough at a time; but he would say—give wall trees plenty of room, and do not stunt the shoots. In conclusion, he moved a vote of thanks to Dr. Hogg for presiding.

Rev. W. WILKS, Secretary, Royal Horticultural Society, proposed a vote of thanks to the readers of papers.

Mr. PAUL returned thanks for the readers, and said he had seen many barren trees made fruitful and many fruitful trees made barren by the pruning knife. They could not, however, do without pruning. It was injudicious pruning that should stand condemned. It would not do for the idea to get abroad that they were of opinion that there was no necessity for pruning, as such a wrong impression might lead to serious consequences.

The proceedings were adjourned till Thursday.

NATIONAL CHRYSANTHEMUM SOCIETY.

OCTOBER 16TH.—A General Meeting of members of this Society took place at Anderton's Hotel, Fleet Street, on Monday evening, the 15th inst. Mr. E. Sanderson, President, in the chair. The Hon. Sec., Mr. W. Holmes, reported that the Midland Railway Company had offered to convey exhibits to and from the provincial show at Sheffield on November 16 and following day, at a single fare, provided the exhibits remained until the close of the show. Also that they were willing to reserve one or two saloon carriages, if a sufficient party going from London justified them in doing so. The Hon. Sec. also reported that he had paid the sum of £70, prizes awarded at the September show at the Royal Aquarium, and said he thought it would be necessary to modify the classes for Dahlias. A hearty vote of thanks was passed to those who acted as stewards on that occasion. Mr. Harman Payne, the chairman of the Catalogue Revision Committee reported that their labours as revisers had come to an end.

The following resolution was then moved by the Hon. Secretary, seconded by Mr. Geo. Stevens, and carried by acclamation:—"That the members of the National Chrysanthemum Society desire to place on record their high appreciation of the valuable work accomplished by those who prepared and published the edition of the National Chrysanthemum Society's Catalogue for 1888. To each of those who constituted the specially selected committee, and who prepared reports on the several sections, the members give their sincere thanks, and especially to the Revision Committee, who received these reports, revised and tabulated them. Further, that a Silver Medal of the Society, duly and suitably engraved, be presented to Messrs. Lewis Castle, C. Harman Payne, and George Gordon, in recognition of the admirable result of their painstaking and arduous work; also that a copy of this resolution be entered upon the minutes, and a lithographed copy be prepared and furnished to each member of the committee." The Hon. Secretary also proposed a resolution for the appointment of a permanent Catalogue Committee, to take such notes as may be necessary with a view to revision of the Catalogue at a future time, and that such committee consist of Messrs. Payne, Castle, and Gordon.

FRUITS UNDER GLASS.

PEACHES.—Where fruit is hanging on the trees in late houses give as much sunlight as possible, so as to impart flavour; a little artificial heat will prove of great service, as well as of benefit to the formation of the fruit buds. While applying heat give ventilation in moderation, and shut up with dry sun-heat when it can be secured.

SUCCESSION-HOUSES.—Trees in these, when thinned of all old bearing wood and freely syringed, should be watered at the roots if this be found necessary, and the foliage allowed to fall naturally.

The *Early House* will require attention now. If it be not already done all internal cleansing and painting should be done, and all rough snags and wounds cut smooth with the knife, so that the earth may close properly over them. In pruning remove all such of the old bearing wood as can be spared, and that which was left from the summer pruning; any very gross shoots of this season's growth may also be cut out. As a rule, I do not favour the shortening back of bearing wood on Peach and Nectarine trees, but if one side of the tree is likely to outgrow the other it becomes a necessity for the proper balance of the tree. Wash the shoots with a soft brush and warm water, in which some soft soap and a few handfulls of flowers of sulphur have been dissolved. When all has been thoroughly cleansed fasten the shoots to the trellis, allowing the shoots plenty of room to swell. Shoots from 5 to 7 inches apart will be quite close enough. Prick up the surface of the border and remove all the soil down to the roots. Dust the border over with a good dressing of Thomson's Manure and resurface with loam, lime rubbish, and charred wood ashes; place a few inches of horse-droppings on the top, and give a good soaking of tepid water. The outside border should also be covered with 14 to 15 inches of dry leaves, and thatched with straw.

Figs.—The early plants in pots or tubs should now be placed under protection, and the pruning seen to at once. If ripe Figs are expected in April, the plants will require to be started next month. In pruning remove all the weakly shoots which were left at the summer's pruning. The strong shoots should be but as little as possible; rather bend them down and depend on heavy cropping and summer pinching to reduce any grossness of shoots from all the snags and wounds, so as to afford but little hiding-places for insects; then well wash the wood several times over with hot water, soft-soap, and petroleum. If not already done, let the house they are intended to occupy be well scrubbed and painted if necessary. Wash the walls with hot lime and flowers of sulphur. *W. M. Baillie, Luton Hoo.*

DISBUDDING ROSES.

As "Wild Rose" does not seem to think it worth while to comment further on the question of disbudding Roses, the temptation to risk breaking a lance against "Rosa's" protest on p. 38, is irresistible.

"Rosa" leads off with a gibe against the exhibitors for their insufficient taste, and then proceeds to refer to "over full-blown Roses, however beautiful, &c." Does "Rosa" really consider "over full-blown Roses" at all beautiful? Such is certainly not the opinion of exhibitors. Perhaps the meaning of the word taste requires definition; for, after all, is *Maréchal Niel* so old that he is to be mocked as "virtually" (why virtually?) a bald-head?

"Why, indeed," says Rosa, "should the amateur who grows his Roses for their beauty in the garden or in the house, pinch out their side buds?" It is quite easy to imagine that "the rustle of their opening buds" was loud enough to prevent "Rosa" from hearing the Rose's obvious answer to this question, which is simply, that otherwise the amateur would fail in his alleged object, as his Roses would never attain their highest beauty either in the garden or anywhere else.

When Roses are not disbudded they are never seen in character, that is to say, they lack colour, depth, substance, and frequently form. This, of course, does not apply to what may be termed cluster or bud Roses, but it does apply most emphatically to the majority of hybrid perpetuals and to many Teas. To take a solitary instance from each class, few amateurs who have never disbudded *La France* have any conception of the richness and depth of colour that may be obtained in that variety when the flower-buds are well thinned out, and of the hardly more than semi-doubleness of *Madame de Watteville* when the myriad buds are all left on, growers who have made the experiment of blooming that lovely Rose without disbudding are only too well aware. It has been frequently urged as an objection against *La France* in the cut state that the flowers so soon assume a faded lilac tint; but if the flowers are

vigorously disbudded the colour becomes so intensified that the objection no longer holds good.

As for "Rosa's" appeal to the fair sex to decide between Roses disbudded or otherwise, it is perfectly certain and well known that the ladies, to a man (if the Hibernicism may be pardoned) invariably vote for the exhibitor's handsome blooms. It is not a matter of opinion, but of well known fact, that, however many gardens there may be in a neighbourhood where Roses are never disbudded, it will not be to them, if there be a single exhibitor's garden within reach, that when Rose blooms are wanted, the ladies will go; they know well enough how much richer will be the colouring of the exhibitor's flowers, and, more important still, how much longer they will last in water than blooms surrounded by buds, whose sole effect is to make the truss top-heavy and unmanageable in any vase arrangement.

Even on the score of beauty these surrounding buds are frequently, in the case of hybrid perpetuals, indefensible; for the buds of many varieties are eminently ungainly, both in form and texture, and they nearly always afford lodgment to aphides and mildew—neither very pleasant adjuncts to a lady's flower. Again, in some varieties the surrounding buds are so close to the central axis that they are quite concealed from view by the central flower when it is expanded, and in other varieties their peduncles are so long that the buds stand up beside and (especially in wet weather) frequently disfigure the outer petals of the bloom they surround. In the case of such varieties, moreover, these buds are sometimes the means of actually precluding the successional bloom they are alleged to ensure, for they prevent the full expansion of the main bloom, whose petals consequently rot without falling, and as the side buds attempt to develop are the cause of their disfigurement or failure to open. After all, the "procession of bloom" supposed to be provided by the side buds is not so very long, since the buds do not open one after another, as in many other plants, but as soon as the central bloom has been disposed of, the surrounding three or five buds proceed to expand as best they can all together, and the crowded bunch of little flowers produces no greater effect of colour in the garden than would one bloom with opportunity to develop.

To say that "we hear more complaints every year of the shortness of the Rose season" is to make a statement impossible of substantiation; but it is not by allowing Rose trees to carry more blooms than they can properly develop that the blossoming time in the Rose garden has been and is being annually extended, but by the increased cultivation of so-called summer and single Roses, which bloom so early, and add almost a month at the beginning of the Rose time; by the far more general planting of the Teas that flower early and late, and add to the season at both ends, and by the increasingly perpetual character obtained in recent novelties.

That rose-blooms look best, in the majority of cases at any rate, upon their parent branch, is a contention that few will oppose; but to insist that no Rose can ever look its best unless surrounded by side buds is entirely beside the point, since it assumes that all Roses have many-flowered trusses which, of course, is not the case. Not a few varieties produce, under ordinary circumstances, solitary flowers, notably all the Baroness Rothschild group and *Gloire Lyonnaise*, Roses which presumably "Rosa" will hardly consider unattractive.

However charming Gerrard Lewis' verses may be, they clearly show that he was not a practical rosarian, or he would never have propounded such a fallacy as that a Rose bloom will last "long summer days" upon the plant, though only a few hours in the cut state. While no hybrid perpetual will last through more than one hot July day it is notorious that by cutting a bloom in the early morning its greatest beauty will so be longer preserved than by any other means. Browning was undoubtedly a closer observer; that he knew well enough that a burning July day was the term of a "red red Rose's" life, and that its beauty was too fleeting for any

enjoyment of it to be long protracted, is clearly shown in his answer to his own question—

"Then how grace a Rose? I know a way!
Leave it, rather.
Must you gather?
Smell, kiss, wear it—at last throw away!"
Tura.

PLANT NOTES.

SOLANDRA GRANDIFLORA.

This plant grows freely but flowers rarely, such, at least is my experience of it. In the Palm-house at Kew it makes enormous growth annually, and although this growth is ripened and baked as much as possible, still no flowers are produced. In the Succulent-house, however, it has behaved better, no doubt because the treatment it gets is more favourable to the production of flowers. The stems are trained along close to the roof, and from these there spring numerous lateral branches, upon most of which there is now either a flower or bud. Each flower is 5 or 6 inches long, trumpet-shaped, and 4 inches across the mouth; the colour is creamy-white. The species is a native of the West Indies, where it is common in hedges, &c. It was introduced in 1817. It seems to be variable in its time of flowering, the months of January, March, and July being given, and now it is flowering in October. *W. W.*

ARUNDINA BAMBUSIFOLIA.

The Arundinas are graceful plants, with slender, reed-like stems, 3 to 4 feet in height, clothed from the base with long narrowly lance-shaped leaves. The above species, although not common in cultivation, is one of the prettiest Orchids flowering at the present time. The inflorescence is a loose, terminal raceme, the flowers of which open successively and measure 2 inches across; in appearance they resemble a small Lobelia. The broadly lanceolate sepals and petals are white, flashed with pale rose, the lip being rosy-purple with a white throat. A good specimen is in flower at Kew. This Orchid should have a place in the East India-house, and being terrestrial requires to be grown in a compost of fibrous peat and loam. It has none of the characteristic fleshiness of Orchids, either in leaf or stem, and must, therefore, not be subjected to a severe drying-off at any time. *W. B.*

BANANA CULTURE IN NICARAGUA.

UNDER the title of *Banana Cultivation on the Rama River, in the Mosquito Reserve, Republic of Nicaragua*, a Consular Report specially devoted to this subject has recently been issued from the Foreign Office, of which the following is the substance:—

This trade, it seems, has entirely sprung up during the last few years, the first shipment of Bananas for exportation having been made in 1883. The river Rama flows from the junction of two small streams, the rivers Escondido and Sequia, to the Bluefields Lagoon, on the Atlantic coast, a distance of some ninety miles, and previous to the year 1883 the banks of these rivers were uncultivated and uninhabited. About that time the Mosquito Fruit Company cleared a tract of land, with a frontage of three miles, on the river Rama, and commenced the cultivation of Bananas. The first shipment, consisting of about 500 bunches, was made in the latter part of 1883, the fruit being sold at the vessel's side at the rate of 50 cents (Nicaraguan currency) per bunch. The success that attended this first attempt induced many persons, including several foreigners, to commence the cultivation of Bananas, and now the whole of both banks of the Rama River, commencing from about 20 miles from the Bluefields Lagoon up to the junction of the rivers Escondido and Sequia, and such parts of the last-named river as are navigable for canoes have been cleared and cultivated. The banks of the Rama River, for about

twenty miles from Bluefields, are not adapted for cultivation, being too low and swampy. The following figures will show the rapid growth of the exportation of Bananas from this country:—In 1883 the number of bunches exported was 8000; in 1884, 40,000; in 1885, 45,147; in 1886, 154,434; and in 1887, 255,332.

To ship the Bananas during the year 1887 there were six steamships, each making monthly trips to the United States, where the whole of the fruit is sold; two of these steamers carrying their cargo to New Orleans, three to Baltimore and Philadelphia alternately, and one to New York. These steamers have not only to be fast, to enable them to arrive at their destination before the fruit ripens—as it has to be cut whilst still green, and handled with the greatest care, the slightest bruise leaving a black mark, and consequently depreciating the value of the fruit—but the steamers have also to be of light draught, to enable them to pass the bar of Bluefields Harbour, which has only some 14 feet of water. Once inside the bar, the steamers proceed up the Rama River, which has a considerable depth of water—in some places as much as 50 feet—and, calling at the various plantations on the river banks, purchase the Bananas that may be ready. In consequence of the greater part of the planters refusing to accept the low prices offered by the steamers, many of the vessels have been withdrawn, leaving, at the present time, it is stated, only two steamers making monthly trips—both to New Orleans—and in consequence a large quantity of fruit has ripened in the hands of the planters, and has rotted, for want of means of transportation.

A plantation of 10,000 Bananas would cost, including clearing the ground and planting, about 10,000 dols. currency. It would commence to give fruit in nine or twelve months after planting, and would last about five years; after that time the ground becomes exhausted, and the fruit so poor as to be unmarketable. The Bananas grown on the Rama River are the ordinary yellow Banana, about 6 to 8 inches long, and a red variety known as the "Patriota." This is smaller than the yellow form, but has a sweeter and finer flavour.

When the Bananas are stored away in the steamers they have to be kept shaded from the sun, and the temperature whilst in the tropics must be kept as low as possible by means of a free circulation of air; but in spite of all precautions, some bunches always ripen and are lost during transit, and in some few cases owing to the steamer having been obliged to batten down her hatches from heavy weather, or other causes, the whole of the cargo has been lost. According to the rules of the trade, eight clusters, or hands (as they are technically called) to a bunch forms a whole bunch; bunches having from five, and under eight clusters, or hands, are counted as half-bunches; and, as a rule, the steamers refuse to take at any price bunches having less than five clusters. *J. R. Jackson.*

Obituary

THOMAS HENDERSON.—Horticulturists in England and Ireland will learn with deep regret that Mr. Thomas Henderson died on the 10th inst. at 2, Fairfield Terrace, Templeogue, Co. Dublin, after a painful illness, extending over four years. The deceased served as foreman to Mr. R. B. Matthews, Belfast, afterwards with Mr. Hugh Dickson, Belmont, proceeding from there to Messrs. F. & A. Dicksons, of Chester; his last situation was at Pesbrook, Titchfield, Hants. He was a skilful plantsman, ever ready to impart his knowledge to his subordinates and less fortunate of his craft; he was a strict master, but one of the kindest, and generous to a fault, while his modest and unassuming disposition gained him many friends, all of whom, I am sure, will join me in this tribute of respect for a friend taken from us at the early age of thirty-five. He leaves a widow and two sons to mourn his loss. *R. Waller.*

RICHARD JOHNSON OF MARBURY.—The death at the ripe age of 84 years, is announced of this fine illustration of the gardener of the old school, practical and successful, but modest and retiring. He was particularly skilful in fruit growing. For 51 years he acted as gardener in the service of C. H. Poole, Esq., Marbury Hall, Cheshire and Whitchurch, Salop. Mr. Johnson leaves one son, a nurseryman at Lindow Common, Wilmslow.

THE WEATHER.

[Accumulated temperature indicates the combined amount and duration of the excess or defect of temperature above or below 32° F. for the period named, and is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.				
	Above or below the Mean for the week ending Oct. 15.	ACCUMULATED.			
		Above 42° for the Week.	Below 42° for the Week.	Above 42° difference from Mean since Jan. 3, 1888.	
				Above 42° difference from Mean since Jan. 3, 1888.	Below 42° difference from Mean since Jan. 3, 1888.
Principal Wheat-producing Districts.	Day-deg.	Day-deg.	Day-deg.	Day-deg.	
0. SCOTLAND, N. ...	2 below	29	4	— 289	+ 263
1. SCOTLAND, E. ...	1 above	42	3	— 504	+ 179
2. ENGLAND, N.E. ...	2 below	40	1	— 554	+ 101
3. ENGLAND, E. ...	5 below	42	19	— 429	+ 199
4. MIDLAND Cos. ...	5 below	46	17	— 523	+ 199
5. ENGLAND, S. ...	6 below	47	13	— 529	+ 258
Principal Grazing, &c., Districts.					
6. SCOTLAND, W. ...	2 below	38	0	— 409	+ 118
7. ENGLAND, N.W. ...	3 below	37	0	— 438	+ 131
8. ENGLAND, S.W. ...	5 below	48	6	— 527	+ 272
9. IRELAND, N. ...	2 below	41	0	— 33	+ 74
10. IRELAND, S. ...	4 below	46	4	— 33	+ 127
— CHANNEL ISLANDS	4 below	62	0	— 46	+ 154

DISTRICTS.	RAINFALL.			BRIGHT SUNSHINE.	
	More or less than the Mean for the Week.	No. of Rainy Days since Jan. 3, 1888.	Total Fall since Jan. 3, 1888.	Percentage of possible Duration for the Week.	
				Percentage of possible Duration since Jan. 3, 1888.	
Principal Wheat-producing Districts.	Tenths of Inch.		Ins.		
0. SCOTLAND, N. ...	1 less	185	30.2	10	28
1. SCOTLAND, E. ...	6 less	154	22.0	20	30
2. ENGLAND, N.E. ...	6 less	147	20.7	36	27
3. ENGLAND, E. ...	5 less	52	19.8	38	50
4. MIDLAND Cos. ...	7 less	135	19.0	45	28
5. ENGLAND, S. ...	6 less	139	20.6	52	20
Principal Grazing, &c., Districts.					
6. SCOTLAND, W. ...	9 less	150	30.4	23	32
7. ENGLAND, N.W. ...	9 less	151	21.9	28	29
8. ENGLAND, S.W. ...	10 less	155	25.7	51	35
9. IRELAND, N. ...	7 less	159	27.5	24	28
10. IRELAND, S. ...	8 less	140	26.8	40	34
— CHANNEL ISLANDS	7 less	172	22.8	55	40

THE PAST WEEK.

The following summary record of the weather for the week ending Oct. 15, is furnished from the Meteorological Office:—

"The weather has been unsettled and rainy in the extreme north of Scotland, but in all other parts of the kingdom the condition has been generally fine and dry.

"The temperature has continued below the mean in all districts except 'Scotland, E.' The deficit, however, has not been so large as that of last week, having ranged from 1° to 4° in most of our western and northern districts to 5° or 6° over our eastern, central, southern, or south-western England. The highest of the maxima, which were recorded on the 12th at most of the English stations, and on various dates over Ireland and Scotland, ranged from 56° in 'England, S.W.', to 63° in 'England, S.', and 64° in 'Scotland, E.' The lowest of the minima, which occurred generally at the beginning or towards the end of the period varied from 25° to 30° in most parts of England, from 26° to 28° in Ireland, and from 26° to 32° in Scotland. In 'England, N.E.', the lowest reading was 34°, and in the 'Channel Islands, 35°'. During the night of the 14th—15th thermometers exposed on the grass over the inland parts of south-western, southern, and south-eastern England fell to between 21° and 24°.

"The rainfall has been less than the mean. The fall has been very slight in all districts excepting 'Scotland, N.'"

"Bright sunshine shows an increase over some of our more southern and south-western districts, but a decrease elsewhere. The percentage of the possible amount of duration ranged from 10 to 23 in Scotland, from 24 to 40 in Ireland, and from 28 to 52 over England. In the 'Channel Islands' the percentage was 55."

MEAN TEMPERATURE OBSERVED AT CHISWICK DURING THE WEEK ENDING OCT. 27. (AVERAGE OF FORTY-FOUR YEARS.)

Oct. 21	49°·2	Oct. 25	47°·6
" 22	48°·8	" 26	47°·3
" 23	48°·4	" 27	47°·0
" 24	43°·0	Mean for the week	48°·0

MARKETS.

COVENT GARDEN, October 18.

[We cannot accept any editorial responsibility for the subjoined reports, which, however, are furnished to us regularly every Thursday by the kindness of several of the principal salesmen, who revise the list, and who are responsible for the quotations. It must be remembered that these quotations represent averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the supply in the market, and they fluctuate, not only from day to day, but often several times in one day, and therefore the prices quoted as averages for the past week must not be taken as indicating the particular prices at any particular date, and still less can they be taken as guides to the prices in the coming week. Ed.]

A FEW Canadian Apples to hand this week, but poor samples. Market well supplied generally, with dull trade. Kent Cobs in short supply, with a tendency to rise. *James Webber, Wholesale Apple Market.*

FRUIT.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Apples, half-sieve ... 2 0-4 6	Peaches, dozen ... 2 0-6 0
Cobs, 100 lb. ... 70 0-...	Pine-apples, Eng., lb. 1 6-2 0
Grapes, per lb. ... 0 6-2 6	Plums, half-sieve ... 2 6-4 6
Lemons, per case ... 12 0-21 0	— St. Michael, each 2 0-5 0
Melons, each ... 1 0-3 0	

VEGETABLES.—AVERAGE RETAIL PRICES.

s. d. s. d.	s. d. s. d.
Artichokes, p. doz. ... 4 0-...	Mustard and Cress, punnet ... 0 4-...
Beet, red, per dozen 1 0-2 0	Onions, per bunch ... 0 5-...
Carrots, per bunch ... 0 6-...	Parsley, per bunch ... 0 4-...
Cauliflowers, each ... 0 3-...	Potatoes, per cwt. ... 4 0-5 0
Celery, per bundle ... 1 6-2 0	— kidney, per cwt. 4 0-5 0
Cucumbers, each ... 0 9-...	Shallots, per lb. ... 0 6-...
Endive, per dozen ... 3 0-...	Spinach, per bushel ... 2 6-...
Green Mint, bunch ... 0 6-...	Tomatoes, per lb. ... 1 0-...
Herbs, per bunch ... 0 4-...	Turnips, per bunch, new ... 0 5-...
Leeks, per bunch ... 0 4-...	
Lettuce, per dozen ... 2 0-...	
Mushrooms, punnet 2 6-...	

POTATOES.—Myatt's finished. Beauty of Hebron, 60s. to 81s.; Regents, 90s.; and Magnums, 65s. to 80s. per ton.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Araha Sieboldi, doz. ... 8 0-18 0	Ferns, in var., doz. 4 0-18 0
Asters, per dozen ... 6 0-9 0	Foliage plants, various, each ... 2 0-10 0
Chrysanthemums, doz. 4 0-9 0	Ficus elastica, each 1 6-7 0
— large plants, each 2 0-4 0	Fuchsias, doz. ... 3 0-6 0
Cockscombs, per doz. 3 0-6 0	Heliotropes, dozen ... 3 0-6 0
Coleus, dozen ... 2 0-4 0	Hydrangeas, dozen ... 9 0-18 0
Cyperus, per dozen ... 4 0-12 0	Liliums, var., doz. ... 18 0-30 0
Dracena terminalis, per dozen ... 30 0-60 0	Marguerites, doz. ... 8 0-12 0
— viridis, per doz. 12 0-24 0	Mignonette, 12 pots 3 0-6 0
Ericas in var., doz. ... 0 0-4 0	Palms in var., each 2 6-21 0
Eunymus, in var., per dozen ... 6 0-18 0	Pelargoniums, scarlet, per dozen ... 2 0-6 0
Evergreens, in var., per dozen ... 6 0-24 0	Primulas, per dozen 4 0-6 0
	Solanums, dozen ... 9 0-15 0

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Abutilons, 12 bun. ... 3 0-6 0	Marguerites, 12 bun. 3 0-6 0
— French, per bun. 1 6-2 6	Mignonette, 12 bun. 2 0-4 0
Bouvardias, per bun. 0 6-1 0	Pelargoniums, 12 spr. 1 0-1 6
Camellias, 12 blms. 3 0-4 0	— scarlet, 12 spr. ... 4 0-8 0
Carnations, 12 blms. 2 0-3 0	Primulas, double, 12 sprays ... 1 0-1 6
Chrysanthemums, 12 blooms ... 0 6-3 0	Pyrethrums, 12 bun. 2 0-4 0
— dozen bunches ... 9 0-18 0	Roses, Tea, per doz. 1 0-3 0
Eucharis, per dozen 4 0-8 0	— coloured, dozen 2 0-4 0
Gardenias, 12 blooms 3 0-6 0	— red, per dozen ... 0 6-1 0
Gladiolus, doz. sprays 1 6-3 0	— Safrano, dozen ... 1 0-2 0
Heliotropes, 12 spr. 0 6-1 0	Stephanotis, 12 spr. 4 0-6 0
Lilium longiflorum, 12 blooms ... 4 0-6 0	Tuberose, 12 blms. ... 0 6-1 0
— lancifolium, 12 bl. 1 0-3 0	Violets, 12 bunches ... 1 0-2 0
Lapageria, 12 blooms 1 0-2 0	— dark, Fr., bunch 1 6-2 0
	— Parme, Fr., bun. 3 0-4 0

* * The sudden and severe frost (for the season) has considerably altered the prices for the time, many outdoor useful flowers being cut off; and although they have improved this week, indoor flowers at the present time do not meet the demand.

NOTICES TO CORRESPONDENTS.

* * Numerous Communications and Illustrations are of necessity held over by reason of the Fruit Congress.

CORRECTIONS.—On p. 417, "*Harpalum rigidum*," &c., "new authority" should read "Kew authority;" for "valuable" read "variable."

ESCHALLOTS: *G. B. & Sons*. These would be grown well in all those districts whence our market supplies of Onions come—Bedfordshire, about Sandy Bedford, Banbury, and parts of Warwickshire. The bulbs grow well in good soils in Hants, Sussex, Kent. We do not know which county contributes the largest quota.

MEDLAR JELLY: *H. H.* When ripe, but when not over-ripe.

NAMES OF FRUIT: *A. B. D.* Apple, Cox's Pomona. — *K. S.* 1, General Todleben; 2, Josephine de Malines; 3, Hesse; 4, Beurré Bachelier; 5, not known; 6, Vicar of Winkfield. — *Thomas Parks.* 1, Beurré Diel; 2, Louise Bonne of Jersey. — *Alfred Andrews.* Pott's Seedling. — *Wm. Broomfield.* 1, Cox's Orange Pippin; 2, Autumn Pearmain; 3, not known; 4, Grange's Pearmain; 5, Pine-apple Russet; 6, Yorkshire Greening. — *W. W. B.* Pear Van Mons Léon le Clerc; Apple Dumelow's Seedling. — *M. J. S.* 6, Ribston Pippin; 3, Cellini; 2, Emperor Alexander; 1, Gravenstein; 4, Margil; 5, Blenheim Orange; 1, Chaumontelle; 2, Beurré Bosc; 3, Maréchal de la Cour; 4, Winter Crassane; 5, Easter Beurré; 6, General Todleben; 7, Beurré Rance; 10, Bellissime d'Hiver.

NAMES OF PLANTS: *G. M. Olivet, Loiret.* 1, Cyripedium, probably selligerum: flower decayed; 2, Odontoglossum grande; 3, Oncidium curtum: a fine variety; 4, Cyripedium: decayed, and colour gone; 5, Lælia Perrinii; 6, Lycaste plana: a bad variety of it; 7, Lycaste sp.; 8, Lycaste Skinneri; 9, Lælia elegans var. probably: specimen bad; 10, Masdevallia infracta; 11, M. corniculata; 12, Scuticaria Steelii; 13, Odontoglossum grande; 14, Phalaenopsis antennifera; 15, Pleione (Cologynne) lagenaria; 16, Trichosoma suavis; 17, Cyripedium (Selenipedium) Schlumlii; 18, Odontoglossum Inseleyi; Phalaenopsis Esmeralda. Our correspondent is unreasonable. We cannot undertake to name more than six another time. An editor's duties are quite heavy enough without superadding the naming of plants, though we are always very desirous to oblige as far as we can. — *C. L.* 1, no specimen; 2, Cupressus Lawsoniana; 3, Thuia gigantea (true); 4, Thuia (Thuiopsis) borealis; 5, Cupressus Lawsoniana; 6, Picea Menziesii. — *Subscriber.* 1, Thuia plicata (Warreana); 2, Juniperus virginiana; 3, Thuia plicata; 4, Quercus cerris; 5, Fagus sylvatica laciniata; 6, Acer rubrum; 7, Carpinus Betulus. The Plane is Platanus orientalis. — *W. S. C. P.* (next week). — *H. A. J.* (next week). — *A. K. D.* (next week). — *Geo. Howe.* Hamanthus coccineus. — *F. W. B.* Colchicum variegatum. — *T. D.* Can you not send a better specimen? It is allied to the Oleander. — *H. E. F.* 1, Oncidium varicosum; 2, O. prætectum; 3, Odontoglossum Rossi. — *Mac.* 1, Metrosideros floribunda; 2, Diosma ericoides; 3, Hoffmannia; 4, Callicarpa purpurea; 5, Pilea muscosa; 6, unrecognisable. — *A. C.* 1, Crataegus coccinea probably; is it thorny? 2, Cotoneaster affinis.

NOTICE.—Will W. S. Melton, for whom we named a caterpillar in the number for September 29 last,

communicate with Mr. J. Birkenhead, Fern Nursery, Sale, near Manchester?

ONIONS: *E. A. K.* Onions ripened generally so badly this year, and are in consequence in a very sappy condition, that the loss in drying will be considerable, but how much we are unable to state definitely. The bulbs are likely to keep badly.

ORCHID PEAT: *Mr. A. Johnson*, of the Stanley Nurseries, Wilmslow, Cheshire, sends us a specimen of Orchid peat consisting almost entirely of clean fibre, well suited for its purpose.

MEALY-BUG ON VINES: *B. H.* In our Calendar, "Fruits under Glass," in our last issue, there will be found excellent means described of getting rid of this insect. It may be stated further that a keen look-out must be kept for it during the summer, and wherever seen to touch it with methy-lated spirits.

REMOVING TREES PLANTED IN NOVEMBER LAST YEAR: *G. B.* Do so at once; last year's removal will have resulted in a multitude of small roots which will at once seize on new soil on removal. Mulch with strawy manure, and do not prune next season.

TREE TOMATO AND MELON PEAR: *W. H. M., Munches.* Both plants require hothouse treatment and a certain measure of root confinement if much fruit be expected. The treatment afforded Muscat Grapes would suit both during the summer months.

VARIETIES OF NECTARINES AND PEACHES TO PLANT: *G.* Five Nectarines: Goldoni, Lord Napier, in August; Newton, Rivers' Orange and Dante, in succession during September. Five Peaches: Hale's Early, Mignonne Gros Early, the large flowered variety; Stirling Castle, Lady Palmerston, and Sea Eagle, coming in in the order named. We should plant these varieties in preference to your own selection, the fruits being finer, and the succession a longer one.

CATALOGUES RECEIVED.

G. PRINCE, 14, Market Street, Oxford—Roses on the Seedling Brier.

MESSRS. W. PAUL & SON, Waltham Cross, Herts—Roses.

L'HORTICULTURE INTERNATIONALE, 79, Rue Wiertz, Parc Léopold, Bruxelles—Orchids and New Plants.

L. SPÄTH, Rixdorf, Berlin, Germany—Fruit, Forest, and Ornamental Trees.

JAMES COCKER & SONS, 59, St. Nicholas Street, Aberdeen, N.B.—Bulbs.

LAMBERT & REITER, Trier, Rhenish Prussia—Fruit and Rose Trees.

J. SCHWARTZ, 7, Route de Vienne, Lyon, France—Roses.

DAMMANN & CO., San Giovanni a Teduccio, near Naples, Italy—Wholesale Seed List.

THOMAS WARNER, The Abbey, Leicester—Fruit Trees.

CHARLES TURNER, Royal Nurseries, Slough—Roses, Fruit Trees, &c.

PAUL & SON, Old Nurseries, Cheshunt, Herts—Fruit and Ornamental Trees, &c.

ANDRÉ LEROY, Angers, Maine-et-Loire, France—Supplement to General Catalogue (Fruit and Forest Trees, &c.).

JAS. M. THORBURN & CO., 15, John Street, New York, U.S.A.—American Seeds (Wholesale List).

BAUDRIER, Gennes, Maine-et-Loire, France—Wholesale List of Trees and Shrubs.

FRANK CANT, Colchester—Roses.

B. R. CANT, Colchester—Roses.

COMMUNICATIONS RECEIVED.—*H. Correvon*, Geneva.—*F. H. La Mortola*.—*W. A.*—*F. B.*—*R. J. L.*, Nottingham.—*J. O'B.*—*H. H. W.*—*J. R. J.*—*Canon E.*—*H. H.*—*D. L.*—*W. A.*—*Aberdeen*.—*Weller*.—*Dr. S.*—*D. T.*—*T. B. H.*—*M. F.*—*Ehebrun*.—*J. T. B.*—*J. C. W.* & Sons. — *S. A.*—*W. S.*—*H. D.*—*W. G. S.*—*C. Philp.*—*W. R.*—*A. M.*—*Whitton*.—*W. Didams*.—*J. E. N.*—*C. F. P.*—*W. E. G.*—*J. R. J.*—*W. A.*—*W. B. H.*—*J. T. B.*—*Thompson*.

Correspondents sending plants or fruits to be named, or asking questions demanding time and research for their solution, must not expect to obtain an answer to their enquiries in the current week.

DIED, at The Gardens, Villa Rothschild, Hohe-Warte, Vienna, on the 1st inst., aged thirty-six, suddenly, *GEORGE WATSON ROBSON*, only son of the late John Robson, formerly of Cresswell Hall, Northumberland, greatly loved by all his friends, and highly esteemed by all his colleagues. His early death is deeply regretted.

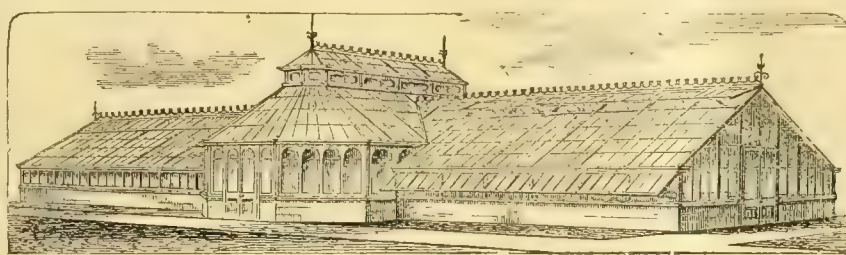
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to the Queen.**ROBINSON & CLEAVER'S**By Special Appointment
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awarded in open competition.**R. HALLIDAY & CO.,**

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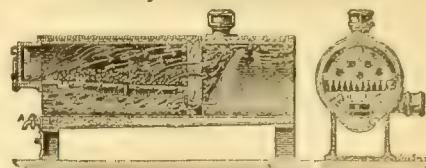
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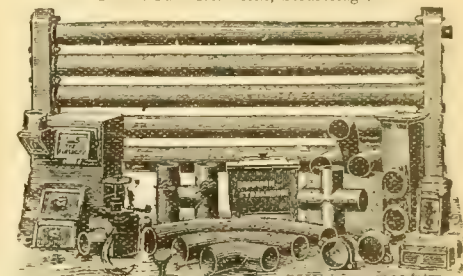
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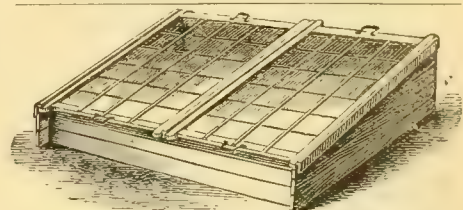
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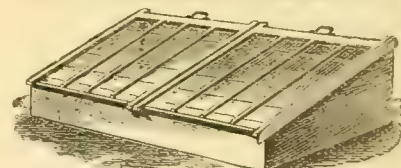
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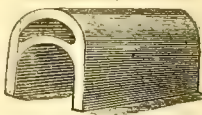
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Culture of Flowers and Fruit; also Herbaceous Plants—very
few Orchids. Thirty miles from London. Good character
required.—Apply by letter to W. CATTLEY, 95, Belgrave
Road, London, S.W.

GARDENER WANTED.—A Committee of
the Vestry of the Parish of Bermondsey will meet at the
Town Hall, Spa Road, S.E., on Tuesday, the 30th instant, at
7 o'clock in the evening precisely, to receive applications for
the situation of Gardener. He will be required to work in the
two Recreation Grounds, formerly Saint Mary Magdalen and
Saint James' Churchyards, and also to attend to the Trees in
the Streets. Age not to exceed 40. The wages will be 25s. per
week. Candidates will be required to attend the Committee
at the time of Meeting as above. Applications accompanied
with three testimonials as to character to be sent in before the
hour of meeting, addressed "Applications for Gardener." Can-
vassing is strictly prohibited.

By order, J. HARRISON, Clerk.

Town Hall, October 17, 1888.

WANTED, a GARDENER, for Bourne-
mouth, who can cultivate a Small Kitchen Garden
and attend to a Conservatory and Pleasure Garden. Wife as
Cook.—Apply, stating ages, wages, &c., to E. V. S., 4, Mag-
dalen Street, Oxford.

WANTED, a GARDENER, for situation
in suburbs of London. Age between 30 and 40,
married (without children). Must be an intelligent man, with
knowledge of plants, including Orchids. Wages, 30s. per
week, with lodge at gate (to attend to), light, and firing. One
assistant.—M. N., *Gardeners' Chronicle* Office, 41, Wellington
Street, Strand, W.C.

WANTED, a GARDENER, age under 37,
thoroughly experienced in all branches, including
Packing and Disposal, and practised in Keeping Proper Books.
Must have exceptional references as to character and ability.—
State qualifications, &c., by letter only to C., 11, Beechholm
Road, Upper Clapton, E.

WANTED, a thoroughly experienced
GARDENER. Must understand Vinery, &c. Three
in garden, which is small. Cottage found. State wages.—
Rev. H. E. TROTTER, Ardington Vicarage, Wantage.

WANTED, a young man, as GARDENER,
and to manage Cows, Pigs, &c.—Married, no family.
Wife to do Dairy and Poultry.—M. A., *Gardeners' Chronicle*
Office, 41, Wellington Street, Strand, W.C.

WANTED, a thorough MARKET GAR-
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in Tomatoes, Mushrooms, and Early Forcing of Vegetables,
Flowers, &c. Good reference as to character and ability re-
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WANTED, a WORKING FOREMAN, to
manage a small Nursery in S.E. suburb.—Married; to
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Work generally.—Terms and particulars to K. Z., *Gardeners'*
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WANTED, a NURSERY PROPAGATOR—
a rising young man, who has been in a Country
Nursery, and can grow and propagate two things—Clematis
and Rhododendrons. He must start at a moderate wage, and
he will be under close supervision until he proves his capa-
bility and reliability.—CHARLES NOBLE, Bagshot.

WANTED, AT ONCE, a good Outside NUR-
SERY HAND, well acquainted with Lifting, Planting,
and the general routine of Nursery Work. A permanent post
for a suitable man.—State fullest particulars to J. W. SILVER,
Streatham and Norbury Nurseries, S.W.

WANTED, an energetic young MAN, quick
at Potting, Watering, &c., to work under Glass. Must
have good knowledge of Indoor Work.—LANE AND MARTIN,
Nurserymen, 227, Brixton Road, S.W.

WANTED, a FLORIST'S MAN, for West
End Shop. Must be a good Buyer of Flowers and
Plants, and understand Window Boxes, Plants, and Making-up.
—Apply, stating age, experience, references, wages, to A.,
Gardeners' Chronicle Office, 41, Wellington Street, Strand, W.C.

Nursery and Seed Trade.

WANTED, as TRAVELLER, a thoroughly
efficient trustworthy, energetic, sober, and steady
man.—Send particulars of experience, age, references, salary
expected, to TRAVELLER, *Gardeners' Chronicle* Office, 41,
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WANTED, a thoroughly efficient CLERK,
in a Nursery where Specialties in Seeds and Plants are
a first consideration. Will have charge of Office, conse-
quently must be a good Correspondent and Book-keeper. A
good general knowledge of the Trade, and special ability for
framing Catalogues indispensable. 40s. per week to competent
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WANTED, a SALESMAN, for the Glass
Department. It is essential that he be a first rate
Plant Grower.—Applicants to state experience and wages ex-
pected, to FISHER, SON, AND SIBRAY, Handsworth Nurseries,
Sheffield.

WANTED, a young Man, as ASSISTANT,
in general Seed and Nursery Business, good at Weath-
&c.—State wages, references, &c., to LANTON BROTHERS,
Bedford.

GARDENING APPOINTMENTS.

Mr. B. CALVERT has been appointed Head
Gardener to JOHN ARCHER HOUBLON, Esq.,
Great Hallingbury, Bishop's Stortford.

Mr. G. CARPENTER has been appointed Head
Gardener to Major COLLIS BROWNE, Broad Oaks,
Byfleet, Surrey.

Mr. JAMES SHERLOCK, of Willersley Gardens,
Derby, has been appointed Head Gardener to
Captain E. WALKER, Rock House, Cromford,
Derby.

Mr. ANDREW SMITH has been appointed as
Head Gardener to GEORGE CARMICHAEL, Esq.,
Taymount, Broughty Ferry, N.B.

Mr. J. VOSS has been appointed as Head
Gardener to W. SAVILL, Esq., The Finches,
Lindfield, Sussex.

Mr. WM. STANBURY, late Head Gardener to
P. SAILLARD, Esq., Buchan Hill, Crawley, has
been appointed as Head Gardener to T. D.
GALPIN, Esq., Bristol House, Putney Heath.

WANT PLACES.

Letters addressed "Poste Restante" to initials or to fictitious
names are not forwarded, but are at once returned to the
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Remittances in Payment of Repeat Advertisements are
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Advertisers are requested when Remitting to give their
Names and Addresses, and also a Reference to the Adver-
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POSTAL ORDERS.—To Advertisers, Subscribers, and
Others.—It is very important in Remitting by Postal Order
that it should be filled in payable to No. 42, DRURY LANE,
to W. RICHARDS, as, unless the number of a Postal Order is
known, and it has been made payable at a particular office, and
to a particular person, it is impossible to prevent any person
into whose hands it may fall from negotiating it.

N.B.—The best and safest means of Remitting is by POST-
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R. B. LAIRD AND SONS can recommend with
every confidence Scotchmen thoroughly qualified as
GARDENERS, FORESTERS, or LAND STEWARDS, either for
large or small establishments, and will be pleased to furnish full
particulars on application.—17, Frederick Street, Edinburgh.

SCOTCH GARDENERS.
—JOHN DOWNIE (of the late firm of Downie & Laird), Seedsman, 114, Princes Street, Edinburgh, has at present on his List a number of **SCOTCH GARDENERS**, waiting re-engagements. He will be pleased to supply full particulars to any Lady, Nobleman, or Gentleman requiring a trustworthy and competent Gardener.

RICHARD SMITH AND CO.
beg to announce that they are constantly receiving applications from Gardeners, seeking situations, and that they will be able to supply any Lady or Gentleman with particulars, &c.—St. John's Nurseries, Worcester.

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DICKSONS (Limited) are always in a position to **RECOMMEND MEN** of the highest respectability, and thoroughly practical at their business. All particulars on application.
Telegraphic and Postal Address "DICKSONS, CHESTER."

To Noblemen and Gentlemen requiring Land Agents, STEWARDS, BAILIFFS, or GARDENERS.
JAMES CARTER AND CO. have at all times upon their Register reliable and competent MEN, several of whom are personally well known to Messrs. Carter. Enquiries should be made to 237 and 238, High Holborn, W.C.

B. S. WILLIAMS begs to intimate that he has at present in the Nursery and upon his Register some excellent Men, competent either to fill the situation of **HEAD GARDENER, BAILIFF, FOREMAN, or JOURNEYMAN.** Ladies and Gentlemen requiring any of the above will please send full particulars, when the best selections for the different capacities will be made.—Holloway, N.

GARDENER (HEAD), where two or more are kept.—Age 31, single at present; over three years' character from present situation as Foreman.—H. HALL, The Gardens, Lower Woodside, Hatfield, Herts.

GARDENER (HEAD).—Age 40, married eight years, no family; previously with Viscount Cranbrook, C. S. Mortimer, Esq. (sixteen years), Sir C. Pigot, Bart. Exhibiting at London and Brighton. Son of T. Marshall, Head Gardener forty years to W. Peel Croughton, Esq.—G. MARSHALL, 39, Thrale Road, Streatham, S.W.

GARDENER (HEAD); age 35, married; twenty years' practical experience in good establishments in Early and Late Forcing of Fruits, Flowers, and Vegetables, the Cultivation of Stove and Greenhouse Plants, Orchids, &c.; also Kitchen Gardens and Pleasure Grounds.—J. FINLAYSON, The Gardens, Combe Bank, Sevenoaks.

GARDENER (HEAD); Age 31.—Mrs. ARDENSON, Watcley Abbey, Farnham, Surrey, wishes to recommend her late Head Gardener (who was with her for nearly seven years) to any Lady or Gentleman requiring a good practical Gardener. Twenty years' experience in large establishments.—S. P., Upper Shornes, Gravesend.

GARDENER (HEAD WORKING).—Married, three children; well-up in Gardening in all its branches. Abstainer. Good references.—F. BARRETT, Downham Market, Norfolk.

GARDENER (HEAD WORKING).—Married, two children (youngest age 9); thoroughly experienced in Early and Late Forcing, &c. Highest references from present and former employers.—T. W., Monson Road, Redhill.

GARDENER (HEAD WORKING).—Age 38, married; twenty-one years' practical experience in all branches. Five years in last situation. Thoroughly energetic and trustworthy. Excellent reference.—J. PENTLAND, Claygate Post-office, Surrey.

GARDENER (HEAD WORKING).—Messrs. BUNYARD & Co. can confidently recommend a thorough practical Gardener, where three or more are kept. Many years' experience in all its various branches. Leaving through death. Good testimonials.—The Old Nurseries, Maidstone.

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GARDENER (HEAD, or good SINGLE-HANDED).—Age 28, married; first-class experience. Abstainer. Excellent references.—T. J., 113, Olinda Road, Stamford Hill, N.

GARDENER and BAILIFF, or to Manage a Fruit Farm.—Age 30, married; understands Gardening in all its branches. Eight years' good character from present employer.—J. FIELDER, The Cottage, Swanwick Lane, near Southampton.

GARDENER (SINGLE-HANDED), or otherwise.—Age 28, married; fourteen years' experience. Good character from present and previous employers.—J. B., Betley Cottage, Lyth Hill, near Shrewsbury.

GARDENER (SINGLE-HANDED), or otherwise.—Age 38; experienced in Flower and Kitchen Gardening, Vines, Forcing, &c. Wife thoroughly experienced Laundress. Personal and previous references.—J. B., 18, Sulina Road, Brixton Hill, S.W.

GARDENER (SINGLE-HANDED), or FOREMAN, where two or three are kept.—Age 26; nine years' experience Inside and Out. Good references.—B. SCALES, 318, Mennwood Road, Leeds.

GARDENER (UNDER), in a Gentleman's Garden.—Age 22; seven years' experience. Good character.—FRED. HERRINGTON, Ditchampton, Wilton, Salisbury, Wiltshire.

GARDENER (UNDER).—Age 25, single; ten years' experience in all branches. Highest references.—WM. OWEN, Killey, Worthington, near Wigan, Lancashire.

GARDENER (UNDER).—Age 22; eight years' experience, Inside and Out. Two years' good character from last place.—T. BISHOP, Dovers, Reigate, Surrey.

GARDENER (UNDER); age 19.—£2 will be given to any person procuring Advertiser a suitable situation. Five years' practical experience of Gardening in all its branches, especially Greenhouse and Forcing Work. Good character.—BENJAMIN, Tilt, Cobham, Surrey.

FOREMAN, in the Houses, in good establishments.—Age 27; good references from previous employers.—G. LILLELY, Thorny, near Peterborough, Cambs.

FOREMAN, in the Houses, in a good establishment.—Age 27; can be well recommended from previous situations.—E. KIRBY, Milltown, Ashover, Chesterfield.

FOREMAN, in the Houses.—Age 24, single; nine years' experience. For the last three years under Mr. G. WHEELER, St. John's Lodge, Regent's Park, N.W., who will answer any enquiries.

FOREMAN, in the Houses, in Private Establishment.—Age 23; ten years' experience. Has obtained practical knowledge in each department. Good testimonials as to personal character and abilities.—H. BAZELEY, Pinkney's Green, Maidenhead.

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FOREMAN (GENERAL) and PROPAGATOR (WORKING).—Well up in Fruits, Roses, Rhododendrons, Conifers, Clematis, Stove, Greenhouse, and Bedding Plants, and General Routine of the Trade, Wreaths, Crosses, &c. Good Salesman. Sixteen years' experience. First-class reference.—FOREMAN, 41, Wellington Street, Strand, W.C.

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To Nurserymen, Florists, and Seedsmen.
FOREMAN PROPAGATOR, and GROWER.—Age 37, married; upwards of twenty years in London and Provincial Retail Trade. Well up in Fruit Growing, Cut Flowers, Furnishing, and Seed Trade.—FLORIST, Grove Cottage, Chappell Park, Addlestone.

To Nurserymen and Others.
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PROPAGATOR and GROWER of Soft-wooded Plants for Market.—Age 29; fourteen years' experience in London Nurseries.—J. P., 3, Plainmoor Terrace, St. Mary's Church, Torquay.

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JOURNEYMAN (FIRST), in a large establishment.—Age 24; eight and a half years' experience in all branches of Gardening. Good testimonials as to personal character and abilities.—A. H., 2, Chesham Street, Chester.

JOURNEYMAN, Inside and Out.—Age 22; willing to make himself useful. Used to Firing. Good reference.—G. GRIFFIN, Heath Lane, Oldswinford, Stourbridge.

JOURNEYMAN, in a good Garden.—Age 22; four and a half years in present place. Well recommended.—F. BENGOUGH, The Gardens, Suggall Hall, Eccleshall, Staffordshire.

JOURNEYMAN; age 22.—JAMES HORNER, The Gardens, Myton Hall, Helperby, York, can with confidence recommend W. Palmer, who has been with him two years.

JOURNEYMAN, in the Houses.—Has had good experience, and can be well recommended by present and previous employers.—W. GIBSON, Steventon Manor, Micheldever, Hants.

JOURNEYMAN, in the Houses in good Private Garden.—Age 29; three years' experience Inside and Out. Excellent references.—HEAD GARDENER, Wood End, Chichester.

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IMPROVER, in a Gentleman's Garden.—Age 18; strong. Three and a half years' good character.—W. HARDY, Whitacre Station, near Colehill, Birmingham.

IMPROVER, in a Gentleman's establishment, Inside and Out.—Age 18; four and a half years' good character. Bothy preferred.—W. T. NAISH, The Gardens, Bay House, Alverstoke, Gosport, Hants.

To Gardeners.
IMPROVER, in a Gentleman's Garden.—Age 17; intelligent, strong.—Had two years' experience. Good character.—WALMSLEY, Schoolhouse, Orton, Peterborough.

IMPROVER, in a Nobleman's or Gentleman's Garden; age 17.—SAMUEL COULTER would be pleased to recommend a strong active young man as above. Three years' experience.—SAMUEL COULTER, Northfield Nursery, Ealing Dean, W.

TO NURSERYMEN.—Situation in Nursery.—Age 24; ten years' experience in growing Tea Roses, Ferns, General Cut Stuff, Grapes, Tomatoes.—A. B., Cottage, Hellenboro House, Roehampton Lane, Putney.

TO GENTLEMEN, &c.—EDWARD HOLMBURY, Gardener to the Hon. F. Levison Gower, Holmbury, Dorking, will be pleased to recommend his Foreman to any Lady or Gentleman requiring the services of an experienced and trustworthy man. Married, age 30.

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TO HEAD GARDENERS, &c.—The Rev. MAUD highly recommends a youth (age 17) in a large place under a Head Gardener. Five years in the House and Garden. Total abstainer.—W. HULBERT, 5, Stamford Place, Milverton, Leamington.

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TO HEAD GARDENERS.—A young man is desirous to place himself with a first-class Gardener, to learn the Business in all its branches.—Send particulars and Premium required, to E. E., Hilsa Farm, Hilsa, near Cosham, Hants.

TO GARDENERS, &c.—Wanted a situation in Garden by a strong, industrious, young man, willing to be useful.—A. R., GARDENER, The Gardens, Mount Mascal, Bexley, Kent.

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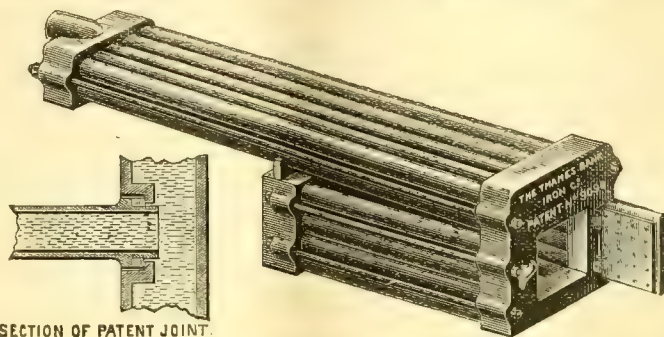
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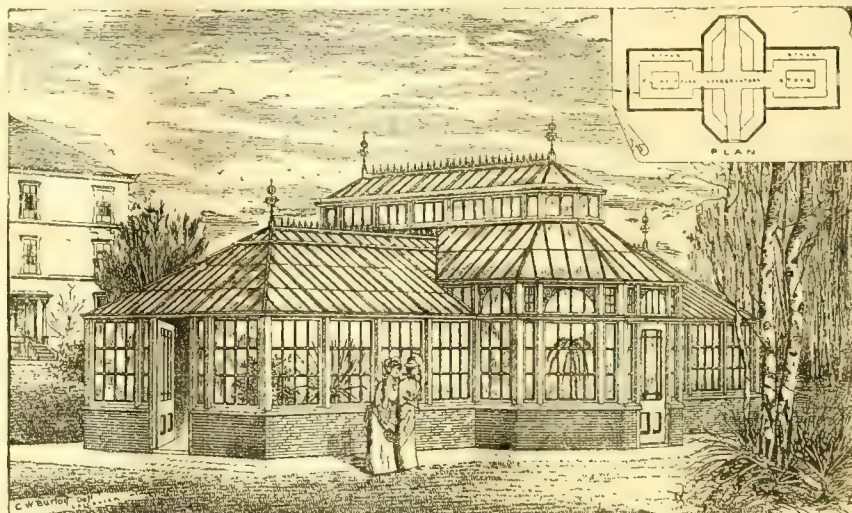
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ESTABLISHED 1841.
No. 2496.

SATURDAY, OCTOBER 27, 1888.

[Regt. as a Newspaper. { **PRICE 3d.**
POST-FREE. 3¹/₄d.

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See large Advertisement, October 6, page 347.

See large Advertisement, October 6, page 347.

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MESSRS. PROTHEROE AND MORRIS will
SELL by AUCTION, at the Central Sale Rooms, 67 and
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directed by Mr. John Tuttle (who is disposing of the
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from the Sunbury Railway Station, on MONDAY, October 29,
and following day, at 12 o'clock precisely each day,

33,700 FRUIT TREES, including
5000 Standard Apples, 2 years 8,800 Maiden Apples
5000 Morello Cherries 10,000 Victoria Plums
500 Pears 20,000 Fruit Stocks.
20,000 DWARF ROSES, including the choicest named
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10,000 Evergreen and Coni- 20,000 Quick
ferous Shrubs 12,000 Chrysanthemums
2,000 Limes and other Orna- 1,000 Eucharis
mental Trees 2,000 Bouvardias
&c., &c.

May be viewed any day prior to the Sale. Catalogues had
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N.B.—The valuable FREEHOLD NURSERY will be offered
in one lot, on the Premises, on MONDAY, October 29, at
half-past 11 o'clock precisely. See separate Advertisement.

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VALUABLE FREEHOLD NURSERY.

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instructed to SELL by AUCTION, on the Premises,
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acceptable offer be previously made, the important FREE-
HOLD NURSERY, known as Osborn's Nursery, Sunbury,
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Brick-built Eight-roomed Residence, 21 Greenhouses, all of
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brick-built Stables, Packing and Cart Sheds, and other Build-
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business.

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Dartford; and of the Auctioneers, 67 and 68, Cheapside,
London, E.C., and Leytonstone, E.

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MESSRS. PROTHEROE AND MORRIS will
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and 68, Cheapside, London, E.C., on TUESDAY NEXT,
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ORCHIDS IN FLOWER, from various collections, including
Odontoglossums, Cattleyas, Lælias, Cypripediums, and others.
Also an assortment of well-grown ESTABLISHED ORCHIDS,
and a quantity of CALANTHES.

On view morning of Sale, and Catalogues had.

Wednesday Next.

IMPORTANT TO THE TRADE.

6000 LILIUM AURATUM, 500 RUBRUM and ALBUM, splen-
did Bulbs, just received from Japan; 3000 LILY of the
VALLEY, 5000 LILIUM CANDIDUM, 3000 NARCISSUS,
500 AZALEAS and CAMELLIAS, GREENHOUSE PLANTS,
in variety; English-grown LILIES, and other hardy
BULBS.

MESSRS. PROTHEROE AND MORRIS will
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Rooms, 67 and 68, Cheapside, London, E.C., on WEDNESDAY
NEXT, October 31, at half-past 12 o'clock precisely.

On view morning of Sale, and catalogues had.

Friday Next.

MESSRS. PROTHEROE AND MORRIS will
SELL by AUCTION, at their Central Sale Rooms,
67 and 68, Cheapside, London, E.C., on FRIDAY NEXT,
November 2, at half-past 12 o'clock precisely, by order of Mr.
F. Sander, a very good lot of the magnificent CYPRIPIEDUM
CURTISII, in excellent condition, with large and splendid
glossy leaves; also a fine lot of SOBRALIA XANTHO-
LEUCA, the finest species of the genus; splendid importation
of DENDROBIUM BIGIBBUM, the finest of all Australasian
Dendrobiums; a fine lot of the rare ORNITHOCHEPALUS
GRANDIFLORUS, a grand lot of ONCIDIUM CRISPUM, O.
SPHACELATUM MAJUS, O. AMPLIATUM, O. HASTATUM,
Roezii; ODONTOGLOSSUM VEXILLARIUM variety, in
good condition; a large importation of CATTELYA GASKEL-
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ORCHIDS:—Angraecum falcatum, Aspidia odorata, Bifrenaria
Colleyi, Brassia picturata, Cattaeum Bungei, B. in flower,
Cataetum callosum, Cattleya Walkeriana, Ludemannia spe-
ciosa, Lycaste Denningiana, Lycaste leucantha, Myanthus
speciosus, Odontoglossum Humeanum, and many other rare
ORCHIDS in splendid condition, together with 10 Cases of
valuable IMPORTED ORCHIDS.

The Sale will also include a few CYPRIPIEDUMS from a
Gentleman's collection, amongst them being C. Morganiae,
grande, selligerum, majus, and others; and an importation of
the extremely rare CELOGYNE DAYANA.

On view morning of Sale, and Catalogues had.

Abbey Wood.

By order of the Executrix.

TWO DAYS' CLEARANCE SALE of unusually well-grown
NURSERY STOCK. Importations to Gentlemen, Builders,
Landscape Gardeners, and Others.

MESSRS. PROTHEROE AND MORRIS will
SELL by AUCTION, on the Premises, the Abbey Wood
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Wood Railway Station, on WEDNESDAY and THURSDAY,
October 31 and November 1, at 12 o'clock precisely, a large
quantity of well-grown NURSERY STOCK, consisting of about
10,000 Cupressus Lawsonii, 1 to 8 feet; 5200 other Conifers
from 1 to 3 feet; 6000 Oval-leaved Privet, 3 to 4 feet; 6000
Green Hollies, 1 to 4 feet; 2500 Variegated Hollies, 1 to 5 feet;
1000 English Yews, 2 to 4 feet; 4000 Aucubas, 2500 Common
Laurels, 3 to 4 feet; 2000 Dwarf Roses, Standard Ornamental
Trees, &c.

May be viewed any day prior to the Sale. Catalogues may
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Cheapside, E.C., and Leytonstone, E.

Leytonstone, E.

Adjoining the Leytonstone Railway Station.

TWO DAYS' SALE of beautifully grown NURSERY STOCK
and GREENHOUSE PLANTS, arranged in lots to suit
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MESSRS. PROTHEROE AND MORRIS will
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Nursery, Leytonstone, E., on THURSDAY and FRIDAY,
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sive assortment of 3000 Conifers, Evergreens, and Deciduous
Shrubs in various sizes, carefully prepared for removal; 2000
clean green Limes, Poplars, and other Ornamental Trees;
2000 Rhododendrons; 3000 Fruit Trees, embracing all the
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&c.; 4000 Standard and Dwarf Roses, and a large variety of
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STOCK, HERBACEOUS PLANTS, and BULBS, for the
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Nursery, Tottenham, on TUESDAY, November 6, at 11 o'clock
precisely, in consequence of the unusually large number of
lots, an extensive quantity of beautifully-grown and thriving
NURSERY STOCK, including 5000 Veronica Traversii, 6000
bushy Ornamental Shrubs, from 1 foot to 2½ feet, all well
grown, and specially suited for pots or boxes; 5000 Oval-
leaved Privet, bushy plants, 3 to 5 feet; 5000 well-grown
Dwarf Roses of the best sorts, 1000 Irish Ivies in pots, 1000
Hardy Climbers in pots, 40,000 strong Seakale and Asparagus
for forcing, 5000 Christmas Roses, 6000 Border and other Car-
nations in pots, 6000 Standard Ornamental Trees, thousands of
Lilies, Spiræas, Gladioli, Dahlias, and other Miscellaneous
Stock.

May be viewed any day prior to the Sale. Catalogues had
on the Premises; and of the Auctioneer, 67 and 68, Cheapside,
E.C., and Leytonstone, E.

N.B.—The Auctioneers desire to call particular attention to
this Sale, as it is not often so extensive and varied a stock is
offered in one day.

Tuesday, November 6.—(Sales by Sample.)

MESSRS. PROTHEROE AND MORRIS
desire to announce that their NEXT SALE will take
place as above, for which they will be glad to receive notice
of entries as soon as possible.

Groombridge, Tunbridge Wells.

Great UNRESERVED SALE of Valuable NURSERY STOCK;
all recently transplanted, and now in splendid condition.

MESSRS. PROTHEROE AND MORRIS
are instructed to SELL by AUCTION, on the Premises,
Hollamby's Nurseries, Groombridge, Tunbridge Wells, close
to the Groombridge Station, on TUESDAY and WEDNESDAY,
November 6 and 7, at 12 o'clock precisely each day, by order
of Mr. E. Hollamby, enormous quantities of CONIFERS, all
carefully prepared for removal; 2000 ROSES, 50,000 LARCH
FIR, 2 feet to 4 feet; 10,000 SCOTCH and SPRUCE FIRS,
6000 Portugal and other LAURELS, 10,000 PRIVET, 5000
CUPRESSUS, 2000 THUJA LOBBII, 15,000 named and other
RHODODENDRONS, 40,000 COTONEASTER SIMONSII, hardy
CLIMBERS, &c.

May be viewed any day prior to the Sale. Catalogues had
on the Premises, and of the Auctioneers, 67 and 68, Cheapside,
E.C., and Leytonstone.

Caterham.

TWO DAYS' SALE of NURSERY STOCK, by order of the
Executors the late Mr. G. J. Woollett.

MESSRS. PROTHEROE AND MORRIS are
instructed to SELL by AUCTION, on the Premises, The
Nurseries, Caterham, Surrey, a short distance from the Cater-
ham Railway Station, on THURSDAY and FRIDAY, November
8 and 9, at 12 o'clock precisely each day, a large quantity of
well-grown NURSERY STOCK, in capital condition for re-
moval, including an extensive assortment of Conifers and
Evergreen Shrubs; 2000 Laurels of sorts, Privet, Spruce, Firs;
1000 Standard, Pyramid, and Trained Fruit Trees; large
Forest Trees for immediate planting; Roses, &c.

May be viewed. Catalogues had on the Premises, and of
the Auctioneers, 67 and 68, Cheapside, London, E.C.; and
Leytonstone.

Extensive Importations of Orchids.

MESSRS. PROTHEROE AND MORRIS will
SELL by AUCTION, at their Central Sale Rooms, 67 and
68, Cheapside, London, E.C., AT AN EARLY DATE, extensive
importations of ORCHIDS, received direct, being the contents of
about 50 cases; amongst them will be found a large consignment
of Cattleya Percivaliana, also C. lobata superba, C.
labiata Warnerii, and Oncidium Papilio, received from Mr. F.
Man.

The plants are in splendid condition. Full particulars will
appear next week.

Tuesday, November 13.

The First Portion of the well-known Collection of ESTAB-
LISHED ORCHIDS, formed by E. Wischhausen, Esq., of
Wood Green, who is relinquishing their cultivation.

MESSRS. PROTHEROE AND MORRIS are
instructed to SELL by AUCTION, at their Central Sale
Rooms, 67 and 68, Cheapside, London, E.C., on TUESDAY,
November 13, at half-past 12 o'clock precisely, the First
Portion of this well-known Collection, including the following—

Cattleya Skinneri alba	Lælia anceps alba
" Mandellii, six growths	" Hammea, eight growths
" Dominiana	" elegans alba
" Triane alba	" Wolstenholmei
" fausta delicata	" purpurata Lowiana, one-
" exoniensis, twenty-one	" half of the only known
growth, believed to be	plant
the very finest variety	Cypripedium selligerum
in cultivation	" Schroderi
Celogyne cristata alba, ten	" Jarande
leads	" microchilum
Lælia anceps alba	" decanum superbuu
" Philbrickiana, 7 growths	" Sedeni

The plants are in excellent condition, and none will be sold
privately prior to the Sale.

Catalogues may be had on application to the Gardener, or of
the Auctioneers, 67 and 68, Cheapside, London, E.C.

Woking, Surrey.—Preliminary Notice.

Several acres of exceptionally well-grown NURSERY STOCK,
by order of Messrs. H. & C. Cobbett.

MESSRS. PROTHEROE AND MORRIS are
instructed by Messrs. H. & C. Cobbett to SELL by
AUCTION, on the Premises, The Horsell Nurseries, Woking,
on TUESDAY, WEDNESDAY, and THURSDAY, November 13,
14, and 15, several acres of unusually well-grown NURSERY
STOCK, carefully prepared for removal, and adapted for
immediate effect.

May be viewed. Catalogues had on the Premises, and of the
Auctioneers, 67 and 68, Cheapside, London, E.C., and
Leytonstone.

Finchley Road, N.W.—Preliminary Notice.

Important to Florists and others engaged in the Nursery and
Furnishing Trade. The compact and old-established
NURSERY and FLORIST'S BUSINESS for SALE, by order
of Mr. W. A. Clingo, who is leaving the neighbourhood.

MESSRS. PROTHEROE AND MORRIS are
instructed to SELL by AUCTION, on the Premises,
EARLY IN NOVEMBER NEXT, as a going concern, the com-
pact Leasehold Property, known as the WAVERLEY NUR-
SERY, situated in the Finchley Road, London, N.W., a few
minutes' walk from Marlborough Road Station.

Further particulars will appear next week.
Auctioneers' Offices, 67 and 68, Cheapside, London, E.C.

Barnet.—Preliminary.

VALUABLE FREEHOLD NURSERY and BUILDING LAND.

MESSRS. PROTHEROE AND MORRIS are
instructed to SELL by AUCTION, in NOVEMBER
NEXT, the VALUABLE FREEHOLD LAND, in the occupa-
tion of Mr. Cornwall as Nursery Grounds, containing an area
of about 9 acres.

Also about 17 acres of NURSERY STOCK, 8 Greenhouse,
Greenhouse Plants, &c.
Fuller particulars will appear in future Advertisements.

Bulbs from Holland.

Sales every MONDAY, WEDNESDAY, and SATURDAY, in
Large and Small Lots, to suit all Buyers.

MR. J. C. STEVENS will SELL by
AUCTION, at his Great Rooms, 38, King Street,
Covent Garden, W.C., every MONDAY, WEDNESDAY,
and SATURDAY, at half-past 12 o'clock precisely each day, first-
class consignments of HYACINTHS, TULIPS, CROCUSES,
and other BULBS, arriving daily from well-known Farms in
Holland.

On view morning of Sale, and Catalogues had.

Tuesday Next.—(Sale No. 7781.)

SPECIAL SALE OF DUTCH BULBS.

MR. J. C. STEVENS will SELL by
AUCTION, at his Great Rooms, 38, King Street, Covent
Garden, W.C., on TUESDAY NEXT, October 30, at half-past
12 o'clock precisely, several hundred lots of First-class
BULBS, just received from Holland in fine condition, in-
cluding Hyacinths, Tulips, Crocuses, Narcissus, Snowdrops,
Anemones, &c.

On view morning of Sale, and Catalogues had.

Wednesday and Saturday Next.

First-class Standard and Dwarf ROSES from a well-known
English grower, including many of the best show varieties.

MR. J. C. STEVENS will include the above
in his SALE by AUCTION, at his Great Rooms, 38,
King Street, Covent Garden, on WEDNESDAY and SATUR-
DAY NEXT, October 31 and November 3.

On view mornings of Sale, and Catalogues had.

Thursday Next.—(Sale No. 7783.)

VALUABLE IMPORTED and ESTABLISHED ORCHIDS.
MR. J. C. STEVENS will SELL by AUCTION,
at his Great Rooms, 38, King Street, Covent Garden,
W.C., on THURSDAY NEXT, November 1, at half-past 12
o'clock precisely, IMPORTED ORCHIDS, consisting Odonto-
glossum crispum, Alexandræ, O. vexillarium, O. grande, O.
madrense, Cattleya aurea, O. gigas, Oncidium Kramerianum,
O. fuscatum, &c., by order of Messrs. Shuttleworth, Carder
& Co. Also a fine lot of ESTABLISHED ORCHIDS, in-
cluding many plants in Flower and Bud, and others which
have not yet flowered in this country.

On view morning of Sale, and Catalogues had.

Thursday Next.—(Sale No. 7783.)

8000 grand Bulbs of LILIUM AURATUM, just received from
Japan in the finest possible condition. Also 5000 splendid
Berlin LILY of the VALLEY crowns for Forcing.

MR. J. C. STEVENS will include the above
in his SALE by AUCTION at his Great Rooms, 38,
King Street, Covent Garden, W.C., on THURSDAY NEXT
November 1.

On view morning Sale, and Catalogues had.

Special Sale of Orchids in Flower and Bud.
MR. J. C. STEVENS begs to announce that his next **SPECIAL SALE OF ORCHIDS IN FLOWER AND BUD** will take place at his Great Rooms, 38, King Street, Covent Garden, W.C., on **THURSDAY, November 15**, at half-past 12 o'clock precisely, and he will be glad if Gentlemen desirous of entering Lots for this Sale will send Lists as soon as possible.

Hundelby Nursery, near Spilsby.
MR. H. MACKINDER is instructed by the Trustees of the late Mr. J. W. Cole, to **SELL BY AUCTION**, on **THURSDAY, November 1, 1888**, at 11 o'clock, the whole of the **NURSERY STOCK**, consisting of Trees, Shrubs, &c.; also the **GREENHOUSES AND FRAMES**, with **BOILER AND HOT-WATER PIPING, &c.**—Full detailed Catalogues to be had on application to the Auctioneer, free of cost. **THE NURSERY TO BE LET.** Apply to the Trustees of the late Mr. J. W. COLE, or at the Holly Nursery, Spilsby. October 16, 1888.

SALE BY AUCTION ON NOVEMBER 7, at 1. St. German's Villas, Exeter. PRIVATE COLLECTION of specimen Camellias, Palms, Ferns, Auriculas, and other plants.

WANTED TO PURCHASE or RENT, within 10 or 12 miles of Covent Garden, a **NURSERY** of about 4 or 5 Acres with Glass, suitable for Plant and Cut Flower Growing for Market.
 Address **LOMARIA, Gardeners' Chronicle Office, 41, Wellington Street, Strand, W.C.**

To Grape Growers.
MESSRS. PROTHEROE AND MORRIS are instructed to **SELL BY PRIVATE CONTRACT** a compact **GRAPE GROWING ESTABLISHMENT**, which is for Sale on very advantageous terms. Arrangements can be made to bring it within the means of persons with a moderate amount of capital.
 For particulars, apply to **MESSRS. PROTHEROE & MORRIS**, 67 and 68, Cheapside, London, E.C.

FOR DISPOSAL, a good SEED, FLOWER, and FRUIT BUSINESS. Trade mostly cash. Satisfactory reasons and books shown.
SEEDSMAN, 41, Wellington Street, Strand, W.C.

To Market Gardeners, Florists, Nurserymen, &c.
HAMPTON-ON-THAMES.
FOR SALE, choice FREEHOLD LAND, in Acre Plots, suitable for above. Rich Garden Soil with gravel and sand sub-soil. The land is considered by the Trade the finest near London for Grapes and all other Market Products. Apply, **SECRETARY, Estates Investment and Villa Farm Company, Estate Office, Tangley Park, Hampton-on-Thames.**

South of England.
LARGE GARDEN, 20 Acres, with Twenty Greenhouses and Vineries. £7000 has been spent on the property. Seven years' lease. Two Cottages inclusive. £150 a year.
ELDRIDGE, Portsmouth.

TO BE LET, a small but genuine SEED, FLOWER, and FRUIT BUSINESS. Proof of Trade given and inquiries answered. Apply, **S. J., Gardeners' Chronicle Office, 41, Wellington Street, Strand, W.C.**

ORCHIDS.

THE LIVERPOOL HORTICULTURAL CO.
(JOHN COWAN), Limited,

Expect to receive within the next few days Importations of the following and other Orchids:—
ODONTOGLOSSUM ALEXANDRÆ.
POLYXANTHUM.
ONCIDIUM MACRANTHUM.
CATLEYA CHOCOENSIS.
VANDA SANDERIANA, &c.

Circular with full particulars of these and other Importations, also copy of their new Illustrated and Descriptive CATALOGUE OF ORCHIDS, will be sent free on application.

THE VINEYARD AND NURSERIES,
GARSTON, near LIVERPOOL.

ENGLISH YEWS, 3, 4, 5, and 6 feet.
 BOX, Green, 3, 4, 5, and 6 feet.
 Variegated, 3, 4, 5, and 6 feet.
PINUS AUSTRIACA, 3, 4, 5, and 6 feet.
 All well furnished, and finely rooted. Many thousands.
ANTHONY WATERER, Knap Hill Nursery, Woking, Surrey.

STRAWBERRY PLANTS, in small pots.
 Splendid stuff of all best kinds, and true to name. Price List on application.
FRANCIS R. KINGHORN, Nurseryman, Richmond, Surrey.

Palms, Foliage Plants, Heaths, &c.
FRANCIS R. KINGHORN will be pleased to forward LIST of above with low prices. Leading decorative PALMS in all sizes, great quantities, and in finest health.
 Richmond, Surrey; and 191 and 192, Flower Market, Covent Garden, W.C.

MR. DODWELL'S GRAND CARNATIONS.
 —The finest grown. 5000 Unbloomed Seedlings, warranted of the highest parentage; unrivalled whether for bedding or forcing for spring flowering. 3s. 6d. per doz.; 21s. per 100. Special terms for quantities. Particulars on application.
 The Cottage, Stanley Road, Oxford.

EXTRA CHOICE BULBS.

Free to Destination.

CHEAP PRICES.

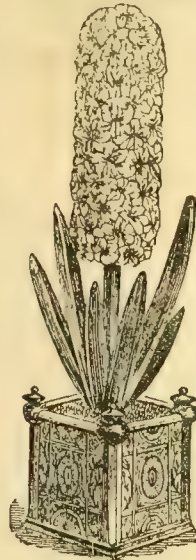
VAN MEERBEEK & CO.

GROWERS

Hyacinths, Tulips, Crocus, Lilium, Narcissus, Ranunculus, Anemones, Spiræas, Snowdrops, and all other Bulbs and Plants, recommend their

SPECIAL COMPLETE COLLECTIONS FOR AMATEURS,

put together with the greatest care.



FOR SPRING GARDENING.

(Own selected, well proportioned.)
 Collection B containing 3496 finest flower-roots. Price 5 Gns.
 " D " 2244 " " " 3 "
 " F " 1398 " " " 2 "
 " H " 1036 " " " 1 "

FOR INDOORS.

Collection A containing 1276 finest flower-roots. Price 5 Gns.
 " C " 885 " " " 3 "
 " E " 613 " " " 2 "
 " G " 301 " " " 1 "
 We also forward, at 12, HALF THE COLLECTIONS "G" or "H." NO PACKING CHARGES.

Payment against delivery of the parcel. Extensive Catalogue free on application. Write direct to

VAN MEERBEEK & CO.,

Nurserymen, Hillegom, near Haarlem, Holland;
 or to their London Agent—**MR. EDWIN T. PAYNE,**
 28, Great Tower Street, E.C.

PLANTING SEASON.

HARDILY-GROWN FOREST, FRUIT,

& ALL OTHER

TREES & PLANTS,

Evergreens, Roses, &c.

NURSERIES 400 ACRES.

Largest & Finest Stocks in Europe.

INSPECTION EARNESTLY INVITED.

PRICED CATALOGUES GRATIS & POST FREE.

ESTIMATES & ALL PARTICULARS ON APPLICATION.

DICKSONS

(LIMITED)

The Nurseries,

CHESTER.

Address for Letters & Telegrams—**Dicksons Chester.**



FRUIT TREES
 For Market and Private Growers.
ORNAMENTAL TREES, SHRUBS, ETC.

Descriptive CATALOGUES Post-free.

J. CHEAL & SONS
 Crawley, Sussex.

BIRKENHEAD and WIRRAL HORTICULTURAL ASSOCIATION.

The **SECOND ANNUAL SHOW OF CHRYSANTHEMUMS, FRUIT AND PLANTS** will be held in the Town Hall, Birkenhead, on **NOVEMBER 14 and 15, 1888.** Schedule on application to

JOHN TRELFORD, Secretary,
 71, Fountain Street, Tranmere, Birkenhead.

BRADFORD and DISTRICT CHRYSANTHEMUM SOCIETY'S

SECOND ANNUAL EXHIBITION will take place on **WEDNESDAY and THURSDAY, November 11 and 12**, when upwards of **ONE HUNDRED POUNDS** will be offered in prizes. Schedules might be obtained on application to **J. COLLIER, Sec., 10, Mannheim Road, Tolles Lane, Bradford.**

HUDDERSFIELD CHRYSANTHEMUM SOCIETY.

The **FIFTH EXHIBITION** will be held in the Town Hall, Huddersfield, on **FRIDAY and SATURDAY, November 16 and 17, 1888.** Entries Close on Friday, November 9. Schedules and Entry Forms may be obtained from

JOHN BELL, Sec., Marsh, Huddersfield.

THE GARDENERS' ORPHAN FUND.

DONATIONS and SUBSCRIPTIONS

WILL BE THANKFULLY RECEIVED BY

A. F. BARRON, Hon. Sec.,
 Royal Horticultural Society's Gardens,
 Chiswick, London, W.

HOW to MAKE the MOST of the LAND by the Profitable Cultivation of Fruit, &c. The **HORTICULTURAL and TECHNICAL COLLEGE, Lim., Swanley, Kent.** Winter Session commences Oct. 17.—Address, **MR. BUCKLAND.**

Camellias, Azaleas, Rhododendrons, Palms, Orchids, &c. Plants grown specially for English use.

C. VUYLSTEKE, NURSERYMAN,
 Lochristy, Ghent, Belgium.
 Wholesale CATALOGUE now ready, and may be had, free on application to
Messrs. R. SILBERRAD and SON, 25, Savage Gardens, Crutched Friars, London, E.C.

EVERGREEN HEDGES.

YEWS, English, 1½ to 2 feet, 30s. per 100; 2 to 2½ feet, 15s. per 100; 2½ to 3 feet, 65s. per 100.
HOLLIES, Green, 2 to 2½ feet, 40s. per 100; 2½ to 3 feet, 60s. per 100.

LAURELS, Common, 1½ to 2 feet, 12s. per 100; 2 to 3 feet, 15s. per 100; 2½ to 3½ feet, 20s. per 100.
THUJA LOBBELII, 2½ to 3 feet, 30s. to 40s. per 100.

We hold immense stocks of the above, all bushy and well rooted Plants.

Special offer for Covert Plants, &c., free on application.
JOHN PERKINS and SON, The Old Established Nursery and Seed Business, 52, Market Square, Northampton.
TELEGRAPHIC ADDRESS—"QUICK," NORTHAMPTON.

ROSES! ROSES!! ROSES!!!—The best and cheapest in the World. 40 choice Perpetuals for 21s. Purchaser's selection from 400 best varieties. CATALOGUES free on application. Ten acres of Roses, 100,000 grand plants to select from. Plant now.
JAMES WALTERS, Rose Grower, Exeter.

HURST and SON have good stocks of the following, and will quote at specially Reduced Prices—

ROMAN HYACINTHS.
LILIUM CANDIDUM.

HARRISII.

LILY OF THE VALLEY, clumps and crowns.

DAFFODILS, double and single.

NARCISSUS POETICUS.

" double white.

" OBVALLARIS.

SNOWDROPS, and other sorts of Bulbs for forcing and planting.

Please write for special quotations.

Seed Warehouse: 152, Houndsditch, London, E.

The New Raspberry,

LORD BEACONSFIELD.

(A Seedling).

The finest Raspberry and best cropper ever known. First-class Certificate, Royal Horticultural Society. Canes £2 per 100; 6s. per dozen. Trade supplied; Cash with Order.

A. FAULKNER, Inkpen, Hungerford.

INTENDING PLANTERS are invited to

Inspect our Stock of **ROSES, RHODODENDRONS, FRUIT TREES** of all descriptions, **ORNAMENTAL TREES and SHRUBS, FOREST TREES, &c.**, extending over 150 acres.

Descriptive CATALOGUE free on application.

H. LANE and SON, Nurseries, Berkhamsted, Herts.

TREES and SHRUBS suitable for Towns and Smoky Districts. CATALOGUE free on application.—

RICHARD SMITH and CO., Nurserymen and Seed Merchants, Worcester.

STRAWBERRY PLANTS, SIR J. PAXTON.

—5,500 well-rooted Runners, put on rail at 4s. 6d. per 1000, in quantities of not less than 2000.

W. DALE, Fruit Grower, Knockholt, Kent.



TREES, FLOWERS, AND SEEDS

PAUL'S NURSERIES, WALTHAM CROSS,
For the Best ROSES.

PAUL'S NURSERIES, WALTHAM CROSS,
For the Best SEEDS, BULBS, &c.

PAUL'S NURSERIES, WALTHAM CROSS,
For the Best FRUIT TREES and GRAPE VINES.

PAUL'S NURSERIES, WALTHAM CROSS,
For the Best EVERGREENS, Park and Roadside TREES.

PAUL'S NURSERIES, WALTHAM CROSS,
For the Best CAMELLIAS, AZALEAS, LAPAGERIAS, &c.

PAUL'S NURSERIES, WALTHAM CROSS,
close to the Waltham Cross Station, Great Eastern Railway
(half an hour from London).
INSPECTION INVITED.

Prices low as possible. Priced Catalogues free.
Goods Packed by experienced hands for all parts of the World.
Observe the Christian name.

WM. PAUL & SON,
Rose Growers by Appointment to Her
Majesty the Queen,
Tree, Plant, Bulb, and Seed Merchants.

VINES AND FIGS,
SUPERIOR DESCRIPTION.

Thoroughly Ripened without Bottom-heat.

PARTICULARS ON APPLICATION.

DICKSONS

(LIMITED),
Nurseries, **CHESTER.**

Address for Letters { *Dicksons, Chester.*
& Telegrams—

BULBS.

A FEW REASONS FOR GETTING THEM FROM
RICHARD SMITH & CO.:—

We have dealt in them for more than eighty years.

We have visited the best Bulb Farms and have selected the best roots and the best varieties.

The Bulbs we have supplied have practically always given satisfaction, and our prices are moderate.

Illustrated descriptive List of Dutch and Home-grown Bulbs free.

RICHARD SMITH & CO.,
SEED MERCHANTS and NURSEYMEN,
WORCESTER.

CRANSTON'S NURSERIES,
KING'S ACRE, near HEREFORD.

Specialties,

ROSES AND FRUIT TREES.

FIFTY ACRES UNDER CULTIVATION.

Crystal Palace Great Fruit Show and Conference.
First Prize awarded for the finest Collection (150 dishes). List of sorts, also descriptive Catalogues,
ON APPLICATION TO

JOHN CRANSTON & CO.

COLLECTIONS OF ROSES

to suit all climates and all sized gardens.

Carriage and package free anywhere in the British Isles.

Full particulars posted immediately on application.

EWING & CO., Sea View Nurseries, Havant, Hants.



B. S. WILLIAMS'

Improved Mushroom Spawn.

Per bushel of 14 cakes, 5s.

Per cake, 6d.; per cake, free by Parcel Post, 1s.

For Outdoor and Indoor Culture.

Victoria and Paradise

Nurseries,
Upper Holloway, London, N.

B.S. WILLIAMS

AUTUMN AND WINTER-FLOWERING PLANTS.

Early Orders are solicited for the following, which are now ready for delivery:—

AZALEA INDICA, in variety.

BOUVARDIAS, seedlings and named sorts.

CAMELLIAS, leading kinds.

CYCLAMEN PERSICUM and C. P. GIGANTEUM.

DEUTZIA CRENATA FLORE-PLENO.

GRACILIS.

EPACRIS, leading kinds.

ERICAS, leading kinds.

HYDRANGEA PANICULATA GRANDIFLORA.

LILACS, CHARLES X. and other leading sorts.

PRIMULA SINENSIS ALBA-PLENA.

double, leading kinds.

RHODODENDRONS, of sorts.

SOLANUMS, Williams' hybrid.

STAPHYLEA COLCHICA.

VIBURNUM OPULUS (Guelder Rose).

GRAPE VINES.

Orders are now being executed for Vines. The Canes both for Fruiting and Planting are this year remarkably fine.

For complete List and Prices, see

ILLUSTRATED BULB CATALOGUE,
which can be had Gratis and Post-free on application.

VICTORIA AND PARADISE NURSERIES,
UPPER HOLLOWAY, LONDON, N.

ORCHIDS AND PALMS SPECIALTIES.

The Stock is of such magnitude that without seeing it it is not easy to form an adequate conception of its unprecedented extent.

FRUIT TREES, ROSES, AZALEAS, CAMELLIAS.

BOUVARDIAS, CYCLAMENS, ERICAS, EPACRIS,

SOLANUMS, TREE CARNATIONS, and other

WINTER and SPRING BLOOMING PLANTS,

of fine quality and immense numbers.

INSPECTION INVITED.

The Glass covers an area of upwards of 300,000 super. feet.

HUGH LOW & CO.,

CLAPTON NURSERY, LONDON, N.

FRUIT TREES,

SEVENTY-FOUR ACRES.

APPLES, PEARS, PLUMS, CHERRIES, PEACHES, NECTARINES, APRICOTS, and other FRUIT TREES, as Standards, Dwarfs, Pyramids, Bushes, Cordons, and Trained Trees in great variety.

VINES, excellent Canes, 3s. 6d., 5s., 7s. 6d., 10s. 6d.

Orchard House Trees in pots, PEACHES, APRICOTS, NECTARINES, &c., from 3s. FIGS from 3s. 6d.

DESCRIPTIVE LIST, containing a sketch of the various forms of Trees, with Directions for Cultivation, Soil, Drainage, Manure, Pruning, Lifting, Cropping, Treatment under Glass; also their Synonyms, Quality, Size, Form, Skin, Colour, Flesh, Flavour, Use, Growth, Duration, Season. Price, &c., free by post.

RICHARD SMITH & CO.,
WORCESTER.

E. P. DIXON & SONS

BEG TO OFFER

RASPBERRY FOR COMING SEASON.

2s. 6d.
per doz.,
15s.
per 100
for Planting Canes.

BAUMFORTH'S

4s. per dozen, 21s. per 100
for Fruiting Canes.

SEEDLING.

THE YORKSHIRE SEED ESTABLISHMENT,
HULL.



CUTBUSH'S MILL-

TRACK MUSHROOM SPAWN.

—Too well known to require description.

Price, 6s. per bushel (1s. extra per bushel for package), or 6d. per cake; free by parcel post, 1s.

None genuine unless in sealed packages and printed cultural directions enclosed, with our signature attached.

WM. CUTBUSH AND SON

(Limited), Nurserymen and Seed

Merchants, Highgate Nurseries, N.

LARGE PEACH TREES (Fan-trained).—A
few to dispose of. Call and see them; or write for
LIST to
W. H. DIVERS, The Gardens, Ketton Hall, Stamford.

30,000 CLEMATIS, in Pots, of all the
finest Double and Single Varieties (some
of the flowers of which become 10 inches across, and are of
every shade, from pure white to the darkest purple), for
climbing and bedding, from 12s. to 24s. per dozen, strong
plants; extra strong plants, repotted into 54-inch pots, 2s. 6d.
each; Beauty of Worcester, a magnificent purple, excellent for
bedding, recently sent out by us, reduced price 2s. 6d. each.
Descriptive LIST on application.—**RICHARD SMITH AND CO.,**
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LILIAM AURATUM.—Good, plump, sound
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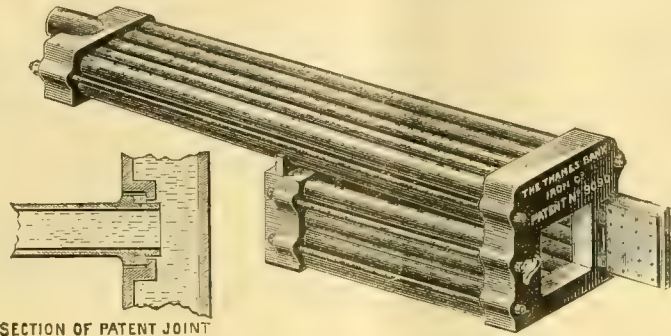
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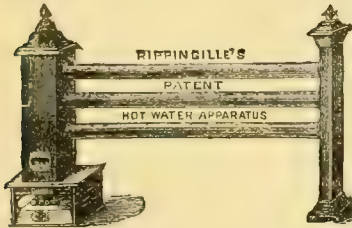
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MAJOR.

Although this plant is frequently offered, it is seldom to be obtained true to name, owing to its great value for cutting purposes. The flowers are pure white under glass, but have a slight rosy tinge in the open; it is the greatest favourite among market growers, producing flowers from December to January. It is a grand variety for potting, the foliage is so close and compact, and the flowers abundant.

RUBRA.

One of the most distinct and novel of this group. The flowers are large, produced about the end of January, and of a lovely colour. It is a robust grower, free blooming, and a decided acquisition for cutting.

RIVERSTONI.

A fine distinct variety, somewhat in the way of H. maxima, but with smaller foliage, yet a strong robust variety. The flowers are produced in pairs, pure white, and blooming in the open at Christmas, a little earlier than major and later than maximus, thus forming a nice succession, and will be found a fine addition to our list of these useful winter-blooming plants.

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25 Scilla siberica	50 Triteleia uniflora
25 Scilla campanulata	50 Snowdrops
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The "BEAUTY OF BATH" is fit for use at the end of July and early part of August. It immediately follows the Juneating, and is earlier than the Irish Peach, from which it is quite distinct. The fruit is of medium size, round and flattened, the ground colour a yellowish green, beautifully striped and spotted with crimson toward the sun; the flesh is firm and pale yellow, and it has a brisk, sub-acid flavour far superior to that of other Early Apples. It is a certain and free cropper. Our stock trees have not failed once during the last six years, and it will, on this account, be a valuable market variety.

It was awarded a First-class Certificate by the Royal Horticultural Society, August 9, 1887, and the following are some of the extracts from the Gardening Periodicals of that week:—

The *Gardeners' Chronicle*, August 13, 1887.—"A handsome seedling Apple, with the look of Cox's Orange Pippin, came from Messrs. George Cooling & Sons, Bath. It was named Beauty of Bath, and received the unwonted honour for an Apple—a First-class Certificate."

Journal of Horticulture, August 11, 1887.—"A First-class Certificate was awarded to Apple, Coolings' Beauty of Bath, a pretty Apple of medium size, 2½ in. across, 1½ in. deep, eye closed in a deep basin, stalk short, thick, in a deep depression, colour bright red with numerous whitish dots. Flesh firm, yellowish, of a brisk sub-acid flavour, rather suggestive of the Devonshire Quarrenden."

The *Gardeners' Magazine*, August 13, 1887.—Apple, Coolings' Beauty of Bath.—"An early dessert variety, remarkable alike for its handsome appearance and high quality. The fruits are of medium size, roundish, slightly oblate, and of a rich reddish-crimson colour on the sunny side, dappled with green; flesh yellow, firm, brisk, and richly flavoured."

In an Article on Early Dessert Apples, in "The Garden," of September 3, 1887, Mr. W. COLEMAN writes as follows:—

Apple, Beauty of Bath.—"It was not until last year that its great merits were made known to the general public. The fruits, of medium size, are round and flattened, not unlike those of the Irish Peach, from which it is quite distinct; ground colour yellow, richly striped and suffused with crimson when fully ripe. Having many times had the pleasure of awarding 1st prizes to this delicious variety, I can strongly recommend it to all lovers of first-class Early Dessert Apples. The stock is in the hands of Messrs. Cooling & Sons, Bath."

Mr. S. FORD, Leonardslea, Horsham, in "The Garden," of August 18, 1888, writes:—

"Beauty of Bath, sent out by Messrs. Cooling & Sons, will prove one of our best Early Dessert Apples when better known; it is extremely handsome, has a brisk and agreeable flavour, and should receive early notice by all."

PRICES FOR AUTUMN DELIVERY:—

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TO THE
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THE FLOWER GARDEN,
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THE
Gardeners' Chronicle.

SATURDAY, OCTOBER 27, 1888.

ROYAL HORTICULTURAL
SOCIETY.

CHISWICK FRUIT EXHIBITION AND
CONFERENCE.

(Continued from page 454.)

FRUIT PRODUCTION AND DISTRIBUTION
FROM A PROVINCIAL POINT
OF VIEW.

By Mr. E. J. BAILLIE.

I FEEL some explanation is needful for the introduction of a paper which does not profess to be technical before such an audience, and upon such an occasion; but I have long held the belief that, whilst we pay strict attention to the practical points, or strictly technical details which rightly claim the closer attention of the specialist, we ought to give some prominence to particulars which, we may say, constitute the fringe of a subject.

Whilst these are, perhaps, of a too general character to possess much charm for the person intent upon some particular detail, they serve to put us in touch with the public, and thus are helpful in removing popular prejudices, for there is a sense of separation somehow between those to whom we look for fruit consumption and those to whom we look for fruit production.

I knew, too, that there would be gentlemen of wide practical experience whose names are in the front rank of the honourable record of present-day horticulture, taking active part in these proceedings, and I thought that they would treat of particular phases of the subjects irresistibly suggested by a "National Fruit Conference."

In this I was perfectly right. Whether I was right in my choice of a subject, for the reasons already stated, remains to be seen, but I venture to think, from what I know of the good nature of those connected with garden pursuits, I can claim your indulgence if I fail

to gain your approval; and if any remarks of mine are such as to provoke hostility of thought, you must please put them down to provincial prejudice, or, may I say, to that simplicity which is one of the most prominent attributes of raw rusticity.

I appreciate the difficulty of saying anything new on the question, but I shield myself behind the fact that the reiteration of a truth is not a needless undertaking until precept is put into practice. So long as we pay our millions of money into other hands for produce which could come from ourselves we are quite safe in assuming that there is yet reason for action.

Coming up from pastoral pursuits to this great centre of crowding, clamouring life, how can one express the feelings that somehow naturally force themselves to the front? They may be said to be somewhat thus: Here you have in your great crowded centre somewhere approaching 5,000,000 of souls. This area, with its vast population, has practically grown nothing but bricks and mortar save the trees and flowers in its beautiful pleasure parks and its promenades; and if this great centre were dependent upon its own resources for market produce for its daily needs it would very quickly have to answer its children's cry for bread by giving them stones.

This great multitude must take some feeding. The open country of the shires gives garden ground enough for all. The earnings of the provinces find their way largely into the pockets of the land-owners, and they, in the natural order of present day methods, spend a large portion of their time and the greater part of their wealth in London. There is a kind of feeling that, seeing so much of the wealth of the country comes here, more might be done for us and less for the foreign coquettes who court your favour and gain your sympathy and support for such things as we can grow quite satisfactorily at home.

I do not at all fear the bogey of foreign competition. This is, I remind myself, a National Conference, but the subject is really universal. The idea involved in fruit production and distribution is too large for a nation. We cannot, for instance, grow the Orange. We should not like to dispense with it, therefore we invite the foreigner to send it to us; but we can produce Pippins; then why should you raise your eyes above the beautiful fertile plains, say, of Kent and Sussex, and with the telescope of a false economy find beyond the seas, in the broad acres of America, Canada, Australia, and elsewhere, the admitted beauty of fruitful plains, but also an added imaginary beauty, really nothing beyond what you could have seen without the glasses within the confining hedgerows of our British orchards?

We must, however, get somewhat nearer the chief points to be considered. We must drop figure, and get to facts. We think we may safely start with an aphorism. Cultivation of the land is the basis of all economy. Mother Earth, after all, nurtures the whole family of the human race. "The profit of the earth is for all; the king himself is served by the field." The political economist and the social scientist can touch no profounder problem than that of production, and we cannot escape the consideration of the threefold aspect of the laws of life which all rightly civilised people recognise:—

1. The population must be properly employed.
2. The people must be clothed and fed.
3. As a necessary condition the land must be cultivated and cropped.

Now, we have already reminded ourselves that we have to take ourselves outside the limit-line of streets and alleys, and get into the open country, where we find agriculture and horticulture side by side, sometimes overlapping each other, but always mainly concerned with these four phases of occupation:—

1. Cattle production, under which I would include the rearing and breeding of all animals for slaughter or other purposes,

2. Wheat production, under which head I would include all arable farming.

3. Dairy farming, under which I would include all milk, cheese, and dairy products.

4. Fruit farming, including the production of vegetables and other market produce of this character.

The consideration of the question of supply immediately brings before us the question of demand. We ask ourselves—What is demand? Why is it needful to produce? An elementary question truly, but one which has been handled peculiarly by the jugglers of political and other economists. Briefly, produce is needed for the maintenance of political life. It was easy for the French wit to say, "Give me the luxuries of life, let who will take its necessities;" but necessities are—necessities! We then ask ourselves upon what can good health and happy life be best maintained.

FOOD REQUISITES.

Well, I fear we should here quickly get into conflict of opinion. Doctors differ. I am justified, however, upon the grounds of science and of personal experience in asserting that men can live, and live healthfully and happily, on cereals and fruit, so that a wheat farm and a fruit farm would meet all national needs. I know I strike a chord which may not be one entirely of harmony in a meeting of this character, when I say that man can derive all needful sustenance from the cereals and fruit, that is to say, humanity has in fruits—for cereals are fruits—all that it needs. Mark, please, I do not say it has therein all that it craves, but all that it needs. Now, if in any other machine than that of man (if you permit him to be so considered for a moment), heat, essential for its going, could be got from deal logs, and it was being fed by the engineer with mahogany, French polished, and refined oils, we should consider it strange. Of course he might do it if he liked; but we should wonder why. Man, so far as his means permit, may, too, feed on what he likes, but the economist must first consider essentials, not preferences or prejudices. But I find I must push forward, for I dare not pursue fancy too far in a paper of twenty minutes length.

THE LABOUR QUESTION.

After the determination of what is essential for the maintenance of life we must consider the labour question. Which of the four systems under which we have divided the question of cultivation employs the largest amount of labour, and in which are our labourers the most happily and healthily engaged? Unhesitatingly, with firmest decision, we answer, in fruit production. Quite lately I, by chance, became the travelling companion of one of the largest agriculturists in our county, whose farm lands had been laid down to grass. He had given up corn for cattle, and he told me that as a result fifteen cottages were at that moment standing empty so far as farm labourers are concerned. He had no further use for them, and they had gone—where? He did not know, but in all probability to swell the already congested population of the towns. How are we to get our open-faced, honest-hearted country population back to the green lanes and the gardens?

One of the best methods is by the development of the industry of fruit production. But is our climate such as to encourage safely the cultivation of hardy fruits? Let us not commit the often rash errors of a too eager enthusiasm. I do not know which most to pity or blame—the blind optimist who to every question suggesting the possibility of big profits, Arcadian delights, and a contented population always basking in the sunshine of ease and unconcern, replies, "I answer enthusiastically—Yes;" or the poor pessimist who says our Apples are only Crabs; that there is a worm at every core; that the glory has departed, and we are all tumbling into the Slough of Despond.

But there is a *via media*. It is possible to make the crooked straight, and the rough places plain, if we only set ourselves heartily to find the more excellent way.

Hardy fruits can be grown, and well grown, in this much despised climate of ours; but, like every thing else, it must be done properly. No more subtle sweetness, crispness, and altogether right flavour can lurk beneath the skin of Apple or Pear than can be found in the flesh of a British-grown Cox's Orange, or Ribston Pippin, or some of our best Pears; and no sprightly sauciness of brisk acidity can be found in the often insipid flavour of many of the foreign sub-acid Apples to compare with that of a Northern grown Keswick or Lord Suffield.

CONSULT THE TASTE OF THE PEOPLE.

There are those about us, and apparently warmly interested in this movement, who go to extremes in both directions. In this problem of production let us remember we have all tastes to suit, all palates to please, and therefore a wide range for our catering. One cannot help being amused to read of somebody's Pippin that it is the Apple of the future for its sweetness and syrupy juiciness, to which sugar would be a superfluity if not an absolute detraction; and in another week's issue of the same journal to be told that the merit of somebody else's seedling, which is to be the Apple of the future, is found in and founded on the fact that its beautiful tartness of flavour is such as absolutely to defy the seductive influence of sugar or syrup, bringing it to the dull level of the popular palate which can only take its Strawberries when reduced to a kind of saccharine paste—which can only take Currants as preserves, or Cherries in brandy.

So long as opinions differ so widely we need not fear the unavoidable influence of climate in any of the home districts upon the qualities of our British-grown fruits.

Whilst admitting a certain amount of healthy variation in the quality of the fruits I would venture to say that the error of the past has been rather in the multiplication of kinds than in the other direction. Some people have prided themselves upon having as many varieties as they can count trees in their orchards, but I could never see the full force of the benefit of such possession. It is well to choose but few kinds letting them be such as are suitable to the district and such as commend themselves as market favourites.

For instance, in the larger Lancashire towns Apples of a brisk sharp flavour find much readier sale than the sweeter fruits for which there may probably be greater demand in the South. If you can sell at Cottonopolis Keswicks or Lord Suffields by the ton why not grow them by the acre rather than coddle with somebody's new seedling said to surpass the Newtown Pippin in its sugary flavour when the season is favourable enough for it to fruit? Meet the demand of the district and proceed cautiously; extend as rapidly as you like, but carefully.

If it is worth doing at all it is worth doing well. Do away with worthless incumbrances of the ground. A good fruit is as readily grown as a bad one. This is the *crux* in the provinces.

OUR ORCHARDS.

If time permitted me to draw you a picture of the typical farmer's orchard you would not wonder that fruit growing was a feeble industry in many places. Such so-called orchards are, many of them, excellent hunting-grounds for the entomologist or the cryptogamic botanist whose special attraction is amongst mosses and lichens. Most of the trees are favourable specimens of artistic antiquity. The only evidence of anything approaching a pruning process which I have ever witnessed amongst some of them was the wreckage of the storm or the broken boughs at Appletide which had snapped asunder under the weight of the ladder against them.

If the orchards are carelessly kept—or carefully unkept—it is an equally peculiar fact that when fruit is borne by the trees it seems to suggest no necessity for right handling. Mark Twain in one of his sketches enlarges, I think, upon his experience in days when he was assumed to have the editorial charge of an agricultural paper, and in reply to a correspondent, he told him he thought he had him-

self to blame for the condition of his Turnip crop, the defects of which he had just described. "You should wait," said Mark, "until they are nearly ripe, then get up the tree and shake them down. He found that was not the way Turnips were treated, but the editor had probably seen a country farmer gathering his fruit, for that is precisely the method he follows on such an occasion. All this and much more must be changed before British fruit-growing takes the important place to which it is entitled.

FRUIT AS FOOD.

The present position of the fruit question in the public mind seems to be that fruit is now used to grace the tables of the wealthy or to add a kind of fashionable finish to the dinner of the fairly well-to-do; but it is seldom regarded as food pure and simple, though such it really ought to be.

Let anyone having an interest in philanthropic work make enquiries amongst the poor of the large cities, and he will find that fruit is almost, if not entirely, absent from the list of dietary articles from which the food supply of those who live in the narrow streets and the crowded alleys is derived. I have gathered statistics in our own district, and was startled to find how the poor live even in a provincial town where a person placed at its centre might get between the hedgerows and into the fields well within half-an-hour. Ignorance and prejudice have helped to maintain this condition of things, for they have only the bare idea that fruit is palatable and have no idea that is also invigorating and healthful.

For the proper and complete development of the fruit movement in this country we must have all our forces to the front. There is a really steady demand, we are told, for the best fruits carefully gathered and well packed at most remunerative prices. That seems to meet the want in certain directions, but we must encourage those educational and moral movements, which have for their aim and object the inculcation of habits of thrift and health amongst the masses of the people.

There should be, and there must be, a very largely increased demand for the home product, and the home product will be then forthcoming; and this brings us closer to some of the features we have to face in the question of distribution.

DISTRIBUTION.

This opens up as many avenues of thought as the question of production—perhaps more, for in the question of production we deal largely with matters of conjecture, for we can never know the end of an unfollowed course, and if you advocate two methods or fifty you would find followers for each; but the question of distribution brings us at once face to face with problems of £ s. d., and with the conditions of market operations and regulations.

I do not intend to take up the time of this meeting by attempting to deal with one of the most damaging conditions which we meet with in the very outset, that, namely, of the railway rates. Nor do I attempt to touch upon that other forcible deterrent—the question of land tenure; both these will be dealt with in separate papers; but until some sweeping change is made in the present system of railway charges the British fruit grower will find his industry shackled and weighted to such an extent as to prevent his making a profit at all commensurate with that which he is helping to put into the pockets of the railway shareholders.

KNOWLEDGE NEEDED.

Next to the railway question we require the establishment of some responsible agency to take up, in combination, the conditions which cannot be successfully fought singlehanded, and this agency should not be merely commercially protective, but also educational. Amongst other matters it should collect and publish careful data as to districts, climatic influences, meteorological notes, and such other intelligence as would serve to guide. This body would have to be influential and potent, for the power of monopoly is, as matters now stand, almost invariably against the producer and the consumer, and in favour of some intermediate agent, and whose presence may be neces-

sary for the discharge of commercial enterprise, but who ought to be regarded more in the capacity of a carrier or an agent rather than a trader or merchant.

MARKETS.

Next we require the provision of centres of sale. Endless time is lost by the producer in his effort to find a market, and neglect at home is consequently unavoidable. It is essential that persons having produce to sell should be brought into contact with persons requiring to purchase, but we have at present no such facility. Cheshire has its cheese fairs, established by the order of a Council, and the staple product of the county therefore holds its own in spite of foreign competition. Birmingham has its Onion fair, but I do not know of a town in England that has its fruit fair.

PURCHASE BY NAME AND BY SAMPLE.

Then we ought to be able to purchase fruits by name as to variety. To the farmer mind not so many years ago everything green upon the face of the field was grass. To the mind of the average citizen or citizen's wife anything that is round, and that has been plucked from a tree in an orchard, is an Apple; it matters not whether it be a Crab or a Golden Pippin—it is an Apple; but we want to initiate the public into a knowledge that certain Apples carry with them certain qualities and certain flavours, and we want then to show that precisely what they want can be supplied. There are advertisements in connection with domestic commodities, which seem to suggest the grave importance of your being sure you get somebody's starch when you ask for it. The same caution should be applied in the pomological department, and when the cook finds out that a certain kind of Apple can be depended upon for a certain quality we should find the beginning, too, of a more definite order of things.

Another great impetus to the home product might be insured if at railway stations and other places where the public gather themselves in masses English fruit could be obtainable instead of the everlasting French Pears and American Apples. And I should like, if those ugly iron impediments called "automatic deliveries," or some such wonderful name are to be tolerated, that they should, in response to the penny and the push, give orchard Plums instead of sugar plums, and Apples and Pears in preference to chocolate or candy.

Another idea that has long possessed me is the idea of the selling of fruits from sample. According to present methods of distribution a producer gathers his fruit and carries it away to the markets, there to stand with a load of it until it is distributed. Those who have learned the art of modern marketing have found out that prices decline as the day wears on, for the grower does not desire to cart the piece of a load home again. On the other hand, there may be a system of "topping"—I may be excused if I explain (for of this my present audience is doubtless ignorant) that this implies a process, possibly accidental, by which the larger, better fruits in a basket gravitate towards the top! This is, of course, open to the suggestion of unfairness on the other side, but if the grower submitted samples of his fruit just in the way the farmer does who has grain or seeds to sell, an immediate relief would result.

A farmer does not think of carting the yield of his grain fields to the open markets, but asks the merchant to buy upon the sample placed before him in the market; and he can sell or hold as he then thinks best. He would then be in a less likely position for the imposition of injustice.

THE DUTY OF SOCIETIES AND OF THE PRESS.

Then I think in the interests of distribution our leading agricultural and horticultural societies—agricultural societies especially—should recognise the industry, and admit home fruit products into their schedules of subjects for competition. I am glad to observe that the Royal Agricultural Society of England has taken up the matter, and hope other

agricultural societies may now be induced to follow. It is likely that more good will arise from sources of this character than through minor efforts of less prominent bodies as the subject would then be considered along with the problems of land cultivation in their more important and varied aspects.

I must not forget to include the all-powerful Press. We have natural friends in the editors of horticultural publications, but I am glad to see the general Press of the country is now taking an interest in the question. Whilst many newspaper readers are evidently competent to take an intelligent view of the matter, there are some who seem to discern in the agitation something like the sectarian movement of a new faith for which they have quickly set themselves to invent the name of the "Faddist." Well, let it be so. If we are to get public attention called to the question, we may hope that the long delayed interest will be fairly and fully aroused, and whilst we rejoice in the peace and prosperity of a nation preferring pruning-hooks and ploughshares to swords and spears we shall yet the more rejoice when we gain the greater victory and proclaim the wider conquest of the sickle and the spade.

ENEMIES OF THE APPLE AND PEAR.

By MR. J. FRASER.

[We insert woodcuts of the "Enemies" alluded to by Mr. Fraser, and our past volumes abound with similar illustrations.]

Born animal and vegetable enemies are numerous, but the former probably outnumber the latter considerably. They range from the minute gall mites, about one-hundredth of an inch in length, up to birds, hares, rabbits, and cattle. Vegetable enemies are, however, none the less destructive sometimes, and certain kinds are very difficult or impossible to exterminate on account of their microscopic smallness, and more especially when hypodermal, that is, living beneath the epidermis of the host plant.

CANKER.

All diseases are attributable to some cause or other, although it is difficult to detect what that may be. Science may yet determine the true cause of canker, even if it fail to suggest a cure. That canker is something of the nature of a parasite, we have evidence in its spreading and attacking previously uninjured tissue (see fig. 59). Decay itself is brought about by the action of living organisms, on matter that is already dead, and effects the changes that crumble organic substances into dust. There is some truth in the statements that cold and undrained soil, severe pruning, extreme variations of temperature, late growth, and unripened wood, give rise to canker, just as bad treatment will undermine the constitution of a human being and prepare the way for disease. The real enemy does but take advantage of the weakened state of the victim. Some varieties of Apples and Pears are more prone to canker than others, and especially in some soils that may be cold, undrained, or are underlaid by a gravelly subsoil. Here, again, we may point to the natural constitution of the trees in question. Great improvements have been effected by drainage, by ameliorating or supporting fresh soil, all of which point to the fact that more or better nourishment is needed to enable the trees to make healthy growth in order to contend with an invisible but powerful foe. The baneful effects of canker may to a great extent be evaded by planting in good, well-drained soil, and by superior cultivation. It is not sufficient that the right materials are present in a soil, but they must also be in a soluble condition, so that the roots may be able to appropriate them. Good tilth promotes early vegetation, an early maturation of the wood, and by imparting a greater constitutional vigour to the tree enables it the better to ward off disease even when accidentally or otherwise injured. With this preliminary I proceed to classify the other enemies.

ANIMALS.

Numerous as these are they may be roughly divided into a few groups, such as insects, birds, and other animals. Kaltenbach, a German entomologist,

says that 183 species of insects prey upon the Apple, of which 115 are lepidoptera, thirty-two beetles, twenty aphides, and sixteen others belonging to different families. Of these I can only mention a few of the more important or destructive in the limited time at my disposal, with the view of directing attention to the fact that their successful destruction can only be effected by proceeding against them by intelligent and scientific methods. Haphazard raids are mostly useless, and attended by failure, while passive and indolent indifference is but too plainly evident in many a neglected old garden or orchard. Scientific research is frequently sneered at by the practical man, but until the habits and life histories of some particular foes are thoroughly investigated there can be no intelligent, sensible, or effectual attack made upon them.

The Apple grub (*Carpocapsa pomonana*)—(see fig. 63), is the larva of a small moth which lays its eggs in the calyx of the young and growing Apple in the month of June or July according to the season. The larva when hatched is white with a black head and neck and four rows of black spots. It gnaws its way down the fruit, keeping clear of the core till it reaches

latter. When plentiful it proves very destructive, causing swellings of the external tissues resembling cancerous wounds. The insects take up their abode in the crevices of the bark, from which they are difficult to eradicate. Soft soap, Gishurst compound, or, better still, petroleum, will effect a cure if rubbed into the crevices of the bark every time the insects make their appearance during the course of the season. Petroleum is the most effectual, and should be applied by means of a hard brush, such as is used by painters. The insect hibernates in the soil during winter if the trunk of the tree does not afford sufficient accommodation, and it may be destroyed by the application of quicklime a little beneath the surface. The Apple Blossom Weevil (*Anthonomus pomorum*—fig. 62), is a beetle, the female of which lays her eggs in the bloom-buds of both Apple and Pear trees, and the grub, when hatched, eats the stamens and pistils, rendering

a similar way to that of the American blight. The eggs are never laid, but hatched in the body of the mother when she dies. The latter is wingless, while the male is minute and winged. If the scale is numerous the tree becomes unhealthy and unfruitful. The scale is brown, and in shape like the half of a mussel shell. Scrub the branches with a hard brush just kept moist with petroleum, and persevere for two, three, or more seasons, as the scale is most difficult to eradicate when once it obtains a footing.

Gall mites (*Phytoptus Pyri*) are small acari about the one-hundredth long by one five-hundredth of an inch broad, that produce blisters on Pear leaves. The tissues of the leaves are torn asunder, forming large cavities, the cells often forming strings holding on by their ends. There is a small opening on the under surface for the egress or ingress of the mites. My specimens of blistered leaves are from Kelso, the first record to my knowledge of gall mites in Scotland. I received them in August last. The mites hibernate in the buds of the tree in

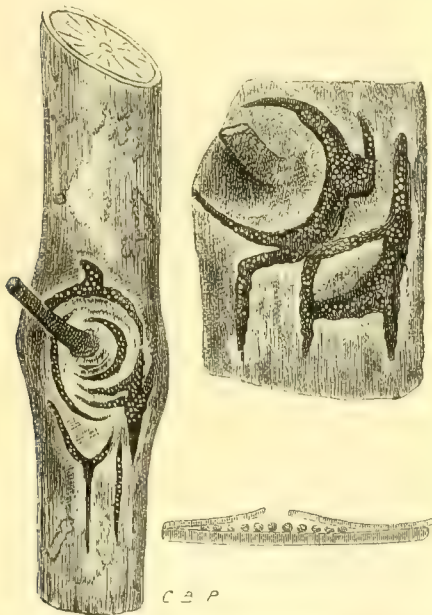


FIG. 59.—CANKER IN APPLES, SHOWING THE PRESENCE OF A FUNGUS, *NECTRIA DITISSIMA*.

the rind, which is pierced to permit the escape of its excreta. When nearly full grown it sometimes pierces the core and feeds upon the pips, generally causing a great number of the fruits to fall prematurely. Soon after this it leaves the fruit, and finding a secure retreat in crevices of the bark or other hiding-place commences to spin itself a cocoon, and after resting a time becomes transformed into the chrysalis state, which it retains till spring. Soon after completing their development, the moths pair, and egg-laying commences as formerly.

The grubs may be trapped in great numbers by tying bands of hay or straw round the trunks of the trees so as to afford the grubs a place of shelter in which to form their cocoon. Collect the bands in autumn and burn them. All fallen Apples should be assiduously collected and given to pigs or destroyed. The Codlin grub trap is a special structure, consisting of several boards of a convenient length fastened together in the middle, and the respective pieces kept apart by means of thin laths. The grubs readily take to this, and from 400 to 800 traps can be examined by a man per day and the grubs collected in a vessel.

The American blight is the work of *Schizoneura lanigera* (fig. 61), an insect closely allied to the aphid or greenfly of gardens, but differing in the absence of the "honey-dew" secreting glands possessed by the



FIG. 60.—THE APPLE GRUB AND MOTH.

them completely useless. Egg-laying lasts for two or three weeks, during which time great numbers of the weevil may be caught by shaking the tree, beneath which a white cloth has been spread, as they drop down on being alarmed. The weevil attains perfect development in a month's time from the laying of the egg, and feeds on the foliage during the rest of summer. It hibernates in the same way as the American blight, and similar methods for its destruction may be employed. Bands of tarred cloth may also be put round the trunk of the trees affected to intercept and catch the females on their way from the ground to the tree, as they seldom fly. Good husbandry also applies here; rubbish of all kinds should be rigidly cleared away, and crowding of trees prevented.

The Apple Mussel Scale (*Aspidiotus conchiformis*—fig. 63), is allied to the true scale, and attacks the bark of Apple and Pear trees alike, affecting them in

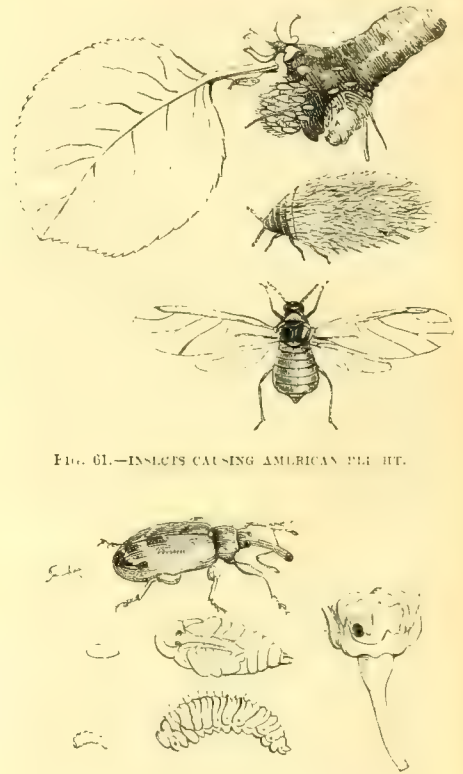


FIG. 61.—INSECTS CAUSING AMERICAN BLIGHT.

FIG. 62.—THE APPLE WEEVIL.

winter, and are most difficult of extermination. Collect all affected leaves in spring when the mites are still in them and burn them. When once badly affected the trees continue so from year to year, and unless they are valuable kinds should be grubbed up and burnt to prevent the pest from spreading. Plant healthy trees in their place. I had specimens from another source affected with gall mites, mussel scale, apparently canker as well.

Slug worms (fig. 65), are the grubs of certain sawflies differing in colour, and in the nature of the secretion covering their bodies; but the slugworm proper is the grub of *Eriocampa limacina* (or the *Selandria Cerasi* of Miss Ormerod). It derives its name from the black slime covering its hairy body till the last moult, when the resinous dark coat is thrown off. The grubs have large heads, and in the earlier stages when slimy bear considerable resemblance to a black slug; hence the derivation of the name slugworm. I collected my specimens on Pear trees at Holwood, Kent, the other week. Autumn is the time they make their appearance. They are very voracious, and eat away the upper surface of the leaves

which become brown and ultimately drop, causing the trees to become unhealthy. The fruit was affected with the fungus which causes cracking, were very much split, and entirely useless. The slugworms under notice attack most of the fruit trees belonging to the natural order Rosaceæ. They may be destroyed with Hellebore powder mixed with water, and applied through the rose of a watering-pot. As they hibernate in the first 3 or 4 inches of soil, that depth should be taken off and burnt. Both grubs and flies are extremely sluggish, and the latter may be shaken down on a white cloth and removed.

BIRDS.

The feathered enemies are more easy to deal with than any of the above; but, with the exception of the bullfinch and the sparrow, I would not advise the shooting of them. Even the latter has much to recommend him to mercy. If the birds are killed wholesale we destroy the balance of Nature, and get afflicted with a plague of insects far more difficult or impossible to exterminate. The gun should be employed during the ripening of the fruit to scare, not to kill. The warning cry has been heard from many an orchard in Kent during the past summer. Of the larger animals, rabbits and hares are the most destructive during severe weather. They soon destroy an orchard by barking the young trees. To prevent injury, protect the stems of the trees with branches of Blackthorn or Furze; but the

spot in the centre, surrounded by a white line, and that again by a black border. The Pear is attacked in the same way by a variety of *Cladosporium dendriticum*, generally known amongst fungologists under the name of *Fusicladium pyrinum*. No remedy is known, and means to prevent its spreading must be adopted by destroying badly affected trees and fruits. Here, again, good cultivation greatly



FIG. 63.—APPLE NETTLE SCALE.

tends to palliate the evil by encouraging a healthy, vigorous growth of the trees. Marie Louise and Louise Bonne of Jersey Pears are very subject to it, and should not be planted in places infested with the disease.

destructive on the Continent. Hand-picking the leaves as the spots make their appearance, and before the spores are shed, is the only remedy, and no Juniper bushes should be allowed to grow near them. On a large scale it is more profitable to uproot badly-affected specimens, and plant afresh.

Mistletoe in this country is the only chlorophyll bearing parasite that need be noticed. It is very injurious to orchards in Herefordshire from its great prevalence, and prevents the branches infested by it from thickening properly below the union of the parasite with them, ultimately causing the trees to become stunted and unproductive. Cut down the Mistletoe about Christmas, when a market will be found for it to defray the expenses of the operation.

Epiphytes, such as lichens and mosses, can be removed by scraping or scrubbing the bark of the trees, or they may be destroyed by sulphuric acid much diluted in water. The evil is but half remedied, however, and the lichens will soon grow again unless measures are taken to remove the cause by draining or otherwise ameliorating the land, as the case may require, and so induce a healthy, vigorous growth, thereby enabling the trees to thrive, increase in thickness, and throw off the old bark.

THURSDAY'S DISCUSSION.

MR. TONKS' PAPER. (SEE *note*, p. 440.)

Mr. COLEMAN asked if lime was used in a caustic state?

Mr. TONKS replied that it was generally used as gypsum, but all lime would answer the same purpose.

Mr. ROUFFEL said he had used lime freely in com-



FIG. 66.—MILDEW ON APPLES.

most sure and effective plan is to use a guard of wire netting. Tar, grease and oils, should not be employed, as they are injurious by stopping up the air passages in the bark.

VEGETABLE ENEMIES.

These are of two kinds, namely, parasites and epiphytes. The former are the most to be dreaded, since they attack and destroy the living tissues of the host plants by feeding on their substance. Parasites may again be divided into those of a fungoid nature and those that are green.

Mildew (fig. 66) affecting the Apple is a white mould belonging to the family Erysiphaceæ, and in this, the early stage, it is referred to the genus *Oidium*. It is one of the most easily destroyed of parasitic fungi, from the fact that it lives on the surface and does not penetrate its host. Sulphur alone, or various preparations containing sulphur, will completely destroy the fungus. Should a large number of trees in a garden or orchard become affected, the application of sulphur would be a tedious and costly operation; but if a few isolated trees only are attacked the remedy is more easily applicable.

Cracking is caused by *Cladosporium dendriticum* (fig. 67), a too widely prevalent fungus, that grows on the leaves, young shoots, and flowers of the Apple, often preventing the formation of fruit. In severe cases the latter becomes partially or completely covered with blotches, crippling and preventing it from attaining full size, and in all cases the fungus reduces the market value of the produce by disfiguring or causing it to crack. The disease commences as black spots, branching from the centre like a small tree, while on fruit the patches soon become irregularly rounded, with a depressed black



FIG. 64.—PEAR NETTLE SCALE.

Rust on the Pear is caused by *Restelia cancellata*, as well as some other parasitic fungi. The *Restelia* produces rugged swellings on the leaves, the blotches finally becoming red, and showing themselves on both surfaces of the leaves attacked. It is believed



FIG. 65.—SLUG WORM OR SAWFLY.

to be an early stage of *Gymnosporangium Sabinae*, which completes its life cycle on *Juniperus Sabina*. As in the rust of Wheat, there is an alternation of generations on different host plants, and described as heteroicisism. It is not common in England; is not, I believe, recorded from Scotland; but is very

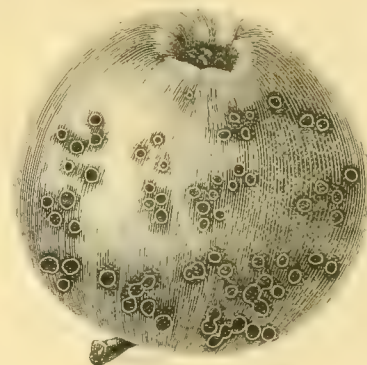


FIG. 67.—CLADOSPORIUM ON APPLE.

bination with soot, which he had found gave red Apples a more intense hue, and a darker colour to green Apples, generally improving and benefiting the trees. Did Mr. Tonks positively deny the possibility of canker being introduced to the healthy tree through a wound of any kind, or did he hold the opinion that a healthy tree, being strong, resisted the disease? From his own knowledge of surgery he was aware of the great analogy between the animal and the vegetable world. They all knew that a wound exposed to the atmosphere was liable to be affected by various germs floating about, and one great aim was to prevent the atmosphere having access to the wound. Wounds inflicted upon the bark of trees by any cause were likely to produce canker, but it made little progress in healthy trees, while trees unhealthy, through inferior soil or insufficient nourishment, succumbed to it.

Mr. TONKS considered that his paper replied to the matters put forward. He did not believe that canker was in any way due to germs of any sort or description; nor did he believe that any external injury caused canker. Of course disease might develop in the injured parts.

Mr. CLARK asked how it was canker attacked one sort and not another, when there was only a roadway between the trees?

Mr. TONKS replied, because food of one variety was quite different from the food required by another variety. Many years ago he had a Citron des Carnes in his garden, which, after growing fruit for a number of years, he began to notice signs of canker in it. One day he grafted on it a Pitmaston Duchesse. The Citron des Carnes became a miserable object, but the Pitmaston Duchesse thrived thoroughly; showing that roots which would not

maintain the Citron des Carmes in health, were perfectly able to support in the utmost luxuriance the Pitmaston Duchess.

Mr. CLARK said some forty-five years ago he broke up 18 acres of meadow land, trenched it, and planted among others 250 each of Cellini Pippins, Wellingtons, and Early Julienne. The Wellingtons grew well; the Cellini cankered after it had been bearing three or four years. He cut off the heads of them all and worked them with Mank's Codlin which began to grow, and canker disappeared even from the stems.

Mr. TONKS said that was simply bearing out what he had said.

Mr. GEO. BUNYARD said that the frosts of winter and spring had a great deal to do with canker.

Mr. JOSEPH CHEAL said he had been endeavouring to get a healthy stock of Ribston Pippin. He had managed it by selecting very healthy trees, and had thus almost eradicated disease.

Mr. SHIRLEY HIBBERD mentioned that a friend of his, who, although he planted too many varieties for a commercial purpose, had done his work well. The ground was what was known as cold bottom fully exposed to the spring frost. The trees cankered very early, and his friend, who was a scientific man, came to the conclusion that canker came owing to small particles of ice getting in the forks of the trees. His friend did not cure the disease. He sold the trees, planted Ash trees, and sold walking sticks.

Mr. JOHN FRASER said, if feeding would not cure diseases it would assist the trees to grow and to throw off disease.

Mr. TONKS, in reply, said that bacteria might be at the bottom of many diseases, but authorities on diseases were by no means agreed. Individual experiments on the subject were extremely unreliable. It was impossible for him to answer without consideration all that had been put forward, but if this remedy did not cure canker, it would do no harm, and it would be worth while to try it.

Mr. FRASER'S PAPER. (See p. 469.)

Mr. ROUPELL said Mr. Fraser did not mention the social caterpillar—one of the greatest plagues in his part of the country. An immense quantity of those insects got into his bush trees, and for three days he and others were engaged in picking them off. His neighbours who did not take that precaution, lost their foliage and fruit. These creatures could only be dealt with by hand-picking. He had a strong opinion that Potatoes were enemies to Apple trees, as they produced fungoid growths.

Mr. CLARK asked for information regarding the Gooseberry caterpillar, as he had seen whole gardens of Gooseberries cleared of leaves. The remedy was to get up early in the morning, when the dew was on the trees, to get a quantity of soot with a proportion of lime, and dash the mixture both under and over the leaves. He was satisfied that it would prevent the grub living.

A gentleman asked whether petroleum had any ill effects on the trees?

Mr. FRASER said petroleum did no harm, provided a moist brush only was used. Hellebore powder was also a good thing for caterpillars.

The CHAIRMAN proposed a vote of thanks to the readers of papers, and in so doing said the day had been a heavy one, but a vast amount of most valuable information had been placed before the Conference. He would like to say that an excellent remedy for American blight was hot brine, which should be rubbed well into trees affected.

The vote was adopted with enthusiasm, as was one to the Chairman, proposed by Dr. Hogg, and the proceedings were adjourned till the morning.

FRIDAY'S DISCUSSION.

THE proceedings of the Conference were resumed and concluded on Friday last.

Mr. H. J. VEITCH presided, and said that, important as had been the papers which had been read and discussed during the past two days, he thought they would agree with him that those to be read to-day were equally important, and the Council invited full discussion upon them. He, however, wished to emphasise the remarks of the President on the opening day, that as the Royal Horticultural Society was a society of peace and good will, he hoped those who spoke would carefully abstain from anything of a political nature.

Mr. BAILLIE (Chester) then read his paper (p. 467).

Mr. Baillie, in replying to a vote of thanks, added that the beautiful grounds at Chiswick seemed to suggest a far wider sphere of usefulness, inasmuch as they could be made the centre of national education

for the promotion and advancement of horticulture in whose interests they were now pleading. It seemed to him that there was a reserve at the command of the Council that could not be got in any other centre in England, and it would be a disgrace, if not a disaster, if the best use, nationally, were not made of it.

Mr. TALLERMAN then read his paper on the railway difficulty in relation to fruit and how to deal with it. At its conclusion he moved:—"That the Council of the Royal Horticultural Society be requested to form a committee to act on behalf of the fruit growers of the United Kingdom in connection with the approaching adjustment of railway rates about to be made by the Board of Trade, and that such committee enlist a full amount of Parliamentary support to carry out these views."

Mr. R. DEAN said he would second the motion for the sake of raising a discussion.

Mr. SHIRLEY HIBBERD observed that he was not in opposition to Mr. Tallerman, and he agreed with many present that the Conference would be a dead letter if they stopped at that point. Many useful and important matters had been discussed, but the subjects referred to that day—market tolls, railway rates, &c.—were at the very root of the whole question of the development of fruit culture in this country. They did not want party politics there; he did not know to which party he belonged, but he should like always to be found on the side of reason and justice! All they wanted to do at present was to continue their inquiries, which must be conducted with experience and judgment. He desired something more definite than the proposal contained in Mr. Tallerman's motion, and he would consequently move the following amendment:—

"A conspicuous result of the Conference this day concluded is to make it evident that the subject of commercial fruit culture is one of great and growing public interest, and that there exists a corresponding desire to remove or modify the various impediments that law, usage, and misconception of facts have created and sustained against it. The Royal Horticultural Society having special facilities for obtaining and diffusing information on all that relates to horticulture, this Conference respectfully requests the appointment by the Council of a Law and Parliamentary Committee for the consideration of the impediments above referred to."

Mr. JOHN CORNER seconded the amendment, which was formally supported by Mr. Geo. Bunyard.

Mr. SHIRLEY HIBBERD, on being asked by various speakers to do so, objected to alter his amendment in any way for any one in the world.

Mr. J. K. FOWLER did not at all object to Mr. Hibberd's amendment, but he thought they would have much greater weight with the railway interests than with Parliament if they concentrated their views exactly as Mr. Tallerman had stated. As a late railway director he (Mr. Fowler, certainly knew something of the subject, and he considered that more was expected of railway companies than they could actually perform. Railway companies had been of enormous benefit to the country in the development of agriculture and commerce, and the manufactures of the nation, but he did not deny that they were greatly standing in their own light not to advance more with the times, and to do away with the injustice which it was generally agreed existed throughout the country. He was one of the judges at the great Kilburn show, when a prize was given by the Lord Mayor of London for the best van for the transmission of meat, fruit, and other things from different parts of the country. The judges spent eight days in coming to a decision, and finally awarded, after a very severe trial, the prize to the Glamorganshire Company, greatly to the disgust of some Americans, who had sent vans which were expected to carry all before them. Up to the present time, however, he believed that not a single railway company had adopted the Glamorganshire Company's system. He merely mentioned that circumstance to show that, if the matter were properly placed before the companies, they would do all they could to meet the requirements of the public. He had the greatest pleasure in supporting the motion of Mr. Tallerman.

Mr. Hibberd's amendment was ultimately carried with four dissentients, and the following motion by Mr. Tallerman, seconded by Mr. P. Crawley, was carried:—"That, in the event of the committee being appointed, this Conference desires to urge upon it the early consideration of railway charges as affecting the growers of fruit and vegetables."

The CHAIRMAN proposed a vote of thanks to the readers of papers, which was carried.

Mr. BUNYARD proposed a vote of thanks to their excellent Hon. Secretary, Rev. W. Wilks, to whom and the Council the successful issue of that exhibition and Conference was due.

Mr. WRIGHT had the greatest possible pleasure in seconding the motion, which was carried with acclamation.

Rev. W. WILKS said it was a pleasant thing to be thanked for doing what one liked, and he assured them his services on behalf of horticulture and fruit growing were always at their disposal.

Mr. MALCOLM DUNN having spoken a few words of congratulation, moved the following resolution:—

"In view of the great public advantages that have accrued from the previous Conferences held in these gardens, and the marked success of the present one, the members of the Executive Committee of this Conference, Fellows of the Royal Horticultural Society, and other horticulturists here assembled, who are deeply interested in the Society's welfare, and in the important question of developing the progress of scientific and economical horticulture, including especially the fruit-growing capabilities of the country, respectfully submit for the earnest consideration of the Council of the Society the desirability of concentrating the Society's resources to the utmost practicable extent upon the maintenance of the Chiswick Garden, so as to enable it to fulfil its mission as the national exponent of practical and experimental horticulture."

Dr. MASTERS.—I have the greatest pleasure in seconding this resolution. If I may address you, sir, as one of the Council, and all the members of the Council present, I would especially say that you must not neglect the interests of Chiswick. You must throw all your energies into the development of this garden. This is no mere sentiment—although sentiment in this matter goes a long way. The gardeners of the kingdom have Chiswick in their hearts. One of the most essential requirements of a horticultural society is, moreover, an experimental garden. I am sorry to say that the public in general do not read—at least do not read with appreciation. But it is a very different thing when they come into this garden and see for themselves what has been done, and their minds take it in much more readily than from the printed page. I strongly uphold an experimental garden for educational purposes. It is also a great trial ground. Nurserymen and seedsmen have a prejudice in favour of their own seedlings, but when they send their seeds and plants to these grounds they are tried without favour. I have, therefore, great pleasure in seconding the motion.

Mr. WRIGHT thought the matter should have the careful consideration of the Council.

Mr. ROUPELL expressed the hope that now the London exhibitions were over those beautiful gardens would receive a larger share of the public favour.

Mr. SMEE said they had not done half what they should do, because their means were limited.

The resolution was carried with enthusiasm.

Mr. CHEAL moved a vote of thanks to Mr. Barron, the able Superintendent of the gardens.

Mr. DEAN seconded the motion, which was carried unanimously.

Mr. BARRON having suitably acknowledged the compliment,

Mr. TALLERMAN moved a vote of thanks to Mr. Veitch for presiding.

The CHAIRMAN briefly responded, and the proceedings terminated.

DISHES EXHIBITED.

The following enumeration shows the number of dishes of certain varieties that were exhibited, and affords some indication of the relative popularity of the varieties named. The first twenty only being given:—

APPLES.		PEARS.	
	Dishes.		Dishes.
1. Warner's King	75	1. Marie Louise	56
2. Blenheim Orange	70	2. Louise Bonne de Jersey	55
3. King of the Pippins	64	3. Beurré Ducl	50
4. Cox's Orange Pippin	61	4. Pitmaston Duchess	47
5. Dumelow's Seedling	65	5. Beurré d'Amanlis	41
6. New Hawthornden	61	6. Clairgout	34
7. Lord Suffield	56	7. Doyenné du Comice	29
8. Ribston Pippin	54	8. Glout Morceau	29
9. Stirling Castle	53	9. Duchesse d'Angoulême	29
10. Cox's Pomona	54	10. Marie Louise d'Écluse	27
11. Ekinville Seedling	52	11. Marechal de la Cour	25
12. Cellini	52	12. Beurré Bachelier	25
13. Emperor Alexander	46	13. Superfin	25
14. Worcester Pearmain	41	14. Bergamotte d'Espérance	24
15. Lane's Prince Albert	33	15. Carter's Beurré	24
16. Peasgood's Nonsuch	32	16. Josephine de Malines	23
17. Alfriston	32	17. Beurré Bosc	23
18. Lord Derby	30	18. Hardy	23
19. Beauty of Kent	30	19. Uvedale's St. Germain	22
20. Golden Noble	29	20. Durodeau	20

VARIETIES CERTIFICATED.

The following is a list of the varieties to which Certificates of Merit were awarded. The numbers in parentheses refer to the number of times the variety was Certificated; these numbers thus affording evidence of the degree of merit of the particular varieties, as exhibited on this occasion, from various localities.

APPLES.

Adam's Pearmain (2)	Lord Derby (2)
Alexander (2)	Lord Grosvenor (2)
Alfriston (1)	Lord Suffield (6)
Alma Pippin (1)	Mabbott's Pearmain (1)
Annie Elizabeth (2)	Mannington Pearmain (1)
Baumann's Red Reinette (2)	Melon Apple (1)
Beauty of Kent (2)	Mère de Ménage (1)
Bismarck (2)	Mother (2)
Blenheim Orange (3)	Mrs. Barron (2)
Bramley's Seedling (5)	New Hawthornden (2)
Celina (5)	New Northern Greening (2)
Cockle's Pippin (3)	Niton House (1)
Court Pendent-Plat (1)	Northern Dumping (1)
Cox's Orange Pippin (8)	" Greening (unproved)
Pamona (5)	(1)
Domino (2)	Okera or Akera (3)
Duchess of Oldenburg (2)	Peargood's Nonsuch (5)
Ecklinville Seedling (3)	Potts' Seedling (5)
Egremont Russet (2)	Reinette du Canada (1)
Fearn's Pippin (1)	Rabston Pippin (5)
Frogmore Proline (1)	Rosemary Russet (1)
Gascogne's Seedling (1)	Scarlet Nonpareil (1)
" Scarlet (1)	Scarlet Pearmain (1)
Golden Noble (4)	Schoolmaster (2)
" Spire (1)	Seaton House (1)
Gospatrie (2)	Small's Admirable (1)
Gravenstein (2)	Stirling Castle (6)
Grenadier (3)	Stone's (1)
Herefordshire Beauty (1)	Striped Beauty (1)
Horne's Pearmain (2)	The Queen (1)
Kerry Pippin (1)	The Sandringham (1)
King Harry (1)	Tibbitt's Incomparable (1)
King of Tomkin's County (1)	" Pearmain (2)
King of the Pippins (1)	Tower of Glamis (1)
Lady Henniker (3)	Tyler's Kernel (3)
Lady Sudeley (2)	Warner's King (10)
Landsberger Reinette (1)	Wellington (1)
Lane's Prince Albert (2)	Windsor Hawthornden (1)
Loddington House (2)	Worcester Pearmain (5)
	Yellow Ingestrie (1)

PEARS.

Autumn Bergamot (1)	General Tottleben (1)
Baronne de Mello (2)	Glou Morgan (3)
Bergamotte E-peren (2)	Gratioli de Jersey (1)
Beurré d'Amanlis (9)	Grosse Calibasse (1)
" d'Anjou (1)	Hessle (1)
" d'Arenberg (1)	Josephine de Malines (1)
" Bachelier (8)	King Edward (1)
" Bultet Père (2)	Knight's Monarch (2)
" Bose (5)	Louise Bonne de Jersey (13)
" Clairgeau (1)	Madame Thérèse (1)
" Diel (5)	Maréchal de la Cour (1)
" Hardy (5)	Marie Benoist (1)
" Rance (1)	" Louise (5)
" Sterckmanns (2)	" d'Uccle (1)
" Superfin (3)	Nouvelle Fulvie (3)
Catillac (3)	Passe Colmar (1)
Clapp's Favourite (1)	Pittman's Duchess (7)
Comte de Lamy (2)	President d'Ostmondville (1)
Doyenné d'Alençon (1)	Seckle (2)
" Boussoch (7)	Souvenir du Congrès (1)
" du Cornice (7)	Thompson's (1)
Durondeau (1)	Triomphe de Vienne (1)
Dr. Jules Guyot (1)	Uvedale's St. Germain (1)
Duchesse d'Angoulême (2)	Van Moir Léon Leclerc (1)
Ester Beurré (1)	Verulam (1)
Emile d'Heyst (1)	Vineuse (1)
Fondante d'Automne (1)	Williams' Fon Chretien (2)
Gansel's Bergamot (3)	Winter Nolis (1)

NEW OR NOTEWORTHY PLANTS.

CATTLEYA FLAVEOLA × (INTERMEDIA × GUTTATA ?), n. *hyb.*, *Angl.*

Mr. F. Tartz, Studley House, 289, Goldhawk Road, London, W., has kindly sent me the fine flower of this hybrid, which I am informed was raised by Messrs. Backhouse, Holgate House, York.

The flower gave me at first the impression of a yellow *Lælia elegans*. It is equal to a middle-sized flower of that species, and has ligulate, rather acuminate sepals and petals, broader in the middle, all of a pale clear yellow, coming very near to the lightest sulphur colour. The lip has much the shape of that of a *Cattleya guttata*. The side lacinia are semi-cordate at the base, oblong, prolonged into a long semi-lanceolate apex equal to the narrow claw of the mid-lacinia, which extends into a transversely oblong emarginate, crenulate rugose mid-lacinia. The whole mid-lacinia is purple as on the tops of the white side lacinia, both inside and outside. The column is very plump, white, purple at the top.

Cattleya picturata ×, *Rehb. f.*, may be compared to it from its origin, but it is widely distinct in its

smaller blunt flowers, and totally distinct lip. My typical specimen has thirteen flowers. It is also called "hybrida picta." *Cattleya flaveola* is exceedingly elegant to my taste. It is also near *Cattleya sextus*, but that has much broader blunt acute sepals and petals. *H. G. Rehb. f.*

CATASETUM FULIGINOSUM, *Lindl.*

Another species of *Catasetum* is revealing the little secret which some of the species, at least, seem so well able to keep. For a considerable time it has been noticed that a plant in the Kew collection was throwing up two quite different kinds of inflorescence, one on either side of the same pseudobulb, and this plant has in consequence been watched with an unusual amount of interest. The difference between the two gradually became more apparent; the one raceme was erect, with but few short and very stout buds near the apex, the other much longer, gracefully arching over, and bearing a large number of much more slender pointed buds for the greater part of its length. At length the flowers expanded, so totally diverse both in shape and colour, that nothing short of their being borne by the same plant would lead one to suppose they had anything to do with each other. Such, however, is the case—they are simply male and female flowers of the same species, and the plant forms an object of interest unsurpassed in the whole collection. A name was next wanted for the plant, and as far as the male flowers are concerned I was totally unable to find one, or to match them with any dried specimen or figure. The female flowers, on the contrary, seem perfectly identical with those of a plant which flowered with the Duke of Northumberland at Syon House in 1841, and which was named by Lindley *C. fuliginosum* (*Bot. Reg.*, xxvii., *Misc.*, p. 78). This Lindley guessed might be the female (male by a misprint) form of *C. atratum*, or some such species. "This, however," he remarks, "must remain for future inquiry." So exactly does the Kew plant agree with Lindley's dried specimen that I have no doubt of the identity of the two. These female flowers are green, with dull purple-brown spots and splashes, especially on the lip. The spreading segments are oblong and acute, and the very fleshy hood-shaped lip uppermost, the column very short and stout, stigma and ovary perfect, while the anther is reduced to a mere abortive rudiment. The male flowers are very similar to those of *C. callosum*, though quite distinct. The sepals are narrow and concave, a little incurving at their tips, the petals a little broader, flatter, and a little reflexed. Both are of a lurid purple-brown, the former faintly, the latter distinctly freckled with spots of a darker shade. The lip is pendulous, not uppermost, as in the other sex, of a dull green, densely covered with very dark or nearly blackish spots, oblong in shape, narrowing a little upwards, a little and irregularly toothed on the margin, slightly tridentate at the apex, with a shallow cavity behind, on either side of which are situated the two equal cirrhi; finally, the slender column has the anther alone perfectly developed. *C. deltoideum*, *Lindl.*, is very similar, but readily distinguished by the very broad-based lip. Such is this marvellous plant—a few more freaks, and *Catasetums* should become popular. It was received at Kew from Mr. F. Sander, of St. Albans, having been obtained by him from British Guiana. *R. A. Rolfe.*

ASPARAGUS PLUMOSUS.

This handsome evergreen species is, without doubt, one of the most ornamental plants which has been introduced of recent years, its slender branching foliage being very useful for cutting purposes, lasting a long time without flagging; it is also a capital subject for growing in pots for general decorative uses, and when it is intended to use it in this way it may be had either dwarf or tall as desired; if the latter, then insert a stake or other support in the pot of the required height, and top the shoots at this level, which will induce them to break lower down and form well-furnished specimens. If very dwarf plants are required then it is enough simply to pinch the young growths when a foot high, and bright Fern-like plants may be produced in this way. Another

useful method of growing the plant is to train a few shoots up a piece of twine, which, when required, can be taken down and used in a variety of ways; but especially is this form useful in house decorations, where they may be twined wreath-like round any object or along the edges of stands and baskets of plants; and in warm rooms, with a fair amount of light, it is surprising how long the *Asparagus* lasts in good condition. It is also a good rafter or pillar plant for the greenhouse, and in which place and position it is better to grow the plant for cutting from. The lighter and airier the position is the better, and a winter temperature, not falling below 45°, suits it well. A free, loamy compost is proper, and the richer it is the more luxuriant will be the growth.

There is more than one variety of the species, and that known as *A. plumosus nanus*, with its flat Fern-like branches, is the one usually illustrated in catalogues, and which by some is considered the best variety; but the variety originally introduced under the name of *consanguineus*, and generally met with as *tenuissimus*, is probably the most accommodating, and it is easily distinguished from the other by being of a more scandent habit; it has a less prickly stem, its branchlets are arranged in a more verticillate manner, and the whole plant is usually of a lighter green colour. This variety is easily increased by cuttings, whereas the other, for some reason which I do not know, is not easily increased in this way. All species of *Asparagus* are, however, easily multiplied by division of the rootstock and also from seeds, which they sometimes produce in quantity. In propagation by means of cuttings, rather stout pieces, from 4 to 6 inches long, should be chosen; and after making them in the ordinary way dibble them firmly into small pots filled with a sandy compost, and stand them in the propagating or other moist house where the temperature is kept at from 60° to 65°. Give a good watering to the cuttings when they are put in, and this, with an occasional moistening with the syringe, and a slight shade from bright sunshine, will be generally sufficient until rooted, when they should be potted on intact. When single plants are desired it is necessary to single out and pot on the strongest plants in the usual way, but this last method requires patience and time to make nice bits; moreover, more care is required in potting off single plants, the young roots being easily broken off. *F. Ross.*

FLORISTS' FLOWERS.

AMARYLLIS.

It is the resting-time with *Amaryllis*—or, at least, what is regarded as the resting period—but no bulbs are at any time in a quiescent state; leaf and bud are even now in course of development. The compost should be prepared for repotting them in January, and should consist of loam, two parts; peat, one part; decayed manure, one part; leaf-mould, one part; and some sharp sand added to make the soil porous. This should be laid up out-of-doors, and need not to have protection from rain unless there is some danger of its becoming too wet. Some small pieces of charcoal are mixed with it when potting the bulbs—not before. The leaves of the *Amaryllis* began to decay rather early this season on our plants, and were all removed from the plants by the middle of September. There is always a certain quantity of decayed and decaying material at the crown of the bulbs. We have removed all this, as it too often contains the insects, or the larvæ of insects, which injure the plants.

To make certain there is no insect in hiding, the crowns are also well dusted with tobacco-powder. The house is kept cool now, with just enough artificial heat to keep out the frost, and the atmosphere of the house should be as dry as it is possible to keep it. The crowns of the bulbs, especially those of large size, are easily injured by damp; in fact, they ought to be occasionally inspected to see if decay has appeared. The plants raised from seeds

sown in August last are yet of a dark green colour. A house with a temperature of 50° to 55° at night suits these very well, and just enough water should be afforded them to prevent the soil becoming too dry; in fact, if these young plants get a liberal supply of water during winter the bulbs get into such bad condition by the time they have to be repotted that many of them will not live, and the remainder will make no satisfactory progress.

THE CALCEOLARIA.

The winter season is a season of growth for this plant. The Calceolaria does best in mild winters, being rather impatient of artificial heat, and grow healthy and quickly when the leaves show tiny dew-drops round their margins in the early morning. What they do suffer from is the drying frost winds by day, and artificial heat by night, which sometimes becomes necessary to keep out the frost.

Great attention must be paid to attacks of aphid, which will often occur after weakening periods of hard weather and the consequent excessive firing. Repot the plants when they require it, but not before. In repotting any plants at this season it ought to be done carefully. The potting soil ought to be in a medium state of dryness, as also the roots, and after the plants are repotted they should not have any water for a week at least; by that time the roots will have penetrated the new compost, and be in a state to take up moisture. The plants should be placed near the glass roof now, as full light is necessary to promote a healthy development of the leaves and a short-jointed growth.

THE CINERARIA

requires very much the same treatment, but it is not so hardy as the Calceolaria, and a very few degrees of frost will kill it. It is sensitive to cold, drying winds, and the brittle leaves, downy on the under side, soon show the effects of having been exposed to such winds. I grow most of my plants now from offsets, which are obtained by breaking up the old plants after they are cut down and have again started to grow. These make quite as good plants as seedlings. The potting soil for these, and also for the Calceolarias, is of decayed turfy loam, a fourth part of decayed manure, and as much of leaf-mould and sand. In order to have good specimens, the point of the rising flower-stem should be pinched as soon as it is perceived, which will cause the plant to throw out branches from the crown, and as it continues to grow these should be tied out so as to form a spreading head of bloom. *J. Douglas.*

PINK LORD LYON.

This is the true name of the fine early flowering Pink, which Mr. Douglas so strongly commended a few weeks ago. It was named by the raiser, the late Mr. James Clarke, of Bury St. Edmunds, after the Derby winner, Lord Lyon, and not after the celebrated Admiral and Ambassador Lord Lyons. Mr. Douglas states, and rightly enough from his point of view, that pipings should be struck in a gentle bottom-heat; but as it is a Pink deserving to be widely known and grown, and therefore by very many who have no command of bottom-heat, the question arises, How can it be propagated without it? I do it in two ways—1st, by placing a few pipings in pots of light sandy soil as early in the season as I can get the cuttings, and plunging the pots up to the rims in a bed of cocoa-fibre under the shade of a wall. It is a slow process, but I get some of the pipings to root. It is necessary to do it early in the season, so as to give time for the pipings to root and grow into size. I can also extend my stock by dividing the plants at the end of the summer; it is of a free growing character, and stock can be increased in this way. I remember once calling upon Mr. Clark at Bury St. Edmunds, and he showed me his method of striking Pink cuttings. He simply made up a bed among his Gooseberry trees, put the pipings into it and covered them with an ordinary handglass, and experienced but few failures. Those who strike Pinks from pip-

ings will find a handglass very useful for the purpose. A kind of homely frame can be made by taking a wooden box 6 or 8 inches in depth, making a bed in it for pipings, and when filled laying some putty along on the rim of the box, and a piece of glass over it, pressing it down firmly on to it. Many can be struck in this way, but it is not so convenient as the ordinary handlight. I always flower a few plants of Lord Lyon in pots to have some early bloom. As soon as the beauty is over they are turned out of the pots and placed in the open ground to perfect their growth, placing some good light free soil about the roots, and giving occasional top-dressings. I can bear testimony to the statement of Mr. Douglas, that it is the best purple Pink in cultivation. *R. D.*

PLANT NOTES.

BROMELIADS.

SOME kinds of these may always be seen in flower at Kew, and many of them deserve to take rank with the very first of stove flowering plants; others are too large for ordinary houses, but where space can be afforded them they make a great show. Amongst the large kinds now flowering at Kew are two splendid species of Karatas. *K. Legrellae*, in the Victoria-house, has rigid green leaves, 3 feet long, 2 inches broad, channelled with stout hooked spines on the margins. The inflorescence is central, and is in the form of a thick cone, from which spring about twenty coloured leaves, which vary in length from 2 feet to 3 inches; they are similar in shape to the ordinary leaves, but their colour is a shining brilliant scarlet. *K. antiacantha* is in the Water Lily-house; it is similar to *K. Legrellae*, but larger, the leaves brownish at the base, and those on the flower-head are a deeper shade of scarlet. Travellers say that in the Brazilian forests these plants may be discerned by their flowers a great distance off, and it has been suggested that they must be intended to attract humming birds, &c., which assist in fertilisation and in the after dissemination of the seeds, for the coloured leaves remain till the seeds are ripe.

LECBMEEA FULGENS.

This and its variety discolor are very handsome when in flower, and they last about two months in perfection. The type has leaves about 1 foot long, channelled, smooth-edged; the inflorescence springs from the centre of the rosette formed by the leaves, and is 18 inches high, branching in the upper half, and bears from seventy to a hundred flowers, each of which is half an inch long, egg-shaped, and coloured a brilliant coral-red, tinted with purple at the tip. The variety has a similar inflorescence, but differs in the foliage, which is longer, deep olive-green, with grey bands, purplish on the under side. Certainly these two plants deserve to be grown in every collection of stove plant.

PUYA LANUGINOSA.

noted a short time ago, is still very handsome. The scape is now over 4 feet long.

BROCHINIA CORDYLINOIDES.

This is also in flower. It is a giant, but the flowers are of no horticultural value.

HILLIA LONGIFLORA.

This a stove shrub which does not appear to be known in English horticulture, although it was in cultivation here at the beginning of the century. It is Rubiaceous, a relation of *Luculia* and of *Bouvardia*, but very unlike either. The habit and appearance suggest *Eschynanthus*, the leaves being ovate acuminate, 4 inches long, shining green, in pairs on every part of the plant, which is 2 feet high and freely branched. The flowers are solitary on the end of the branches, and they are 5 inches long, the tube being narrow and stalk-like, and the limb six-spreading segments, each 2 inches long, narrow,

radiating, suggestive of a *Strophanthus*, or, if you like, an octopus. The whole flower is creamy-white, very fragrant, and it lasts about a fortnight. The plant is well worth growing in representative collections of stove plants. There are five species of *Hillia*, all of them natives of the tropics of the New World, where they are said to be epiphytic on large forest trees. *H. longiflora* is in flower in the stove at Kew. *W. Watson.*

ORCHID NOTES AND GLEANINGS.

ORCHIDS AT SUMMERFIELD HOUSE, LAWRIE PARK.

It is about two years since I last had the pleasure of looking over the collection of Orchids of Augustus Sillem, Esq., at Sydenham, Kent. When so long a period has elapsed a single glance will tell whether there has been improvement in the condition of the plants, or the reverse. In this instance it is our pleasant task to report a decided advance in this respect; and especially as regards the *Phalanopsis*, which reflect great credit on the gardener, and remind one of the grand plants at Mr. Partington's at Cheshunt. The plants are grown in baskets of Teak, suspended near the roof, and the growth made during the present year is beyond anything I have previously observed. For instance, a plant of *P. grandiflora* has made six large leaves during the present year; two of *P. amabilis* have made four large leaves each. As is usual, the largest leaves are on *P. Schilleriana*, and one of the largest, measured 11 by 5 inches, another fine leaf was 15 inches long; *P. Sanderiana* had leaves, or at least the largest leaf was 5½ by 12 inches—a wonderful growth. The plants are now showing spikes in proportion to the size of the leaves; *P. amabilis* had a good spike, with the first flowers (few) open; *P. violacea* has very pretty yellow and rosy-purple flowers; a plant of *P. Esmeralda* had a spike about 2 feet long, well furnished with flowers of a rich amethyst colour.

Cypripediums, though few, are well grown here, and especially *C. Spicerianum*, of which about half-a-dozen plants were producing in the aggregate fifty-four flowers; and amongst them one very handsome form. *C. Haynaldianum* had two vigorous spikes with four flowers on each; the flowers are of the *C. Lowii* form, and the plant, although its flowers are quite distinct in colour, may be only a variety of that species. The elegant little *C. caricinum* (Pearcei) is quite distinct in its sedge-like growth and creeping rhizomes. One plant of it had continued to produce its pale greenish-yellow flowers for the last three months.

Among the Cattleyas I observed a few good things—a *Lælia prestantis*, with remarkably large and brilliant flowers, 4½ inches across, the width of petals being 1½ inch; *Cattleya marginata* was also in flower, and is very pretty. It will be known to most orchidists that these dwarf Cattleyas and *Lælias* have now been brought under the specific name of *Lælia pumila*—a plant figured in the *Botanical Magazine*, plate 3656, under the name of *Cattleya pumila*.

Cymbidium giganteum was a very prominent plant, with two good spikes. It is, when well grown, a noble plant, and should be more common in collections. The flowers are of large size, and the sepals and petals yellowish-green with distinct, brownish-purple stripes; the lip is yellow, irregularly spotted, and blotched round the margin with crimson. The flowers last in good condition a long time.

Odontoglossum Insleyi splendens, true, was in flower. It is an uncommon plant. The flowers are large and very handsome, with a rich yellow lip edged with crimson blotches; the sepals and petals brown and gold.

Miltonia candida grandiflora, better known twenty years ago than it is now, is a handsome form of this species, and quite distinct; the lip is white, with a delicate rosy flush at the base; sepals and petals yellowish-white thickly blotched reddish-brown.

Several varieties of *Oncidium Forbesii*, *Cattleya Loddigesii alba*, *Vanda corulea*, *Barkerias*, and a few other plants, made a fairly good, seasonable display. *J. D.*

CATILEYA PUMILA.

This plant, noticed in the account of Mr. Sillem's Orchids, p. 474, was described by Sir W. Jackson Hooker as one of small size, "the minute rounded pseudobulbs and the narrow leaves, together with the obtuse, short, and almost fimbriated lip, will, I think, clearly distinguish it from those hitherto described." It had been sent to a Mr. John Alcard from Essequibo, and who flowered it just fifty years ago. There is much confusion amongst this section of Orchids, but Messrs. Veitch, in their *Manual of Orchidaceous Plants*, give *L. pumila* specific rank, and have expunged *Cattleya marginata*. This was introduced in 1842 by M. Pinel, a French merchant, who sent *L. pumila* under this name to M. Morel of Paris. Lindley also figured it under the name of *Cattleya pumila* in the *Botanical Register*, 1844, t. 5. He also says it is a native of Brazil, and could not be found at Essequibo. An allusion is made to its name of *C. marginata* as "expressing the appearance of a beautiful pale border to the blood-red blotch of the lip." C. Pinelli was also alluded to as having been received from Messrs. Rollissons. The flower had white sepals and rose-coloured straight, not curved, petals. *C. spectabilis* of *Paxton's Flower Garden* is also *L. pumila*. The correct arrangement is, therefore, as follows:—The type form, *L. pumila*, *L. p. var. Dayana*, *L. p. var. praestans*. *J. Douglas*.

CATILEYA BOWRINGIANA.

A fine batch of this useful autumn and mid-winter flowering Orchid is now in bloom at Messrs. F. Sander & Co.'s nursery at St. Albans. Some of the spikes bear fourteen flowers, each being a bouquet in itself. The importation has been prolific in fine varieties, their colours varying from pale lilac to bright rose. No pure white variety has yet appeared, but the importation is watched with interest for one to unfold its flowers.

CULTURAL MEMORANDA.

POLYGALA DALMAISIANA.

This is a strong growing and free flowering greenhouse plant, of drooping or trailing habit, producing Pea-like flowers of a bright Peach colour from the points of the shoots. From November onwards cuttings of the young growth may be taken and inserted round the edge of 3-inch pots filled with peaty soil and having a surfacing of silver-sand; put in heat, watered, and kept close until rooting takes place. They should then be potted off singly into the same sized pots, shifting them into larger pots as they require it. Plants in $\frac{1}{2}$ inch and 6 inch pots—their flowering shoots being allowed to hang over the edges of the stages in the greenhouse and conservatory—are effective and pleasing. The shoots should be pinched two or three times in the earlier stages of growth to cause them to branch freely.

PIMELEA HENDERSONI.

At the present time this pretty, hard-wooded greenhouse plant is not met with so frequently as it used to be some twenty years ago. This is to be wondered at, as plants of it in pots ranging in size from $\frac{1}{2}$ inches to 15 inches in diameter, are very effective and useful decorative subjects. The flowers, of a beautiful pink colour, are produced from the point of the shoots during the summer months. The plant is easily propagated from cuttings of the young growth, treated as recommended for *Polygala Dalmaisiana*.

CYCLAMENS.

Plants now developing flowers will be benefited by being watered two or three times a week with tepid liquid manure, and an occasional surface-dressing of Beeson's bone manure may be afforded. Seed may now be sown for flowering next autumn, using

seed-pans from 9 to 12 inches in diameter, and from 3 to 5 inches deep, drained efficiently, and filled with a mixture of three parts light sandy loam and one of leaf-soil. In sowing the seed cover it lightly with the soil, and place the pans on a shelf in a stove or warm pit, where the temperature is not likely to rise above 55°, or fall below 50°. When the seedlings are large enough to handle prick them out into pans or 6-inch pots, and into a like kind of soil; water with a fine-rose pot, and place again in heat near to the roof-glass. In due time pot them off singly into small 60's, making the soil moderately firm about the roots, and keep the plants in a growing state, the object being, not to check growth from the time they have started into leaf until they have done flowering, but shifting them into larger pots as they require it, and treating them in the way indicated. *H. W. Ward*.

PLANTS AND THEIR CULTURE.

THE CONSERVATORY.—The majority of the summer-blooming soft-wood plants being now over, and those with tender foliage being removed to warmer quarters, as also the dwarfier and more select of the hard-wooded plants to positions where their requirements can be suitably met, the opportunity is afforded of giving those that are left and the permanent subjects a thorough cleansing before re-arranging them for the winter. One of the most important points in the management of a conservatory is thorough cleanliness, for, however artistically it may be arranged, shortcomings in this matter are almost sure to obtrude themselves, and which detract very much from the full enjoyment of this part of a garden. Being more often than otherwise contiguous to the mansion, its use as an agreeable retreat or lounge is frequently considered of more importance than the conditions most favourable to plant growth; therefore at all times endeavour to have it sweet, clean, and tidy, with as much show as possible. Many climbing plants, as *Bougainvillea*, *Passiflora*, *Plumbago*, *Bignonia*, may have their shoots thinned out and be partially cut back, and regulated in such a manner as to admit the fullest light possible to the plants beneath. At the same time the glass, woodwork, floors, pots, should be made clean. Where the house admits of it, much may sometimes be done to give new interest by simply changing to fresh positions some of the permanent inmates, and by introducing groups of plants with either foliage or flowers of one colour in prominent positions. Many other ways and means will readily suggest themselves to the gardener.

Amaryllis.—As the display of bloom next year will depend in a great measure on the preparation of the bulbs the previous year, effort should be made to ripen and mature them thoroughly; and any bulbs which have made a late growth and have not yet finished growing had better be encouraged in their growth until the last set of leaves becomes full grown, when, as in the case of the main portion of the stock, they may be gradually ripened by placing them in a house having a warm, dry atmosphere. When the leaves begin to turn yellow less and less water may be afforded the plant at the root, but do not suddenly withhold water to such an extent that the leaves flag very much, although a little flagging would not matter. Those bulbs which have been already matured should be kept quite dry and stored away for the winter. If the pots are laid on their sides they may be stored under the stages of the greenhouse, of course keeping them dry till the time for starting them in spring comes round.

Camellias.—The present is an anxious time, as one is eager to ascertain if any of them are likely to drop their flower-buds, an evil against which precaution should be taken. Take care, therefore, that the soil does not get dry, and should there be any shortcomings in the supply of water at the root—and this is specially to be guarded against in the case of large plants planted out and in large tubs. It is a good practice to form a ridge of soil about 1 foot from the stems of plants in tubs, and sometimes it is requisite for those in borders, and to pour the water inside of the enclosure, thereby ensuring the proper wetting of the centre of the ball—the outside soil usually gets

enough water. Where practicable, occasionally give the plants a heavy syringing: this not only cleans the foliage but keeps the buds plump. If the buds stand too thickly take off one quarter of the number now, and later, if none fall, one quarter more. *F. Ross, Bletchingly*.

THE FLOWER GARDEN.

SHRUBS.—This month is perhaps one of the best in the year for lifting and transplanting evergreens, except hollies, trees, and shrubs; but in the event of inability to begin such work now, advantage may be taken of fine open weather between now and the end of next March. Where new plantations are to be made the soil should be trenched two spits deep, and if of a poor character it will be found advantageous to work in with the staple a liberal dressing of manure. Heavy retentive soils should be drained, or it will be useless to attempt to grow Conifers and many of the choicer evergreens. In transplanting large specimens move them with a good ball, and in some cases such work ought not to be done unless the plants have undergone previous preparation, digging out a trench at a reasonable distance from the bole and refilling with light soil. Deciduous subjects may be moved later.

Flower Beds.—Those which are intended for early spring flowers may now be planted. In my opinion a bed should be planted with two distinct species or varieties and no more, and these should usually be such as will flower simultaneously, *i.e.*, with subjects whose chief beauty is their flowers. The following plants are good for the purpose:—Wallflowers edged with *Viola Blue Bell*, *Arabis* with *Polyanthus* or double-flowered *Daisies*, *Myosotis dissitiflora* and *Alyssum alpestre*, *Erythronium deus-canis* with *Crocus*, *Chionodoxa Luciliae*, and *Snowdrops*. Each and all of the above go well together, and will be found to make pleasing beds. By way of a change foliage-plants should be employed as an edging; the two first-named look well with a broad band of *Stachys lanata* or variegated *Vinca*, and golden-leaved *Thyme* or *Sedum acre aureum* might be used with some of the others. *J. Horsfield, Heytesbury*.

FRUITS UNDER GLASS.

MELONS.—In order to impart flavour to these fruits at this season a high and dry temperature must be kept up in the house—70° to 75° at night. In the daytime when the inside temperature reaches 80° with sun-heat a little ventilation should be afforded, closing the house so as to secure a temperature of 85° in the afternoon, and this should not sink below 75° at 10 P.M. Caution is required in watering to avoid the risk of the fruit cracking.

We have still a nice crop of fruit from pots, *M'Indoe's Scarlet Premier*, *Pearlryn Seedling*, *High Cross Hybrid*, and *Golden Perfection* are the sorts we grow. The fruits swell well for this season, and the flavour is fairly good. Fruit which is cut now will keep sound much longer in a dry fruit room than earlier in the season.

Cucumbers.—Plants raised from seeds sown in the beginning of August will now be in full bearing; in fact they will show a great deal more fruit than should be allowed to remain, and it is always best, in order to preserve the plants in vigorous health during the winter, to crop with moderation. As the nights lengthen and cold increases, a greater amount of fire-heat must be employed, and this means more moisture, but it is not advisable to syringe the plants much and it should be supplied principally by sprinkling the paths and beds.

Where the bottom-heat is wholly dependent upon hot-water pipes the plants must not be allowed to suffer from dryness at the root, and when the beds require water the maximum day temperature should be reached before applying it, and the warmth of the water should be 5° higher than that of the bed. Keep a quantity of friable loam, leaf-mould, and spent Mushroom-bed manure in equal parts on hand, to place over the roots whenever they appear on the surface. Prior to applying 2 inches of this dust the roots with Thomson's manure, which will be found a sufficient stimulant without having recourse to dung-water at this season. Attend to the pinching and training of the shoots with regularity, and remove all damaged leaves from the plants before decay sets in. *Wm. Baillie, Luton Hoo*.

Advertisers are specially requested to note, that, under no circumstances whatever, can any particular position in the paper be guaranteed for advertisements occupying less space than an entire column.

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THE GARDENERS' CHRONICLE,
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W. RICHARDS, 41, Wellington Street, Strand, W.C.

APPOINTMENTS FOR THE ENSUING WEEK.

SHOWS.

WEDNESDAY, OCT. 31—Hayant.
THURSDAY, Nov. 1 } Alverstoke and Gosport (two days).
Southampton (two days).

SALES.

		Dutch Bulbs, at Stevens' Rooms. Azaleas, Lilies, Spiraeas, and Dutch Bulbs, at Smail's Rooms. Dutch Bulbs, at Protheroe & Morris' Rooms.
MONDAY,	OCT. 29	Fruit Trees and Other Nursery Stock, at the Osborn Nursery, Sunbury, by Protheroe & Morris (two days). Freehold Estate (the Osborn Nur- sery), Sunbury, on the Premises, by Protheroe & Morris.
TUESDAY,	OCT. 30	Dutch Bulbs, at Stevens' Rooms. Orchids in Flower, at Protheroe & Morris' Rooms.
		Named Roses and Dutch Bulbs, at Stevens' Rooms. Azaleas, Lilies, Spiraeas, and Dutch Bulbs, at Smail's Rooms. 6000 Lilium auratum, and Other Bulbs, at Protheroe & Morris' Rooms.
WEDNESDAY,	OCT. 31	Nursery Stock, at the Abbey Wood Nurseries, by Protheroe & Morris (two days).
		Imported and Established Orchids, at Stevens' Rooms. Dutch Bulbs, at Protheroe & Morris' Rooms.
THURSDAY,	Nov. 1	Nursery Stock, at the American Nurseries, Leytonstone, by Pro- theroe & Morris (two days).
		Azaleas, Lilies, Spiraeas, and Dutch Bulbs, at Smail's Rooms. Imported and Established Orchids, at Protheroe & Morris' Rooms.
FRIDAY,	Nov. 2	
		Named Roses and Dutch Bulbs, at Stevens' Rooms. Dutch Bulbs, at Protheroe & Morris' Rooms.
SATURDAY,	Nov. 3	

Fertility of
Soils.

It is frequently a matter of surprise, especially to farmers, who are apt to lament the exhaustion of their soils, that gardens that have been cropped for years are so much more fertile as a rule than are their fields. There are many causes for this, such as better drainage, more thorough tillage, a more varied rotation, to say nothing of better shelter. But the main reason why the soil of old gardens is so fertile is, that there is a vast accumulation of animal and vegetable matter, containing organic nitrogen, that is to say, nitrogen in combination with carbon. From an analysis of the soil at Sir JOHN LAWES' garden at Rothamsted, it was found that such soil contained nearly four times as much nitrogen in the first 9 inches as the average of the adjoining arable soils, and nearly five times as much as the first 9 inches of some exhausted Clover-land soil.

Such richness of soil has some disadvantages. Many insects find their food and shelter in the organic matter which is undergoing spontaneous decomposition, and hence many good gardeners, when there is a considerable extent of old garden ground, fallow a portion of it, adding lime or lime rubbish, and plant green crops, such as the more hardy of the Cabbage tribe, which always grow luxuriantly in such soils. After a year or two the superfluous organic matter is converted into nitrate of lime, and is used up by the growing plants. In all soils there exist very minute forms of underground vegetation, invisible to the eye, and the function of which is to separate the

carbon and hydrogen from the nitrogen, and to unite it with oxygen. But to effect this, lime as a base must be present in the soil, and the compound so formed is called nitrate of lime. Hence the advisability of a dressing of lime or lime-rubbish, which not only destroys many insects and grubs in the soil, but helps the growing plants to make use of the rich humus of the ground.

Another advantage of this course of cropping is that nitric acid as present in the soil contains an immense amount of oxygen, and it is only those particles of carbon which are close to the surface of the soil that can have free access to oxygen; the constant stirring which the soil receives during the early growth of the plants we have mentioned is doubtless the means of continually exposing fresh surfaces to the action of the air.

Here, then, comes in another element of successful gardening, which materially affects the quantity and quality of the produce grown—we refer to the distance between the plants. A frequent fault of many persons is to plant too thickly; if allowed sufficient room the whole crop would be uniform in height and strength, producing a heavier and more equal sample. The wide distances between the plants would also allow of perfect stirring of the soil, and the complete destruction of the weeds.

All wet soils should be well drained, and all loose soils clayed or marled if possible; the first should be rendered light by repeated stirring and the addition of long fresh stable-dung, which tends to keep the soil open and admits the oxygen of the air; the latter consolidated and enriched with well-decomposed manure, and the digging-in of refuse animal and vegetable matter.

The crops should be varied as much as possible, alternating Cabbage, Potatoes, and such-like gross feeders, with Onions, Carrots, Peas, &c., increasing and economising every kind of manure, and blending it intimately with the soil by deep and constant stirring.

Whatever may have been the character of the original soil, it will in time become fertile, the only difference being that the rich alluvial soils require much less tillage and manuring to keep up their fertility; but if they are overcropped and neglected they will soon become deteriorated, and yield less than more inferior soils, which are properly managed. Few men are aware of the value of rich garden soil, compared to that of the poorer classes of soil, until they reckon the expense at which the crops are raised in either.

It may sometimes be advantageous to buy poor land, but it is so seldom to rent it, and our advice to all young, inexperienced gardeners, who are intending to raise produce for the market is, to seek for land in the richest districts, and to exercise skill and industry in keeping up its fertility, rather than in producing it where it did not exist before.

The Chiswick
Fruit Con-
ference.

THIS meeting terminated on Saturday last, the exhibition closing on the following day. We reported last week the proceedings up to Thursday, and gave a full report of the show, the general excellence of which was a surprise to most folk, considering the season. In our present issue we resume the publication of the papers read after we went to press last week, and we give a list of the awards made. In studying these awards, which show, first, the amount of favour enjoyed throughout the country by each of the best known varieties, and, secondly, the degree of excellence of particular varieties as shown on this occasion, the objects of the exhibition and Conference must be borne in mind.

Selection, and not indiscriminate representation of varieties, still less quantity, was the main object. In this way it is hoped that the cultivator's embarrassment as to what variety to plant will be materially lessened, and that growers for profit—market growers—may learn what is most likely to answer their purpose. In this latter point there is a good deal of whimsical caprice, which is hard to account for. An Apple may have all the qualities that may be desirable, but if it is not in favour with the dealers or the public, it is valueless as a market Apple. We heard in the course of the week some curious stories about really fine samples of Cellini Pippin being unsaleable in the market.

The general impression is that the Congress was a success, the show excellent, the papers practical and to the point, and at the end a resolution was passed urging on the Royal Horticultural Society the desirability of the appointment of a committee to deal with the economic and fiscal questions raised, including railway rates; and another urging on the Council of the Royal Horticultural Society the propriety of developing the resources of Chiswick to a greater extent than at present.

Great satisfaction was felt at the line of policy followed by the present Council, and especially by the holding of so important a Conference in so appropriate a locality as Chiswick. Those interested in fruits and fruit-culture will have a good deal to interest them during the next few weeks, and the Chrysanthemums will be upon us before they or we can digest the matter properly; but one and all will thankfully appreciate the good efforts the Society has made to assert itself in so good a cause.

The New
Vegetable.

MESSRS. CARTER showed a large basket of the vegetable known in the Paris markets as "Crosnes," at the last meeting of the Royal Horticultural Society on Tuesday; and at the Crystal Palace hardy fruit show Messrs. Sutton also showed specimens. It really consists of the tuberous rootstock of a species of *Stachys* known provisionally as *S. tuberosa*, and closely allied to the Woundwort of our hedges. Its culture is of the easiest—in fact, nothing more is requisite than to place the tubers in the ground, as we can testify. We placed some of ours in the open border last autumn, whilst other tubers were grown throughout the winter in a pot in a cold frame, and planted out in spring. Neither the one nor the other received the slightest attention on our parts, but in spite of that, our carelessness was rewarded, as it ought not to have been, by an abundant crop. In flavour, when boiled, it is something between a Jerusalem Artichoke and a boiled Chestnut. We have no doubt, that with proper cultivation, we shall have a vegetable that will be of great service in securing variety at the dinner-table, though we cannot pretend to look upon it as more than a delicacy, of relatively little value as a food crop, though the profusion with which its tubers are formed, and the ease with which they may be multiplied by using each joint as a "set," may possibly give it some value in this respect.

It requires only little experience of what a French cook can do to foresee the variety of ways in which such an artist would dish up these dainty little tubers. We may expect, as usual, some prejudice to arise at first sight, indeed, we have heard of some people objecting to them on the ground of their resemblance to caterpillars! The resemblance is not very close, but we all know how obstructive such prejudices

are. We may add that we were indebted for the specimens we grew to Mr. HASKINGS, gardener to Sir HENRY THOMPSON, and that the tubers grown on a cold clay soil, without manure or care of any kind, were not only abundant and delicate to the taste, but when dug out of the ground were of a silvery whiteness, recalling in a minor degree the pearly lustre of bream or whitebait. Messrs. CARTER's specimens were by no means so bright in colour as our own—a fact which suggests the probability that the nature of the soil may much affect the appearance of the skin, as it does in the case of Potatos. In any

able profusion. The plant from which our figure (fig. 68) was taken is in the gardens of H. E. GREEN, Esq., Kingsford, Colchester, and is the striatifolia variety of *H. reticulatum*, distinguished by its rather broader leaves, and by a distinct white keel running their entire length. It is a showy late summer flowerer, but the flowering season can be considerably lengthened by starting at various times any bulbs that may have been at rest during the winter and early spring. It requires a distinct period of rest in a greenhouse from October onwards until March, when the first plants may be induced to recommence growth by a thorough soaking of tepid water, and by being placed in a warm pit or house where

THE NATIONAL AURICULA AND NATIONAL CARNATION AND PICOTEE SOCIETIES (SOUTHERN SECTION).—The annual meeting of the members of these societies took place at the room of the Horticultural Club, Hotel Windsor, Victoria Street, S.W., on the 23rd inst. The Rev. H. H. D'Ombra in the chair. Present also: Messrs. Shirley Hibberd, Treasurer; J. Douglas, Secretary; H. Turner, R. Dean, T. E. Henwood, J. Lakin, &c. The notice convening the meeting, and the minutes of the last annual meeting having been read, the Treasurer presented a statement of accounts as follows:—National Auricula Society.—Receipts, including balance in hand, £23; and subscriptions, £51,



FIG. 68.—HIPPEASTRUM RETICULATUM: FLOWERS RED, LEAVES STRIPED: MUCH REDUCED.

case, the skin is so thin that washing only is required before cooking, and no peeling is necessary. The plant has not flowered anywhere so far as we know, so we can only refer the reader to our previous article (p. 13, Jan. 7, 1888) and illustration for the full history of the plant so far as known.

HIPPEASTRUM RETICULATUM.—The original species of the above plant, generally known in gardens as *Amaryllis reticulata*, but now placed by Mr. J. G. BAKER under *Hippeastrum*, was introduced to this country from Brazil in 1777, and flowered at Mr. LEE's nursery, Hammersmith, in 1781. The flowers are bright mauve-red, with numerous cross lines of crimson colour; and when well managed, the plant produces them in consider-

able profusion. The plant from which our figure (fig. 68) was taken is in the gardens of H. E. GREEN, Esq., Kingsford, Colchester, and is the striatifolia variety of *H. reticulatum*, distinguished by its rather broader leaves, and by a distinct white keel running their entire length. It is a showy late summer flowerer, but the flowering season can be considerably lengthened by starting at various times any bulbs that may have been at rest during the winter and early spring. It requires a distinct period of rest in a greenhouse from October onwards until March, when the first plants may be induced to recommence growth by a thorough soaking of tepid water, and by being placed in a warm pit or house where

amounted to £91 12s. 1d; and the expenditure, including prize money, £61 12s. 6d., came to £73 14s. 9d., leaving a balance in hand of £17 17s. 4d. National Carnation and Picotee Society.—Receipts, including balance, £11 6s.; and subscriptions, £39 18s. 6d., came to £59 7s. Expenditure, including prize money, £42, amounted to £52 3s. 2d.; leaving a balance in favour of the Treasurer of £7 3s. 10d. The accounts were referred to the auditors. It was resolved that the financial year should for the future close on September 29. The Chairman was requested to send a letter of condolence to Mrs. Whitbourn, widow of the late President of the Auricula Society, and Mr. Shirley Hibberd was elected President in the place of the late Mr. F. Whitbourn. Dr. Hogg, Dr. Masters, Mr. J. T. D. Llewellyn, and Mr. H. J. Veitch were re-elected

Vice-Presidents; and the following, with the Rev. H. H. D'Ombraim as chairman, were elected a committee of management for the ensuing year—Messrs. H. Cannell, J. James, R. Dean, C. Phillips, H. Turner, T. S. Ware, W. L. Walker, and G. W. Wheelwright. The President and Vice-Presidents of the National Carnation and Picotee Society were also re-elected; and the following three added to the committee of management:—Messrs. H. W. Headland, J. Lakin, and W. L. Walker. Mr. T. E. Henwood was elected Treasurer to both Societies; and Mr. J. Douglas was re-elected Secretary. The matter of appointing judges was discussed, and eventually referred to the committee of management. The place of exhibition for next year was also discussed, and the Rev. H. H. D'Ombraim and Mr. Shirley Hibberd were appointed a deputation to wait upon the Directors of the Crystal Palace Company with a view to holding the exhibition at Sydenham. It may be remarked that the usual sum of £30, usually given by the Council of the Royal Horticultural Society to the two Societies was not forthcoming; therefore their financial position is in every way favourable.

NOTTINGHAMSHIRE HORTICULTURAL AND BOTANICAL SOCIETY.—The monthly meeting of the Society will be held at the Arboretum Rooms, Nottingham, on Wednesday, October 31, at 7.30 P.M. Specimen fruit will be exhibited. Mr. M. GLEESON, Clumber Park Garden, Notts, will read a paper on "The Pine-apple," giving a short sketch of the distribution of the plant, its introduction to Europe, and the various methods of its cultivation down to the present time. The Chrysanthemum, fruit and Potato show will be held on Wednesday and Thursday, November 21 and 22, at the Arboretum Rooms, Nottingham. The prizes offered by Mr. R. SANKEY, Bulwell, for the best essay "On the Duty of the Employer to his Gardener," will be divided as follows:—1st prize, 20s.; 2nd prize, 15s.; 3rd prize, 10s.; which will be accompanied by the First, Second, and Third-class Certificate of the Society. The essay must not exceed fifteen minutes in reading. It will be read by a competent person, who will be appointed by the Committee, and must be sent to the Secretary, sealed up, and with a number or motto, but not the owner's name, not later than Monday, December 9. The competition is open to all the members of the Society, and the papers will be read at the meeting on Wednesday December 12, at 7.30 P.M.

"CHAMBRE SYNDICALE" OF GHENT.—At a meeting held on the 8th inst. the following awards were made:—First-class Certificates to *Odontoglossum maculatum* Duvivierianum, from Mr. Desmet-Duvivier; to *Anthurium Scherzerianum* Madame Raymond de Kerchove, from Mr. L. Spaevandermeulen; to *Cattleya aurea* and *Oncidium ornithorhynchum album*, from Mr. Jules Hye-Leysen; to *Odontoglossum* species and *Cypripedium Harrisianum* (extra var.) from Messrs. Edm. Vervaeet & Co.

RELAXATION OF THE PHYLLOXERA CONVENTION REGULATIONS.—The Italian Government has relaxed the regulations hitherto in force with regard to the importation of the following articles into the kingdom of Italy:—1. Wine, and Grape seeds, and these without undergoing any formalities. Table Grapes, wine Grapes, and Grape must, must be packed according to Art. 2 of the Convention. 2. Cut flowers, fresh or dried, with their stalks. 3. Vegetables, as Potatoes, Radishes, Celery, Beet-root, Mushrooms, Truffles, Asparagus, Artichokes, Chicory, Endive for salads, with roots. 4. Seeds of all kinds. 5. Small seedling plants, shrubs, and other nursery stock, as also greenhouse and stove plants. These must be packed and sealed according to, and require the usual declaration fixed by Art. 3 of the Convention. The importation of these plants is permitted at the following places only:—By land at Ventimiglia, Modena, Luino, Chiasso, Ala, Pontebba, and Udina. By sea at Genoa,

Leghorn, Civita Vecchia, Naples, Brindisi, Bari, Ancona, Venice, Palermo, Messina, Catania, Cagliari, and Porto Torres.

EUCALYPTUS.—Mr. HANBURY sends us from La Mortola, near Ventimiglia, a spray of a most elegant Eucalyptus, with slender pendulous branches and linear leaves, with a rich perfume like that of the Lemon Verbena, but more delicate, and with white myrtle-like flowers. It is one of the most elegant species we have seen, but unfortunately at present we are unable to give it a name. We hope shortly to figure it, as in this country it would be well worth cultivating in the conservatory or winter garden.

ACHRAS SAPOTA.—Mr. FAWCETT kindly sends us from Jamaica a fruit of the Sapodilla Plum, in which one of the seeds is wanting and its place supplied by a second fruit—a fruit within a fruit such as has been figured in these columns in the case of the Grape, where a perfect berry is sometimes met with within the first in the place of the seed. It does not follow in such cases that there has been any change of one into the other, but simply a substitution.

PATENT PROTECTOR SAFETY LAMP.—A new form of lamp for household use has been put on the market by the "Protector Lamp and Lighting Company, Limited, Eccles." The invention is such an important one, as by its general use the loss of life by mineral oil lamps will be entirely prevented, that we are induced to notice it on this occasion. It would, we think, be an admirable lamp for young gardeners, who have to attend to fires at night, and which involves careful reading of the thermometers in the various houses. It is said to give the light of a sperm candle, and does not cost more than a 1d. for 120 hours burning.

LIQUORICE ROOT.—A report on the trade of Damascus for 1887 states that there has been a remarkable falling off in the export of Liquorice root (*Glycyrrhiza glabra*) both in quality, quantity, and value. In 1886 there were 15,944 bales of the value of £10,362 exported; whereas during last year the exportation declined to 3779 bales, of the value of £1492. For the past two years there has been a brisk competition in the trade in this article, which has caused a considerable fall in the price and an overstocking of the market. The demand consequently diminished much during last year, the United States being the only country where the article is in request.

EXOTIC CONIFERS AT GREAT ALTITUDES IN CENTRAL EUROPE.—We learn from our correspondent at Berlin that at Schloss Berg (Wartenberg), near Donaueschingen, at an altitude of 848 metres above the sea-level, there have grown for the last eight years the following plants, and better, perhaps for the reason that they have to endure the rough north-east winds, and do not suffer from frost:—*Araucaria imbricata*, *Cedrus Deodara*, *C. Atlantica*, *C. Libani*, *Abies amabilis*, *A. magnifica*, *A. nobilis*, *A. nobilis* var. *glauca* and var. *argentea*, *A. lasiocarpa* (Lowiana), *A. Pinsapo*, *Sciadopitys verticillata*. During the last winter they endured a temperature of 25° R. (= 2½° F. under zero). At the same elevation, growing very well, are *Castanea vesca*, *Juglans regia*, *Azalea amona*, *Rhododendron hirsutum* and *R. ferrugineum*. Hofgartner KIRCHNER intends to plant there a complete pinetum.

PHYLLOXERA IN FRANCE.—The Minister of Agriculture in France states in his report of the wine departments of the country, that flooding the vineyards has been followed with excellent results, and that the reinstating of the vineyards by means of grafting on the American Vines has warranted the experiment. Moreover, the French varieties, when so grafted, gain in earliness, and bear considerably, even in the Medoc district, without loss of fine flavour. After a good deal of research, a method has been discovered by which the vineyard can be

restored to fertility in three years. Among other results of grafting, it has been found that varieties of Medoc Grapes can be got to fruit well in the Gironde, where, by direct planting, no good result was attainable. Vines which have been planted in very sandy soil, as on the banks of the Gardon, and in the vicinity of Aignes Mortes, make great progress, and are proof against Phylloxera. We learn that in Medoc sulphur and bi-sulphide of carbon have been successfully employed against the Phylloxera, and the Bordeaux solution (sulphate of copper) against mildew, with similar results.

THE LINNEAN SOCIETY OF LONDON.—The meetings of the above Society for the season, 1888-89, have been fixed as follows:—1888: November 1 and 15, December 6 and 20. 1889: January 17, February 7 and 14, March 7 and 14, April 4 and 18, May 2, (Anniversary) Friday, May 24; June 6 and 20.

AUSTRALIAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.—BARON VON FERDINAND MUELLER has been elected President for the ensuing year.

ACACIA DECURRENS (?)—Captain BROWN sends us from Lamash, Arran, a spray of an Acacia growing there in the open air under the name of *A. decurrens*, but which, were it not for the paucity of the white meal on the leaves, we should have referred to *A. dealbata*. Whatever be its real name, the tree suggests the Riviera, or the temperate-house at Kew, rather than an island on the south-west of Scotland.

PERTH GARDENERS' BALL.—What may be regarded as the first ball of the season took place in the Small Hall of the Opera House on Friday night, when the Perth Gardeners held their fifth annual assembly. The hall was very beautifully decorated for the occasion. There were about forty couples present, almost all the principal gardens in the district having representatives.

INDIA-RUBBER AND OPIUM AT MOZAMBIQUE.—The following note on the produce of rubber at Mozambique occurs in a recently issued Consular report. The writer says:—"Rubber is obtained mostly from the lower districts nearer the sea. There are two qualities, differing in their method of preparation. The better is that drawn from cuts made in the stems of vines, and made up into balls without further preparation. The inferior quality is got by boiling the rubber-bearing stems and roots; it is white, contains much moisture, and commands a lower price than the other. The supply of rubber continues to be maintained, but cannot be expected to last very long, as in some districts the vines have all been destroyed by the reckless way of gathering employed by the natives. It has more than once been proposed to try systematic planting of rubber trees, but nothing has yet been done. There is no doubt that the supply could be increased, as well as made more certain, were cultivation gone into systematically, and the gathering of the rubber not left to the mercy of natives. The total export in 1885 was valued at £1450. Referring to the cultivation of opium, it is said that at Mojea it has been put on an entirely new footing. In some other places—namely, at Chamo, on the Shiré, and Mafufu, on the Ziwa-Ziwa—opium culture has also been under the auspices of the Mozambique Produce Company, Limited, of London.

SPRING GROVE HOUSE, ISLEWORTH.—This place will ever be interesting to the horticulturist as having been once the residence of one who is deservedly famous in the horticultural world—we allude to Sir JOSEPH BANKS, and in old times closely identified with the Horticultural Society—witness the Banksian Medal of the present day. Amongst the interesting reminiscences of the great naturalist, we observed *Rosa Banksia* growing "hale and hearty" on the gardener's cottage. It was one of the first

plants imported into this country with another sent by KERR from China to the Royal Gardens, Kew, in 1807. The estate has been purchased by ANDREW PEARSON, Esq., of the firm of A. & F. PEARSON. Extensive alterations and improvements are being made as to replanting, &c., under the superintendence of Mr. MICKLEWRIGHT, the able head of affairs horticultural here. When completed, we hope to refer more fully to this interesting place.

GARDENERS' ORPHAN FUND.—We are pleased to learn that the *soirée* recently held by the Chiswick gardeners, and which gave great satisfaction to those present, has resulted in a balance of £10, which will be handed over to the Fund.

MR. JOHN LEE.—It will be a matter of deep concern to all acquainted with this gentleman, the "Father" of the Gardeners' Benevolent Institution, Chairman of its committee, and President of the Horticultural Club, to learn that he is dangerously ill—a fact that, in consideration of his advanced years, gives rise to serious apprehension.

CHISWICK HORTICULTURAL SOCIETY.—We are requested to state that the Chrysanthemum show of this Society will be held on Friday, November 16, instead of on November 15, as previously arranged and announced.

NURSERY NOTES.

MESSRS. CANNELL & SONS, SWANLEY.

THE oft-repeated public invitation to "Come and see," has acted on me, being by nature of a retiring disposition, rather as a deterrent than otherwise. It is only right to say, that having screwed up my courage, I have been to see, that I am more than satisfied with the result, and that I decidedly recommend others to go likewise and see what Messrs. Cannell have to show at the "Home of Flowers." Moreover, from what I saw just after the nipping frosts we had in the early part of this month, I do not think it will much matter what time of the year the visit be paid, as there is sure to be a blaze of bloom in some of the houses, and sure to be something to please the visitor interested in flowers.

Situate a few miles out of the smoke and fogs of London, on a sandy loam, overlying the chalk, in a famous fruit growing district, and with an undulating surface that admits of varying aspects and exposures, it will be seen that Messrs. Cannell's nursery is well placed; but a second and still larger one is to be found at Eynsford, a few miles off.

Perhaps because of my retiring disposition, perhaps because of some natural perversity, but most probably because it was the nearest way, I entered the nursery from the adjacent railway station, by an entrance made terrible to idle beholders by the announcement that there was no admission except on business. On consideration, assuring myself that I had some business, I entered the nursery by a gateway evidently intended more particularly for the egress of goods to the adjoining railway, and found myself to my surprise among a large and representative collection of herbaceous plants. This was more than I had anticipated; particularly so as judicious selection had been exercised, and the plants cultivated were good of their kind, with very little rubbish among them. Having said that the selection was good, it will be readily understood that the plants were among the best of their kind, and anything like enumeration is unnecessary. But as a matter of physiological interest it may be worth while to note a few facts as to the action of frost. While the Dahlias presented a sorry sight indeed, and the young shoots of some pot-Vines placed in the open air were destroyed, some plants of Abutilon in flower and fruit were uninjured, as were Galtonia candicans, tall Lobelias, Pentstemons, Antirrhinums, Everlastings, Ammobium, and the showy Senecio pulcher. The allusion to Senecio pulcher leads one to suggest to Mr. Cannell, who

has "improved" so many flowers, that he should try his hand at this, and secure a little more refinement and compactness of growth in this plant, and a little less "rough" appearance in the flowers. Autumn Crocuses, like speciosus and longiflorus, and Colchicums of various kinds, gave wonderful brilliancy to the beds. A grand bank of Indian Pinks scarcely showed a trace of the ordeal, to which they had been subjected. Much of the immunity noticed was no doubt attributable to the fine Hornbeam and Poplar hedges which traverse the nursery, and afford shelter from wind and cold. The poor Dahlias in the open suffered, apparently, one and all; had they been more sheltered, it is possible some might have been saved, and these might have been selected as the progenitors of a hardy race of Dahlias. Why not? Mr. Cannell has effected as wonderful things as that in his time. If you want a proof, just look into some of those serried ranks of low double span houses, filled to repletion with Begonias and Pelargoniums. Oh, the colours! Could this have been October 8?—the almanac said so, and I incline to think from what I saw that the aspect of Mr. Cannell's houses and the dates of the almanac will be similarly incongruous, only more so (!), on November 8 or December 8.

To attempt anything like description of the Begonias is out of the question. "Go and see," is really the best recommendation we can give. It is, however, remarkable to see how these new creations emulate in the delicacy and variety of their tints, now the Oleander, now the Camellia, at another time the Gloire de Dijon Rose, while Pæonies and Hollyhocks find their colours and even their forms closely imitated. Sturdiness of habit, size of flower, purity of colour—these are what is sought after and sought for not in vain. One sort with orange-scarlet flowers is appropriately named Mr. Upright on account of its stout erect peduncle. Novelties in stripes may be expected and if the fashion sets in that direction Messrs. Cannell will know how to fall in with the popular taste. In the meantime, in a Begonia named Octavia, they have a dwarf variety with small, double white flowers, like a small Camellia, which may be called the plant for every one. Its compact habit, profusion and continuity of bloom will secure for it admirers among all classes. The flowers, indeed, are not as large as cheese-plates, as some of the modern Begonias are, but they are none the less beautiful, while their neat, imbricating, rounded petals, may satisfy even an exacting florist.

Scarcely less remarkable are the zonal Pelargoniums, single and double, but they are not quite so novel; their ancestry dates back to a little more remote time than the Begonias, which, whether double or single, are, as it were, of yesterday. There is almost the same diversity of colour in the Pelargoniums as in Begonias, but clear yellow is wanting in the Pelargoniums, though many gleam with orange, and the Begonias do not at present show so near an approach to purple as the Pelargoniums do. Moreover, the Begonias are translucent, while the Pelargoniums, though equally pure and brilliant in colouring, are more opaque. Here, again, I refrain, of set purpose, from quoting individual varieties (send for a catalogue), but a notice of one or two must suffice. Swanley Double White, is a most useful plant, with the peduncles not too high above the leaves, the flowers, in compact trusses, white, and what they lack in "properties," is more than made up for by the profusion and continuity of bloom; Goldfinder is a rich orange, and Golden Brilliantissima is of a similar hue; Venus, one of the show varieties, has pure white flowers all of regular pelorian shape, interesting botanically and certainly very serviceable for decorative purposes. Bronzes are going out of fashion, but the tartan-plaid varieties, like Mrs. Pollock and her imitators, such as Henry Cox, still hold their ground.

It was rather consoling to find that the Chrysanthemums were not out, as more than 1200 sorts are grown here! The blaze of bloom in Begonias and Pelargoniums was quite enough for one day, and I

was amply satisfied that there will be no falling off next year when I saw the tubers of Dahlias, Begonias and Cannas being carefully put to bed to prepare them for next year, just as children used to be (query are they now?), before being taken to the theatre.

Seed stores and drying-sheds were visited, the latter unfortunately in request this autumn, as the rainy summer and sunless skies delayed progress at one end of the season, while cold frosts arrested it at the other. No doubt, however, Mr. Cannell will be able, as usual, to hold out his hand and show his seeds in his palm with as much well justified confidence as ever. *The Rambler.*

FOREIGN CORRESPONDENCE.

FLOWERS, &c., IN BERLIN NURSERIES.

THE cultivation of pot plants has not retrogressed, and during the spring and autumn the market was a good one. Large decorative foliage plants fetched higher prices in spring than in autumn; Rhododendrons were readily sold off, Azaleas and Camellias became difficult to obtain, and Hydrangeas were much wanted. Double Primula chinensis are losing favour, but the single varieties sell better; Cinerarias are less cultivated. Roses, Lilacs, and other forced shrubs found purchasers at good prices and were much in request, especially Roses in pots. The summer market for Roses gets worse yearly; but Orchid cultivation increases. The export of bulbs diminishes, but that of Lily of the Valley increases with lower prices. The import of vegetables from the south and west, and also from the north, of Cauliflower, keeps down the prices; also the great quantities from the urban irrigation fields influence the market prices; the forcing of vegetables gives, in consequence of the large import, but little returns. Mushroom growing has much increased. The weather at the time for sending out trees and shrubs was good, but the orders had diminished in value. Fruit trees still hold the low prices that prevailed last year, notwithstanding a great many *chaussées* were constructed, and large quantities of trees were employed. Roses held for some time a very low price, owing to auction sales of produce from central and south-west Germany, but better prices now prevail. Park trees in large quantities were sold, but on low terms. Export was good only in early autumn, but it retrograded, in so far as Russia is concerned, owing to the heavy import duty on those articles, and the export to Russia will cease, the duty being 1s. 6d. per cwt. In seeds and seed cultivation no change has taken place, except that the seeds of *Cyclamen persicum* are much more grown and sold. The prices for flowers are low. Those of Italian flowers somewhat higher because of the dry season there. The importation of flowers is a little better than last year. The prices for dried flowers and grasses ruled about the same as last year, but those for Pampas-grass are higher. French *immortelles* are backward, German straw flowers—viz., *Xeranthemum*, *Rhodanthe*, and *Acrolinium*—are much wanted.

PICEA OBOVATA.

It may be interesting to some of your readers to hear that the Siberian Fir tree (*Picea obovata*, Lindl.), is, as I supposed a long time ago, indeed, only a climatic variety of the common Fir tree (*Picea excelsa*, L.) I found the first transitional forms near St. Petersburg, in 1883, where long before, in 1863, E. Regel described them under the name *Picea excelsa* var. *fennica*. Teplouchoff found them also in the Ural and Altai. Now I can add to these another spontaneous growth at Oberhof, in Thuringia, where it grows abundantly. If the opinion of Dr. E. Regel should be correct—viz., that these forms are hybrids of *P. excelsa* and *P. obovata*—this distribution would with difficulty find any explanation. But, if as I suppose, in accordance with Mr. Teplouchoff and others, that the *P. obovata* is only a climatic variety of the common Spruce adapted to the cold northern and eastern continental climate,

such a distribution is readily explained. For this case the form found by me at Oberhof, 800—1200 metres above the sea level are, also adapted forms. The habit of this tree is quite different from that of the common Spruce, viz., columnar, like that of the *Abies pectinata*. The squamae of the cones are, as the name says, obovate, at once distinguishing it from *Picea excelsa*, L., and *typica*. *Udo Dammer, Berlin.*

THE GENUS STANHOPEA.

It may be that in the years to come—probably in the near future—the Orchid family will compete with the Auricula and Carnation in the esteem of the florist. In a very out-of-the-way district in Yorkshire—Lowfields, near Kirkby Lonsdale—the Rev. F. D. Horner has his home, and there he grows the wonderful Auriculas which have made his name a household word amongst florists. There, too, he has, in conjunction with Mrs. Horner, made quite a unique collection of Orchids. Not a collection of fashionable Orchids—oh, no!—for the fashions of this world soon pass away. The whole collection might not be worth a single small plant of *Cypripedium Stonei* platytanum in money value. The house is only a small lean-to, 25 by 10 feet, in two divisions, and in front of it is a cool-house, 12 by 4½ feet only; and yet in these two houses there were in flower in December, 1887, thirty-five distinct species of Orchids; in January, 1888, thirty-five species; in February, thirty-three; in March, thirty-two; in April forty-two; in May, forty-eight; in June, fifty-four; in July, forty-one; in August, thirty-four. The promise of bloom during the autumn months is very good, and is in proportion to the other months. The two little houses are not exactly a *Refugium Botanicum*, as the collection contains many of the best species of *Cattleya*, *Lælia*, *Dendrobium*, *Angraecum*, *Vanda*, &c., but any quaint and curious Orchids find here a comfortable home and kind treatment. Amongst others the Stanhopeas are greatly valued. They give a profusion of their richly-coloured, quaint, and powerfully fragrant flowers when kept clean, and changed into fresh Teak baskets about once in three years. They are not over plentiful in the country, that is, in comparison with some Orchids; and if they became popular they would soon become very dear. Their culture is of the simplest, and owing to the way in which the flowers are produced the plants must be grown in baskets of Teak rods. The flower-spikes push downwards and vertically under the surface, so that the spikes come out between the Teak rods. The flowers rapidly develop, and soon pass away. Mr. Horner had just flowered the remarkably handsome *S. tigrina* (see fig. 69, p. 481); this is probably the most esteemed species in the genus, and it also varies very much in the markings and size of the flowers. Some varieties produce flowers 8 inches across; the variety at Lowfields was 7 inches across, and might well be named *superba*, if that name had not already been appropriated to a variety figured in the *Flore des Serres*, 713-5. The sepals of this variety are creamy-yellow, heavily blotched with claret, and are 2 inches wide, the petals three-quarters of an inch across, barred and blotched with deeper claret. It is one of Messrs. Low's introductions, sent to them from Xalapa in Mexico about the year 1835. It is well figured in the *Botanical Register* in 1839, and also six years later in the *Botanical Magazine*, where it is stated that the powerful fragrance this species exhales scents the whole stove—the perfume resembling a mixture of Melon and Vanilla. There is also a splendid figure of it in Bateman's *Orchid, Mex. et Guatem.*, t. 7.

S. Wardii, also grown here, is a charming species, deliciously scented; it is well known in collections, and forms a long spike of rich yellow flowers, spotted, reddish-purple. It is figured in Lindley's *Sertum*, and in the *Botanical Magazine*, t. 5289; and the editor states, that "one of the most striking features of this flower is the colour of the cavity formed at

the base of the lip, lined as it were with dark velvety purple, reflecting a silvery light, and giving to it the appearance of being frosted."

S. grandiflora I have not seen in flower; it is not figured anywhere, except in the *Botanist* (Maund.). The flowers are white, lightly dotted crimson, and also sweetly scented. There is also an excellent example of *S. insignis*; this is not only an interesting species, and very beautiful in itself, but on it the genus was founded by Sir William Hooker, when Professor of Botany in the University of Glasgow in 1829, in honour of the Right Hon. Philip Henry, Earl Stanhope. *S. grandiflora* was introduced two years before this, but was grown under the name of *Ceratichilus grandiflorus*. Twenty years ago I grew a plant of this species 2 feet across the mass of pseudobulbs. The flowers are of large size, and very fragrant. *S. oculata* is also well worth space in a select collection; I grew it into an immense plant some years ago, and can vouch for its easy culture. Like the last-named, it was grown and figured by Loddiges in the *Botanical Cabinet*, under the name of *Ceratichilus oculatus*. It produces a long spike of waxy-white or pale yellow flowers, the sepals spotted lilac-purple. One spike will scent a house with its fragrance.

Mr. Horner has not yet added the singular-looking *S. Bucephalus* to his collection, but it should have place where six species are grown. The rich deep yellow flowers, powerfully fragrant also, are distinctly marked with large blood-coloured spots. It is a native of Ecuador, and is well figured in *Bot. Mag.*, t. 5278.

Mr. Horner has several new species to flower, one from the Roraima district, and if they are as good as the few I have named they will be well worth growing. I would, at any rate, urge amateurs to include such distinct and handsome Orchids as the Stanhopeas in their collections. Those I have named are probably the best of them. *J. Douglas.*

SCOTLAND.

A NEW FORM OF POTATO DISEASE.

CONSIDERABLE interest has naturally been awakened in the North of Scotland by the report that a new form of Potato disease has this year been discovered. On the farm of Balmuchy, occupied by Mr. Gordon, the disease has appeared, and the shaws of a number of tubers have been sent to an expert in London, in order to get an opinion as to the nature and causes of the fungus. The disease, it appears, instead of beginning at the top of the plant, attacks the root and works upwards, devouring it, it is stated, all the succulent parts of the stem. The spores of the fungus are said to resemble the ergot of Rye [?], and possibly investigation may result in the discovery that it is allied to it in character. As to the cause of it, of course only conjecture may be hazarded, but it is not at all improbable it may be connected with the nature of the past season. Potatoes are always of better quality in a dry season than in a wet, and it may be taken for granted that the long prevalent moist weather rendered the plant less robust and more easily susceptible of attack. In these circumstances it may be found that the disease is not one that is likely soon to re-appear again, unless, indeed, the conditions which gave it birth reappear also. *W. K.*

ROYAL HORTICULTURAL SOCIETY OF ABERDEEN.

The annual meeting of the members of this Society was held in the Music Hall Buildings, Aberdeen, on Saturday evening, 13th inst. There was a large attendance, and Councillor Lyon, chairman of the acting directors, occupied the chair. In moving the adoption of the report, which stated that the receipts for the season have amounted to £456 14s. 8d., and the payments to £348 18s. 6d., leaving a surplus of £107 15s. 9d., which, added to £1 3s. 7d. brought from last account, leaves a sum of £108 19s. 4d. at the credit of the Society.

WOOLHOPE FUNGUS FORAY.

ON Monday evening, October 1, the visitors slowly concentrated themselves at the Speeche House, Coleford, in the Forest of Dean, and were met in the morning in the forest, or afterwards at the hotel, by the Hereford contingent. Cold it might be, for some of the party swept the snow from the grass into their hands at about 10 A.M., but it was clear and bright. As for the fungi, truly they were few and far between, the oldest excursionist venturing the opinion that it was the worst prospect of a fungus foray which the Woolhope Club ever experienced, bad as it was in the previous year. The ground was moist enough, it is true, but so cold, that only on the sunniest slopes could the commonest of species be found, and even these were scarce and scattered. Whether in anticipation of such a result, or from a combination of various circumstances, the company was much smaller than usual. It included Messrs. T. B. Acton, C. Bucknall, Dr. Carlyle, M. C. Cooke, T. Howse, W. Phillips, Rev. J. E. Vize, and H. T. Wharton, in addition to the President, the President elect, and a few old Woolhopians, under the guidance of the indefatigable H. C. Moore. The Tuesday's excursion by the Speeche House party was made in a circuit at some distance from the hotel, the other moiety proceeding to Danby Beeches, and thence by Blackpool Bridge (where remains of the paving of the old Roman road may be distinctly traced), and for 2 miles along the Spruce Fir ride. No record was kept of the species observed, but nearly everything in moderately good condition found its way into the collecting baskets, and yet they were not full. Rarities and novelties were out of the question, and never, perhaps, were common species treated with so much care and consideration. Even *Agaricus melleus* and *A. fascicularis* were treated with respect; one gentleman actually took off his hat in the presence of almost the only specimen of *A. rubescens* encountered in the Forest. Last year *Cantharellus aurantiacus* was one of the commonest species, sometimes growing by hundreds, but this year not a single one could be found. There was no dearth of walking—naught but walking "on, on, for ever"—to stoop and pick up a fungus was an event, but, alas! it was seldom worth the trouble of stooping. It was worthy of note, that although the large genus *Agaricus* contains some 700 British species, the number seen was singularly few, the proportion being very far less than in most other genera, whilst, in the number of individuals, *Lactarius* and *Russula* exceeded it. *Coprinus* was seen but once or twice, and all the species of *Cortinarius* were extremely rare. Dinner at the Speeche House Hotel, and a careful scrutiny of all the baskets, with the inevitable "nightcaps" ended the first day. On the Wednesday the members proceeded by train to Park End, which proved so satisfactory last year; but here again they were doomed to disappointment, for although more prolific than any spot visited on the Tuesday, yet the best was very bad, nothing of interest being found except some very fine specimens of *Russula integra*, and a few *Hygrophori*. Strolling slowly back through devious ways to Speeche House, soon after 2 o'clock, light refreshment and waggonettes carried the party a drive of 8 miles to Newnham Station for Hereford, and completed the two memorable days of fungus hunting in the Forest of Dean. Like the bears of the forest, in another corner of Europe, the fungi had retreated to the mountains, and would not be found. Thursday, being the Club day was devoted a little excursion in the woods and lawns of Holme Lacy, where Bracken flourished in luxurious profusion, but fungi were more scarce than in the Forest of Dean, although that was a contingency never anticipated. How it could be possible in October for any wooded locality to be worse than the Forest was not credited, but such was the summary of results. Dinner, as usual, at the "Green Dragon" Hotel, was followed by some remarks by Dr. M. C. Cooke on "The Mycology of 1887-1888," with a

summary of the books, and local lists published during the year, with new species which had for the first time been found in this country, including *Lactarius aurantiacus* in Epping Forest. *Agaricus* (*Omphalia*) *chrysophyllus* in Scotland, *Russula puellaris* and *R. roseipes* near Morpeth; *Russula Barlowe* and *R. granulosa* at Kew; *Russula maculata* and *R. armeniaca* at Epping; with *Hygrophorus spadiceus* from Crum Forest, and *Agaricus* (*Hypholoma*) *catarius* from Kew and the Forest of Dean; and lastly, the singular appearance of *Mutinus bambusinus* at Sunningdale. A comparison was also instituted between the meagre results of the present year's Woolhope excursions and the unusually successful excursion recently made in Epping Forest, but no clue could be given to the causes of such divergence, which, like some other

until he touched them did not discover his mistake. The social aspect of the week was a pleasant reminiscence, but the scientific phase undoubtedly a deplorable failure. *M. C. C.*

TREES AND SHRUBS.

PTEROCARYA FRAXINIFOLIA.

At p. 380 of your issue of the 6th inst. I notice your remarks in reference to *Pterocarya fraxinifolia*. Just now the trees here present a very beautiful appearance, and where the climate will admit of it I consider it a worthy subject to plant in groups with other choice trees and shrubs. Our trees range from 20 to 33 feet high; one grow-

roots of a tree that was blown down in 1883, we have two trees, both of which fruit freely. One of these is 50 feet high, but is not so fine as the one that was blown down. The two finest have grown beside a small stream, and to this, I suppose, must be attributed their fine development, though the third, quite away from any water, has made good growth. The mass of growth above referred to bears leaves very nearly 2 feet long and over a foot across. *R. Lewin Lynch.*

RHUS COTINUS.

Among shrubs in the autumn season this is one of the most ornamental, as its highly coloured inflorescence is very attractive; but to have it and see it at its best, plants must stand where they can have full light and sun, as it is those agents that give the rich deep tinge to the bloom. When it has this it is of great value for table decoration, as the lovely feathery sprays show up in fine contrast with the cloth, and form an excellent basis for any white or pale flowers to be mixed in with the *Rhus*. As a plant for prominent positions on lawns, or the foreground of shrubbery borders, the *Rhus cotinus* is quite unrivalled, and those who have not specimens of it should make a point of planting a few bushes, the best time for doing this being in November, or as soon as the leaves fall, when all deciduous subjects move without much check, as they have all the winter months to be forming fresh roots. The way to propagate *Rhus cotinus* is by cuttings of the young ripened shoots, which strike readily if taken off with a heel and dibbled in sandy soil in any sheltered spot, and there covered with a hand-light to keep them close till they callus. *J. S.*

THE CHEMISTRY OF VEGETATION, IN REFERENCE TO THE GROWTH OF THE POTATO.

(Continued from p. 326.)

A NEW line of research, which led to very important results, was brought about in a curious way. One evening Charles X.'s guests, at a *soirée* at the Tuileries, were effected with uncontrollable fits of coughing. An inquiry as to the condition of the air that caused this was ordered, and it was entrusted to Brongnart, director of the Royal porcelain manufactory, at Sèvres, who handed it over to his son-in-law, Dumas, a chemist who was rising to wide reputation. Most people probably know that chlorine is used for bleaching, and that it has a very suffocating odour. Dumas found that chlorine had been employed for bleaching the candles that were used in such large numbers to illuminate the brilliant salons. His investigation as to why the chlorine was retained in the candles led him to the discovery, that the chlorine had "substituted the place," chemically, of some of the hydrogen of the wax hydro-carbon, and that the amount of chlorine "fixed" was exactly equivalent to the amount of hydrogen eliminated.

From this hint he extended his inquiries to changes that may occur in other compounds, and arrived at what was known as the law of substitutions,* and this he later developed into a theory of chemical types. The theory was that certain compounds were constructed on a certain plan or type, and with it was expressed the belief that one "element" may entirely replace another without the type of the construction being altered. This was in 1839.

Gerhardt, of Strasburg, who lived only forty years (1816—1856), and at Leipsig, attended rather to chemistry than learning the business for which his father intended him, enlisted in a cavalry regiment, and was bought off to study under Liebig, at Giessen, eventually threw much of his energies into the subject of conflicting chemical theories. He gave much thought to the question of types, and it was chiefly through him and his fellow worker, Laurent, that there came the explanations which



FIG. 69.—STANHOPEA TIGRINA. (SEE P. 480.)

phenomena associated with fungi, "no fellow can understand." The usual *soirée* at the residence of Mr. Cam was largely attended in the evening, the papers read being "On Dr. Bull's *Birds of Herefordshire*," by H. T. Wharton, M.A., F.Z.S.; "Notes and Queries on *Russula*," by M. C. Cooke; and "On Spiders," by the Rev. J. E. Vize, M.A. The final excursion on Friday, October 5, was made by train to Pontrilas, thence by carriages to Kentchurch Park, returning to luncheon at 3 P.M. with Mr. and Mrs. Matthews at Pontrilas. This latter experiment gave immense satisfaction at the close of a barren week; the genial hospitality extended to the excursionists compelling them to forget the immediate past in the enjoyment of the present. The lawn was decorated by clever models of various fungi, painted by the hostess in such excellent style that one of the excursionists rushed upon them with his basket, and

ing near the margin of a lake has taken the form of a bush, and covers an area of 400 square feet. The bold yellow Walnut-like foliage, and the long pale green catkins make the tree a very pleasing object in garden landscape. Two plants growing on higher and drier ground have run up with clean stems of 8 feet in height, and then branch off into a head; the diameter of the thickest stem at 1 foot from the ground is 12 inches; the bark has much resemblance to that of the Walnut, to which it is closely allied. I send you specimens for your inspection. *D. Crombie, Gardener, Powerscourt, Ireland.*

This beautiful tree, illustrated recently at p. 381, is referred to in the accompanying paragraph as seldom producing the female catkins, and therefore some information of the trees at Cambridge may be of interest. Besides an immense mass, measuring 45 feet across and 20 feet high in the centre, grown up from the

* *Annals de Chimie et Physique*, 2^{me} ser., t. vi., 1840.

have made it possible to arrange certain organic compounds on the types of some of the simple inorganic bodies.

One very important suggestion he made was that the weights then usually assigned to oxygen, sulphur, and carbon, ought to be taken just double. This helped to clear up many apparent anomalies. For example, where it was formerly supposed that in a compound there were two atoms of oxygen each with the weight (relative to hydrogen) of 8, he suggested one of 16: carbon would be 12 instead of 6, and sulphur 32 instead of 16.

In this rapid historic retrospect much important work has been purposely passed over. The paper would otherwise be too long.

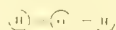
My aim has been only to draw the attention of cultivators to the kind of way in which, during the fifty years following the circulation of Dalton's first table, our chemistry has come to be what it is; that is, so far as measuring by volume and weight are concerned; for this, with temperature observations, is at the bottom of chemistry.

But this is not all; especially it is not all in reference to plant life.

There are compounds which, so far as the relative proportions of the weights of their constituent elements go, appear identical. Their "chemical composition" is the same, yet in certain physical ways they behave differently; it cannot, therefore, be assumed they are absolutely identical.

Leaving for the present the different names that have been proposed for these phenomena, let us consider one that has a bearing on starch and sugar.

It has been just mentioned that there are certain recognised types among compounds. It is not only a matter of convenience, but it seems to accord with the facts of Nature, that these can be thrown into groups, classes, series, or "families." (The use of these terms by chemists is unfortunately by no means uniform any more than is the use of alliance, group, sub-order, &c., among botanists.) One class or family all-important to the student of plant-life is that of the carbo-hydrates. Here the hydrogen and the oxygen (Lindley's *Introd.*) are present in the *proportion* in which they form water, *i.e.*—



H_{12}, O_6 , or H_{12}, O_{10} , or H_{10}, O_5 , retain the same *proportion*, just double the number of H atoms compared with the number of O.

Of these carbo-hydrates there are three groups, to which are given the names glucoses, saccharons and amyloids (some use glucoses, sucroses and amyloses). They differ only in the relative amount of $(H) \text{---} (O) \text{---} (H)$ they contain.

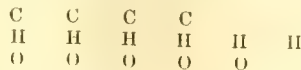
Glucoses ...	C	six	
	H	twelve	12
Saccharons ...	C	six	6
	H	twelve	12
Amyloids ...	C	eleven	11
	H	ten	10

(Or some multiple of six, ten and five, as *e.g.*, twenty-four, forty and twenty; in any case the H number is double the O.)

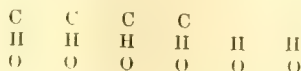
Now the point here to notice is that a glucose becomes a saccharon by the addition of H two, O one (there is hardly space to put the requisite number of circles in a column of this width), or an amyloid by the subtraction of H two, O one. Slight though this difference may appear to those not accustomed to think of these matters, it completely changes the character of the compound in many respects.

For example, every one knows the difference in taste between starch, which is an amyloid, and Grape sugar, which is a glucose. What is the explanation of our sensations of taste and smell we do not at all know. But we possess them and trust to them. Taste tells us there is some difference between starch and sugar. In the process of digestion we transform starch to sugar.

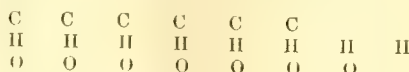
The "acids" which are found in various fruits have a chemical relationship not far removed from one another. For example, there is in Apples, Pears, and Rhubarb, &c., an acid called malic—



In Grapes, Pine-apples, &c., an acid called tartaric—



In Lemons, Gooseberries, Currants, &c., an acid called citric—



Yet a trained palate readily tells the difference in flavour. The change of flavour in the ripening of fruits much depends on a slight relative difference of the H and O present in each molecule.

That the difference of one O in a compound has in some cases most important influence may be illustrated by the difference CO and CO_2 .

We breath out CO_2 , candles and lamps give it off, and if we sit in a badly ventilated room we feel uncomfortable. But CO_2 is not "poisonous" to us, while CO is. A charcoal-pan in a room with no ventilation has been not infrequently used as an "end to the troubles of life." Again, plants can decompose CO_2 but not CO .

This apparently slight chemical difference between starch and sugar is accompanied by another. Sugar is soluble in cold water, starch is not. There is another known difference among the carbo-hydrates, to be mentioned immediately. A moment's consideration of the close connection between starch and sugar will show its bearings on the question of tuber formation. Starch is formed in the leaf, and it is a transient compound. (The recent work on this subject will be spoken of later.) Starch accumulates in the tuber in the form of granules; but it has been said to be not found in the stem. How does it get from the leaf to the stem?

Some cultivators and Potato dealers have spoken to me incredulously about the conversion of starch into sugar. I verily believe they have pictured to themselves some such kind of thing as a pound of starch neatly tied up to go home for stiffening frills and lace, and that no "Heigh, presto! quick, change!" could make it possible to find a pound of lump sugar on undoing the parcel. At any rate the notion of starch and sugar seems limited to the form in which they are in the habit of seeing them.

Now it is necessary to keep in mind the difference between a starch molecule, a starch cell, and a starch grain or granule.

From what has been said above about the size of atoms, it will be understood that a starch molecule formed of a group of atoms is *utterly* beyond the range of vision even with our highest microscopes. A vegetable cell is a visible object, and a starch cell simply means one that contains starch, or in which starch is being formed, not necessarily one "made up" wholly of starch. Granule or grain is used for the accumulated starch. *W. S. M.*

(To be continued.)

PLANT PORTRAITS.

BILBERGIA BREANTEANA X, André, *Gartenflora*, October.—A cross out of *B. vittata* by *B. pallescens*, with oblong, obtuse, dentate leaves and pendulous panicles of flowers, with oblong, crimson bracts and elongate blue flowers.

CORNUS STOLONIFERA, *Revue Horticole*, October 1.—Leaves oblong-lanceolate, paler beneath, berries blue.

MESOSPINDIUM VULCANICUM, *Revue de l'Horticulture Belge*, October.

HAMPSHIRE FIELD CLUB FUNGUS FORAY.

THE expanse of the New Forest is almost unknown to the predacious fungus hunter; until very lately it has never been thought about, and now the one element wanting is a local enthusiast who will set himself to work in good earnest to ascertain what treasures of fungi the New Forest region will furnish. It is all very well to have a day or two set apart once a year, and to invite down a few of those who love the sport, for a fungus hunt, but all the rest of the year is forgotten, and in this way the fungi of the Forest will not be explored till Doomsday. What a glorious spot for anyone devoted to the study to settle down upon in August, and keep it up till October, hunting in all directions day by day, over miles of wooded country, genuine forest and plantation, sketching away all the juicy days, and tramping all the dry ones! And what a budget of treasures he might hope to find for the delectation and astonishment of those who consume the autumn lolling on the beach, and throwing pebbles in the sea. Last year the Hampshire Field Club, at the instigation of the Rev. W. L. Eyre, of Swarrator, made their first effort at organising a fungus excursion in the Forest, and this year it was repeated, with still greater success. Although the crop of fungi was far richer than in the Forest of Dean, it was by no means equal to what it has been in some previous years, whilst better than last year. In 1887 only about 106 species were collected and recorded during the two days, but in 1888 no less than 171 species were determined, and of these sixty-eight species found last year were found again this year, whilst thirty-eight of those found last year were not seen this year at all. The first day's excursion (on Thursday, October 11), was made in Boldrewood, and Knightwood, or on the way thither, the Rev. W. L. Eyre and M. C. Cooke undertaking the determination and record of the species. The majority of the excursionists were interested chiefly in the esculent qualities of the "Toadstools" found. Not a Mushroom was seen, and all the specimens of *Lactarius deliciosus* were shrivelled and dried up, but *Hydnum repandum* was plentiful, and there were a few of the *Chantarelle*. Some of the most interesting to the novices were two or three large clumps of *Polyporus imbricatus*, the little *Hydnum auriscalpium* in profusion, the jelly-like *Tremellodon gelatinosum*, the Club of Hercules, *Clavaria pistillaris*, very large tufts of *Clavaria aurea*, *Cortinarius sanguineus*, and the delicate *Cortinarius albo-violaceus*; *Lactarius cyathula*, a rare species, found under Birch trees; and a very great quantity of very fine specimens of *Agaricus (Tricholoma) imbricatus*. At the close of the day the party returned to Southampton, when a meeting was held in the evening at the Hartley Institution, and the specimens collected during the day were displayed on the tables, and for about an hour Dr. M. C. Cooke demonstrated to the audience chiefly from the edible and poisonous species on the tables. The following day (Friday) was again devoted to the Forest, starting on foot from the Lyndhurst Road Station, through an enclosure, and thence following a stream towards Minstead. About fifty additional species were found on the second day, together with many of those recorded on the first. The first hour or two were spent in Fir plantations, where the species were comparatively few in number, but the individuals were numerous; *Russula exalens* everywhere, but it seems doubtful whether it is any more than a variety of the sulphur-gilled *Russula drimeia*. It was here that the *Tremellodon gelatinosum* was found. Dr. Quelet recommends this species as delicious if eaten raw, with a little sherry, after the manner of calf's foot jelly. Two or three specimens of *Coprinus picaceus* were collected during the two days, dripping with inky juice, and this led to the discussion of the proposal which has been made for the printing of bank-notes with the juice of *Coprinus*, that fluid consisting of spores of a definite size and form, can at any time be

detected by the microscope, and distinguished from the inorganic material of which printing ink is composed. The excursions were, on the whole, entirely successful, and a source of mingled astonishment and pleasure to those who had thus made their first experiment in fungus hunting. One of these was induced to taste a morsel of the biting *Lactarius rufus*, and found spitting a relief for some time afterwards. Others made a more pleasant and successful experiment with the Hedgehog Mushroom, *Hydnum repandum*, cutting it in slices and eating with their sandwiches, the prevailing opinion being that it was a decided improvement. The two days were mild, sunny, and thoroughly enjoyable; in fact, they were two as genial autumnal days as any fungus-hunter could desire. *M. C. C.*

HOME CORRESPONDENCE.

Correspondents will greatly oblige by sending early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

Photographs or drawings of gardens, or of remarkable plants, trees, &c., are also solicited.

HARDY HYBRID CRINUM POWELLI AND ITS VARIETIES.—This really beautiful and free-blooming perfectly hardy plant has been very fine in my garden this summer, and has excited the admiration of every one who has seen it. I planted one strong bulb when it was first sent out by Messrs. Henderson (I cannot exactly say how many years ago, but think it must be about seven or eight), and this has been left undisturbed in my garden border ever since, and has now increased into a clump of from ten to twelve strong bulbs, which sent up this summer no less than eighteen fine tall flower-spikes averaging 4 feet in height, though some of them were an inch or two taller, and each bearing a bunch of from twelve to sixteen beautiful deep rose-coloured flowers much more tubular than those of its parent *C. Moorei*, and closely resembling those of a *Belladonna*, only larger in size, and a brighter shade of colour. Whether the slugs have got tired of them or not I cannot say; but whereas in former years they used to browse almost nightly on the buds just as they were on the point of opening, this year, to my great satisfaction, they did not come near them. Of the other two varieties of this race of hybrids one may be called intermediate for distinction's sake, as it is of a much paler shade of pink than the type form, and though not so fully opened, is a more perfectly formed and evenly beautiful flower. Its stems also do not rise nearly so high, seldom exceeding from 2½ to 3 feet in height. Though I have quite as fine a stock of this variety, which I broke up and replanted two years ago, and which bloomed nicely for me last year, this year, for reasons quite unknown to me, it did not produce a single flower-spike, though its foliage was almost as healthy and vigorous as the others. The third variety, *C. Powellii* album, is, I think, quite one of the most beautiful hardy bulbs with which I am acquainted, as its shade of colour is so absolutely pure and free from any shade or tint of colour that it leaves nothing to desire. The form of its flowers has also the same evenness of perfection as exists in the pink variety, which it also resembles in its moderate height of flower-stem of about 2½ feet. It is unfortunately still very scarce, and commands a high price at the nurseries. My one bulb produced two fine spikes, each bearing from twelve to fourteen fine flowers, which were much admired. *W. E. Gunbleton.*

THE HAY CROP.—The favourable growing period experienced since the harvesting of the first crop of hay has induced a larger growth of aftermath than is usual in our meadows, and although the number of working hours when hay could be made has necessarily been few, yet the splendid, bright, mid-day sun of the present autumn has enabled much second-crop hay of good quality to be secured. Sir J. B. Lawes' twenty-four experimental grass-plots at Rothamsted, have yielded very variable quantities of aftermath, in accordance with their varying manurial supply, but in some cases as much as 3 tons of second-crop hay per acre has been obtained. And as the present season was unfavourable for the development of stem-growth and seed formation in the

first-crop, we find a correspondingly larger proportion of flowering stems sent up by the aftermath. This was more especially the case with *Avena elatior* (Oat-like grass), and *Holcus lanatus* (soft woolly grass), and among several of the Composite species of the weedy plants. *J. J. Willis, Harpenden.*

HELIANTHUS LÆTILORUS.—In order that an obvious error in plant names may not be perpetrated, I again trouble you with a note. "*C. S.*" tells us on p. 417 that "the Floral Committee evidently adopted the nomenclature of the Kew authority in preference to the name given by the Rev. Wolley Dod." But who is this authority who says that a plant which Asa Gray in September, 1887, named for Mr. W. Thompson, of Ipswich, *Helianthus latiflorus*, is now to be called *Harpalum rigidum semipennum*? Surely the authority of Asa Gray, who spent a great part of a long life in studying North American Composites, is not already superseded in that class? Of the identity of the species I have no doubt. The plants I am now distributing, some of which I gave to Mr. Ware, are part of the same stock from which the specimen was sent to Asa Gray, when last in England, and my plants answer to his description in every character (see *Flora of North America*, vol. i., part 2, p. 275). *H. latiflorus* has the disc yellow, not dark purple; it resembles tall forms of *H. rigidus*; it has the leaves thinner and more acuminate at both ends; it has the bracts of the involucre lanceolate attenuate acute, not ovate obtuse: they are imbricated in only two or three series, not pluri-serially. These are Asa Gray's characters of *H. latiflorus* contrasted with those of *H. rigidus*, and, when compared by these, the plants may be readily distinguished. There are other differences not mentioned by Asa Gray. The young buds of *H. latiflorus* have the disc quite covered by the bracts, the points of which meet in the centre, while those of *H. rigidus* have the centre of the disc uncovered. The outer bracts of *H. latiflorus* are often spreading, whilst all the bracts of *H. rigidus* are adpressed. The leaves of *H. latiflorus* are all more or less distinctly petioled, but those of *rigidus* are nearly or quite sessile. *C. Wolley Dod, Edge Hall, Malpas.*

POTATO WORTHINGTON SMITH: REVERSION TO ORIGINAL.—Amongst the Potatoes in the collection of Messrs. Sutton & Sons, of Reading, is one named Worthington Smith, raised about eighteen years ago, a cross between Early Coldstream and old Early Ashleaf. All the tubers produced by the cross were kidneys except one example—a distinct round, and this was preserved and named Worthington Smith. By the courtesy of Messrs. Sutton I have been allowed to grow this excellent early round Potato for the last four seasons, and the characters of all the examples planted have hitherto been quite permanent, the globular form being always very marked. A single plant has this year reverted and produced all true kidneys instead of round Potatoes. *W. G. S.*

REMOVING THE HAULM OF POTATOS.—Has the question of removing the haulm been worked out? Some few years ago it was advised (I believe in the *Gardeners' Chronicle*) to remove the haulm on or before the appearance of disease; and by this simple plan the crop would certainly be secured. In consequence of the garden here being wet and cold, and the soil a tenacious clay, the growth of late Potatoes was long since abandoned. My remarks, therefore, refer only to early and mid-season varieties. Before disease has made any great advance the tops are drawn clean out by hand, without disturbing the tubers, which is effected by the men placing their feet on each side of the haulm. The Potatoes are then left for the skins to get set before lifting, which may be done at the convenience of the grower. They will never take the disease so badly without the haulm as if that be left on them. I drew the top of Veitch's Ashleaf about the third week in July; of Beauty of Hebron and Early Rose the last week in that month; of Vicar of Laleham in the first week in August. By the time the disease became general I had not a leaf or stem of Potato in the garden, but the crops when taken up consisted of fair-sized tubers. Early pulling of the haulm enables the gardener to put in his winter Kales, Savoys, Broccoli, &c., between the Potato rows in good time. My neighbours predicted that the Potatoes would not keep well, some thinking they would take the disease, but they are at present all right. I must admit that a few are rotten—perhaps 1 per cent. I attribute this to the fact that some of them were growing, or rather lying in a saturated soil for some time before

they were lifted. On p. 274 it is stated that the farmers in Lincolnshire have good crops of Potatoes, also that many of them cut off the haulm: perhaps their success may be due to this practice. *Geo. Wall, Brockspears, Uxbridge.*

DISEASE RESISTING POTATOS: THE TRUE REMEDY.—Probably on no other subject of equal importance can so many and so diverse views be propounded, with the chance that—like the colour of the chameleon—"all may be right and all may be wrong." What might have been right last year—one of the driest seasons on record—would indubitably be quite wrong this year—one of the wettest, during the critical months of June, July, and August, for this crop. This applies to varieties, too; so I quite agree with Mr. A. Dean (p. 302), that it may be injudicious to invite opinions as to what kinds resisted disease best. Having so frequently intruded on your columns on this subject—it is of vital importance in Ireland—I will avoid reiteration, and give my experience to prove the fact that other circumstances than "variety" must be considered. I had about thirty varieties from Messrs. Sutton, Carter, Laxton, and others, most of them not yet in commerce, in an experimental plot. Among the number was Sutton's Abundance—probably one of the most vigorous growers and heavy croppers in existence; three out of ten received from Mr. Laxton, of Bedford, are similar; and the same vigour and prolific qualities apply to Carter's King of the Russets, Scottish Queen, and, of course, to the well-known Champion. The soil of the plot was rich, but I added some stable manure when planting, and I had also the misfortune to plant a couple of drills of Inglis' White Fortyfold, Victorias, and Regents. Most people know those varieties are very prone to disease in a moist season. Those varieties got diseased after the Ashleaf Kidneys, and in a few days every leaf was affected, and then the stems. The disease rapidly spread to the aforementioned (customary) disease resisters, and they offered practically no resistance to the progress of the disease. When dug up, not a tuber of the Fortyfold was sound, and the Victorias were not much better. Abundance, which had enormous stalks and foliage, and which was perfectly free from disease last year, had 60 per cent. of the tubers rotten; and other reputed disease resisters were similarly affected. Now, let us examine the field crop. In this field there were many of the foregoing varieties also, but the largest breadths were under Hero, Magnum Bonum, Scottish Queen, Beauty of Hebron, and Scotch Champion. I have lifted roots here and there of those, and up to the present—though the stalks were diseased and withered more than a month since—I have found but one diseased tuber. This is, to my mind, very remarkable and suggestive. There is hardly any difference of soil or situation between the experimental plot and the farm, and, as I said, the same varieties badly diseased in the former are almost wholly free in the latter. I attribute this result to a considerable extent to two causes:—1. Owing to an alteration I had to make in my rotation of crops, the farm Potatoes followed a manured Turnip crop—very unusual; but owing to the persistent drought last year, I had hardly any Turnips; instead, therefore, of manuring the same field two years in succession, I had about a thousand loads of compost—a considerable fraction of which was lime—and this I used for the Potatoes, with the consequence of almost complete immunity from Potato disease. This result seems exactly to confirm Mr. A. Dean's views (p. 302, *Gardeners' Chronicle*):—"As is usually the case, the worst evidences of disease are found in the highly manured soils." 2. The bad results in the aforementioned experimental plot I consider partly owing to the manuring, but still more to the fact that this same plot has been (owing to convenience) used for Potatoes several years successively, and it is more than likely the spores of disease remained in the soil awaiting only favourable circumstances to reappear, moisture being an indispensable agent. From this it may be inferred that when manure is used for the Potato crop it should be specially prepared, and, if of rich quality, largely mixed with lime, loam, &c., to avert in a measure too luxuriant sappy growth. Another recommendation—and that I have called the "true remedy"—struck me lately when visiting Messrs. Dickson's, of Newtownards and Belfast, and a large Potato grower in Scotland. It is now a month since, and both had considerable stocks of Potatoes then saved; that is, they lifted and stored them the second week in August. They found, as most growers will, that such varieties as Beauty of

Hebron, Second Early, Dickson's Northern Queen (put in commerce, I believe, this year), and in Scotland The Don, are ripe and with the skin "set" at that time; and they find, moreover, that disease has not reached the tubers. I asked Messrs. Dickson if they lost any by storing thus early, and I was assured that none were lost. Well, then, if we can grow any second early variety that can be lifted and stored before disease can seriously affect them, are we not on the right road to defy the disease? I submit this point has not received as much attention as its importance merits. *W. J. Murphy, Clonmel, September 11.*

LATE FLOWERING ICELAND POPPIES.—All lovers of hardy flowers are well acquainted with the beauty of the Iceland Poppies and I am pleased to observe that they are getting as popular as the Canterbury Bells and Wallflowers. Indeed these charming Poppies should be largely grown where cut flowers are wanted for indoor decoration. I have now before me some slender specimen glasses loosely arranged with bud and flowers, ranging from the purest satiny-white and yellow to the deepest glowing orange-scarlet. What can be more beautiful than an arrangement of these elegant Poppies in various shades with their own buds and foliage? I enclose a few blooms, just to give you an idea how splendid these Poppies are, which, notwithstanding the fact that the flower season is over and all their companions completely destroyed by the recent sharp frost, are still making a grand show. *C. S.*

IRISH YEW.—We have a large upright Yew tree here, it is in perfect health; the height is 33 feet, and the circumference at 15 feet from ground 58 feet. I enclose a small photo of it, and should like to know if there are many in the country larger. *Wm. Allan, Seaford, Clough, co. Down.*

THE FERNS AT THE RECENT MEETING OF THE ROYAL HORTICULTURAL SOCIETY.—The group of Ferns shown by Mr. H. B. May, of Upper Edmonton, on October 9, numbered upwards of 200 species and varieties, and generally stood several plants together in one pan to show off the characteristics of the species or variety better than single plants would do. Of *Adiantums* there were from forty to fifty different varieties, including several that were new and beautiful, viz., *A. elegans*, which resembles *A. cuneatum*, but has a rather larger frond, with long stipes. It is likely to become a very popular market plant, and is especially good for cutting. Several of the market growers have already commenced growing it in preference to *A. cuneatum*. *A. fragrantissimum* is another beautiful form. *A. Williamsii*, now a favourite for cut fronds, the pale green colour being much appreciated. *A. mundulum*, *A. Pacottii*, and *A. Legrandii*, dwarf compact varieties—distinct and valuable. *A. Reginae* is a very fine variety, intermediate between *A. Victoria* and *A. scutum*, and has the broad deep green pinnales of the former, and more of the habit of the latter; it forms a bold and effective plant. *A. cuneatum grandiceps* is a very prettily tasselled form, and *A. Weigandii* forms a pretty and compact plant. Among sorts remarkable for their brightly tinted foliage may be mentioned:—*A. Veitchii*, *A. tetraphyllum gracile*, a perfect gem, but rather scarce at the present time; *A. rhodophyllum*, *A. rubellum*, *A. macrophyllum* and its variety, *A. m. bipinnatum*, were also well shown. Of larger growing varieties, *A. pentadactylon*, *A. Sancta Catherinae*, *A. trapeziforme* were conspicuous. *A. formosum* and *A. cardiochlena* may also be mentioned. *A. Farleyense* was shown in good condition, and the young fronds had the distinguishing bright pink tint. Several good varieties of *A. Capillus-veneris* were shown, including the beautiful *A. Raperi*, or *A. Mariesii*, as it is frequently named; *A. C.-v. magnificum*, *A. C.-v. daphnites*, *A. C.-v. cornubiense*, and the curious little *A. C.-v. fissum* were all worthy of notice. Before leaving this genus I must mention the pretty little *A. reniforme*, *A. curvatum*, *A. dolabriforme*, and *A. caudatum* (*A. Edgworthii*), two very pretty Ferns for baskets. *Aspleniums* were well represented, about eighteen sorts being shown, the most conspicuous being *A. laxum pumilum*, *A. cicutarium*, *A. formosum*, *A. neo-caledonicum*, *A. Belangerii*, *A. flaccidum*, *A. lucidum*, and several varieties of the *A. bulbiferum* type. The *Cheilanthes* were represented by good specimens of *C. elegans*, *C. hirta Ellisia*, and *C. tomentosa*. About a dozen species and varieties of *Davallias* were shown, the most conspicuous being *D. Mooreana*, a fine plant of which occupied the centre of the group; the beau-

tiful *D. fijiensis plumosa*, *D. elegans*, *D. tenuifolia Veitchii*, *D. foniculacea*, *D. Griffithiana*, with conspicuous silvery-grey rhizomes and deep green foliages, may be regarded as one of the best of the genus; *D. Tyermanni*, another pretty species similar to the above but of smaller growth, and a fine variety of *D. canariensis*, were worthy of notice. Of *Lastreas* several beautiful species were shown; *L. aristata variegata*, *L. erythrosora*, remarkable for its bronzy-tinted fronds; *L. patens*, of graceful habit, and the pretty little *L. glabella*, were likewise worthy of note. Of *Gymnogrammas*, good forms of both the silver and golden varieties were observed; *G. Alstonii* was the most conspicuous of the latter. In this variety the under surface is covered heavily with bright yellow mealiness, and the pinnales are curled inwards at the extremities, showing off the under surface to much advantage. *G. peruviana argyrophylla* was the best silver variety. Good crested forms were seen in *G. Parsonsii* (golden), and *G. Wettenthaliana* (silver). *Nephrolepis*, another beautiful genus, was well represented, and some fine seedling forms were remarked of *N. davallioides furcans*, *N. rufescens tripinnatifida*, a recent addition to this genus, which should become a favourite; *N. Bausei*, another elegant variety; and *N. acuta*, a bold habit and effective Fern for baskets, and suspending generally; *N. Duffi*, *N. pectinata*, and several others were shown. Numerous beautiful species and varieties were shown of variegated *Pteris*, viz., *P. tricolor*, in beautiful condition; *P. aspericaulis*, remarkable for its deep bronzy hue; *P. argyrea*, *P. nemoralis variegata*, similar to the last named, but of dwarf habit, and the young fronds of a reddish hue; *P. cretica Mayii*, and the dwarf-crested variety of *P. albo-lineata*, which has often been alluded to, was seen in good form. The dwarf-crested form of *P. serrulata* (May's variety) was also good, as was the Chiswick variety of the major form. *P. umbrosa* (the true variety), *P. leptophylla*, *P. tremula*, and several pretty varieties of this useful Fern were included, besides many others. The other interesting genera exhibited were, *Anemidictyon phyllitidis*, a pretty little Fern, the fertile portion of the fronds standing up from the base of the fronds in flower-like fashion; *Osmunda palustris*, *Onychium japonicum*, and the beautiful *Onychium auratum* may be included among the most elegant of all Ferns; *Dictyogramma japonica variegata*, a pretty variegated Fern, with fronds of good substance; *Doryopteris palmata*, a good variety of *Lomaria gibba*, *Microlepia hirta cristata*, *Phlebodium glaucum* (*P. sporodocarpum* of some), was very pretty; *Actinopteris radiata*, a little gem with small Palm-like fronds; *Pellea rotundifolia* and *P. ternatifolia* are also worthy of note. *Pteris*.

TOMATOS RECOVERING FROM DISEASE.—You will doubtless remember me writing to you some six weeks since *re Tomatos* diseased, and I sent you some of the foliage and fruit. You recommended pulling them out and burning them. I did not take your advice, but at once put some 4-inch hot-water pipes into the house and treated the plants for the disease; and I am pleased to say that they have recovered, and by this post I have sent you a sample of the fruit, which hang in clusters on the plants. *F. Cuse.* [The plants must have recovered in an unusual manner from the attack of *Peronospora lycopersici* under the warmer treatment adopted to have produced such fine samples of fruits as those sent with the above note. *Ed.*]

LONG-LIVED CUCUMBERS.—Referring to my recent note about the house of long-lived Cucumbers at Belton Park, it may, by way of reply to Mr. Froud (p. 447), be interesting to state that, if my memory does not deceive me, the plants referred to were, I was informed by Mr. Sage, the gardener, raised from seed and not from cuttings, as was your correspondent's. I certainly did express surprise, and justly so, for after visiting several gardens of repute during the past summer, it was the best house of Cucumbers I had seen, summer or rather spring-planted ones included. Thus it is obvious that to keep Cucumber plants in full bearing for more than a year is no mean performance, although Mr. Froud eclipses that by doubling the time, which reflects credit upon him as a grower of Cucumbers. Here, however, although it may be digressing from the point, the question arises, which is the most conducive to a lengthy period of fruitfulness—plants raised from seed or cuttings? Personally, I am in favour of the latter, and should always raise plants by that means. It is a simple matter to do—in fact, with the aid of a little bottom-heat nothing is

simpler to strike than a Cucumber plant. Although Mr. Froud proved his proficiency as a Cucumber grower by keeping them in perfect health and productiveness for the period of nearly two years, it by no means proves that it is an advisable plan to follow generally. *C. Collins.*

SOCIETIES.

ROYAL HORTICULTURAL.

OCTOBER 23.—The exhibits at the meeting held at the Drill Hall last Tuesday were extremely few, and made the smallest of the season, no large groups being shown by the nurserymen. Messrs. J. Veitch & Son contributed a few plants; Mr. W. Holmes, Mr. Stevens, and Mr. Owen Chrysanthemums; and an interesting hybrid Orchid came from Mr. Ballantine. Exhibits of fruits and vegetables were also few.

Floral Committee.

Present: G. F. Wilson, Esq., in the chair, and Messrs. Shirley Hibberd, W. Goldring, H. Herbst, W. Bates, W. Holmes, R. Dean, C. Pilcher, J. Dominy, H. Ballantine, H. M. Pollett, J. O'Brien, Rev. W. Wilks, E. Hill, T. Baines, G. Duffield, and J. Fraser.

A few plants and cut blooms of new and recent varieties of Chrysanthemums were shown by Mr. W. Holmes, Frampton Park Nurseries, Hackney. Lincoln's-Inn, a Japanese reflexed flower, pretty dull crimson-brown and yellow below; and Sunflower, a bright yellow large Japanese, were Certificated—the latter being a particularly pretty flower: the petals are rather narrow and of good length. He also had good specimens of Quintus, a lilac Japanese variety; Sabine, a light yellow Japanese Anemone; Nelson, lake; Japanese Anemone, and Feu de Bengale, a pale red-brown Japanese, the tips yellow, and making a large head.

Messrs. J. R. Pearson & Sons, Chilwell, Notts, showed good flowers of C. Delmas, dull brown-red, broad segments reflexed, and a plant of Capucine, with pale yellow-terra-cotta coloured flowers (Japanese), very pretty and effective, and which was noticed by the committee as a good early flowering decorative variety which it certainly seemed to be.

Blooms of Chrysanthemum Wagstaff (a good full white Japanese), and Edwin Molyneux, also Japanese, with broad curled petals, rich crimson-red, with dull yellow below were well shown by Mr. G. Stevens, Putney, S.W.

Mr. R. Owen, Castle Hill Nursery, Maidenhead, showed a stand of some very good blooms, Lincoln's Inn and Magicienne being the best. The latter is a bronzy-orange coloured Japanese of large size, and very attractive. Others were Miss Burgess, bright lilac Japanese; Mons. Ch. Souchet, like Lincoln's Inn, but brighter yellow below; Thomas Stevens, white, suffused with lilac—Japanese; and Comte Horace de Choiseuil, reflexed broad white segments.

Mr. H. Jackson, gr. to S. A. Ralli, Esq., had a large cluster of *Lapageria alba*; and from the garden of G. F. Wilson, Esq., there came a white form of *Primula capitata*.

Messrs. Seeger & Tropp, The Nurseries, East Dulwich, had a *Cypripedium* named C. Seegerianum ×, stated to be a hybrid between C. Spicerianum and C. Harrisianum. The dorsal sepal is almost round, white, with a deep lilac median line, and a few lines of the same colour on each side, greenish at the base. The petal, about 1½ inch long, slightly longer than the sepal, light brownish-green, with a dark line running through the centre, spotted at the base with brown-purple and hairy along the margin, the lip projects forwards, green at the bottom and lake-brown over the rest; staminode livid lilac.

Mr. E. Crook, gr. to G. H. Baxter, Esq., Hutton Park, Brentwood, had a very richly-coloured piece of *Odontoglossum Insleyi splendens*, the spike bearing five large flowers. *Oncidium Mantinii* was also shown by the exhibitor, and again by Messrs. J. Veitch & Sons, Royal Exotic Nursery, Chelsea, S.W. The flower is of the crispum form, the lip being yellow, with several brown spots distributed irregularly on it; the two petals brown, with a yellow border, the sepals being brown.

Messrs. Veitch also contributed hybrid greenhouse *Rhododendrons*, Yellow Perfection bearing bright primrose-yellow coloured flowers (its parentage is *Teysmannii*), and Lord Wolseley, the latter being the seed-bearer. *Rhododendron Brunette* was also shown: It is pale Indian-yellow, tinged with red—very pretty—and has six or seven segments in the

corolla. They also had a plant of *Alocasia Chantrièrei*, which has leaves about 12 inches long by 6 inches broad, with a wavy outline, dark green, with metallic white stripes running along the chief nerves.

A remarkable hybrid Orchid came from the gardens of Baron Schroder, The Dell, Egham (gr. Mr. Ballantine). It is the result of crossing *Cattleya citrina* and *C. intermedia*. The plant shows its hybrid origin in all its particulars; the pseudobulb is covered with a white skin as in *citrina*, but is longer and narrower than in that species. The habit and leaves are quite intermediate, and the flowers are drooping, but in colour are rosy-white, the lip being pale rose on the centre lobe, and possesses an aroma of Roses. The form of *C. intermedia* is discernible here, but the segments are closed inwards. The plant bore two flowers and is called Lamberhurst hybrid. *C. Harrisii*, a cross between *C. Mandelli* and *C. Leopoldi*, was also shown; the segments are lilac slightly veined, the lip white externally and folding over the column, the median lobe is of an intermediate form, fringed slightly, large for the flower and deep bright purple, and the side lobes are of the same colour. The bloom is of fair size and open.

From the Royal Gardens, Kew, there were fruits of the Snake Gourd (*Trichosanthes anguina*), a Chinese plant, and of the Tree Tomato (*Cyphomandra betacea*), illustrated by us in a former issue.

FIRST-CLASS CERTIFICATES.

Chrysanthemum Lincoln's Inn, from Mr. W. Holmes.

Chrysanthemum Sunflower, from Mr. W. Holmes.

Chrysanthemum Lincoln's Inn, from Mr. Owen.

Chrysanthemum Magicienne, from Mr. Owen.

Chrysanthemum Edwin Molyneux, from Mr. G. Stevens.

Chrysanthemum Capucine (as an early-flowering decorative variety), from Messrs. J. R. Pearson & Sons.

Cattleya Harrisii, from Baron Schroder.

Cattleya Lamberhurst Hybrid, from Baron Schroder.

Oncidium Mantinii, from Mr. E. Crook.

Oncidium Mantinii, from Messrs. J. Veitch & Sons.

Rhododendron Yellow Perfection, from Messrs. J. Veitch & Sons.

Fruit Committee.

Present: H. Veitch, Esq., in the chair; and Messrs. P. Crowley, G. W. Cummins, R. D. Blackmore, J. Willard, J. Smith, W. Denning, J. Cheal, P. Barr, and W. Marshall.

Mr. Cook, Farnborough Grange Gardens, Herts, staged a small collection of fruit in fair samples, the most noticeable being Blenheim Orange, Barker's Seedling, Cox's Pomona and Alfriston, Apples; Doyenné du Comice, Conseiller de la Cour, Pitmaston Duchess, and Beurré Diel, Pears; and Coe's Golden Drop Plum. A dish of very finely-coloured Duchess Favourite Apple was shown by Captain Terry, Shrubland, Walton-on-Thames; and four varieties of Damsons came from Mr. J. Smith, Mentmore Gardens, Leighton Buzzard; they were Farleigh and Shropshire (small fruits), and Worcestershire and Prune (large fruits).

Mr. Smyth, Basing Park Gardens, Alton, sent seedling Grapes; and Messrs. J. Carter & Co., High Holborn, had tubers of *Stachys tuberosa*, to which attention is called elsewhere.

Potatoes were shown by Mr. W. Ellington, West Row Gardens, Mildenhall, and by Mr. A. Selby, Radcliffe-on-Trent, Notts—the latter staging very large and clean tubers of Reading Giant, Sutton's Abundance, and Satisfaction; while Mr. Ellington had a cross between Vicar of Laleham and Schoolmaster, which was named Market Favourite; it is wedge-shaped, and has a yellow skin, spotted and blotched with purple.

BIRMINGHAM GARDENERS' MUTUAL IMPROVEMENT ASSOCIATION.

At a largely-attended meeting of this Society, held at the Midland Institute on Tuesday evening, October 16, Mr. W. B. Latham, Curator of the Botanical Gardens, Edgbaston, occupying the chair.

Mr. G. Barnes, Orchid grower to C. Winn, Esq., The Uplands, Selby Oak, read a very instructive paper on the cultivation of the *Odontoglossum* and *Miltonia*. In building a house for the purpose of growing these lovely flowers, he specially recom-

mended the choice of a south aspect, with plenty of top and bottom ventilation and light which can be removed in the summer months. Abundance of piping is another essential point to be observed, so that the temperature can be maintained in severe weather without creating that dry choking atmosphere, so often the result of over-heated pipes. Apply a light shading and keep a moist atmosphere in the summer months, and by no means a dry one in the winter, but in watering care must be taken not to wet the young growths, likewise to give a little air at all times even in the severest of weather. Potting operations he recommended to be done at the end of the summer just as they are commencing to grow—August and beginning of September being the most suitable time, but it should not be done on hot dry days, rather choosing dull moist weather, and so avoid that drying of the roots which so often proves injurious to this class of plants; sphagnum cut about 2 inches long, and good sandy peat in equal proportions, being the best material for the purpose; the pots should be two-thirds filled with crocks, the plants potted firm, and care should be taken to avoid the young growths when watering; but in all things in connection with the cultivation of the *Odontoglossum* a little variation may be necessary according to the varieties to be dealt with, an intimate knowledge of which can be best obtained by the close observation of the cultivator.

A brief discussion followed the observations of the speaker, being mainly in support of Mr. Barnes' system of cultivation.

On this occasion Messrs. Sutton & Sons, Reading, exhibited a very fine collection of their seedling Potatoes, these being remarkable for their size, shape, and smoothness; and, what is of the greatest importance, the majority of them are said to be disease resisting. The most notable amongst those that have been already sent out are—Ringleader, as the best early; Sutton's Seedling, the best second; and Abundance, as the best late variety. A newer variety called Satisfaction, is likewise one of great promise. The seedling varieties not yet in commerce were very fine indeed, and showed what can be done by the careful study and observation of the various crosses.

NATIONAL CHRYSANTHEMUM.

FLORAL COMMITTEE, October 24.—A meeting of this body took place at the Royal Aquarium on the above date, Mr. E. Sanderson, in the chair, there being a good attendance of members.

From Mr. W. Holmes, Frampton Park Nursery, Hackney, came the very fine yellow Japanese Sunflower, bright deep gold, large, striking, and a great addition to this section (First-class Certificate); Nelson, Japanese Anemone, rosy-purple, flushed with magenta, very fine and distinct (First-class Certificate); Sabine, Japanese Anemone, pale yellow guard petals and deep yellow centre—the first yellow flower in this section; the committee wished to see this again. Also a basket of reflexed large-flowered Martinaz, pink, tinted with lilac—very pretty and pleasing; and some others.

From Mr. Jno. Doughty, gr. to Mrs. M. Tomlin, Angley Park, Cranbrook, came incurved Violet Tomlin, a sport from Princess of Wales, large, full, and of a deep lilac colour, shaded with purple; and also May Tomlin, a sport from the Japanese Middle. Paul Dufour, reddish-cinnamon, shaded with purple (Commended). This will, no doubt, receive a higher award when the sport is quite fixed.

From Mr. W. R. Woodcock, Oakbrook Gardens, Sheffield, came a seedling, incurved, named Mr. Woodcock, creamy-white, with sulphur centre (Commended). It will no doubt be seen later in better form.

From Mr. G. Stevens, St. John's Nursery, Putney, came white Japanese Florence Piercey, very pleasing. Awarded a vote of thanks.

From Mr. R. Owen, Castle Hill Nursery, Maidenhead, came several new varieties, among them Japanese Magicienne, in the way of Criterion, but of a shaded orange colour, very fine and distinct (First-class Certificate); Lincoln's Inn, orange-cerise, the reverse gold, a reflexed Japanese, of a promising character (Commended); and Pompon Maggie, white, with a slight tint of lilac, in the way of White Trevenna. A Commendation was awarded, the committee desiring to see it again in comparison with White Trevenna. Mr. Owen had several other varieties, and a vote of thanks was awarded.

From Mr. W. Piercey came incurved Japanese Sam Henshaw, a very promising early variety—

colour purplish-magenta, with silvery reverse. (Commended as an early decorative sort.)

From Messrs. Davis & Jones, nurserymen, Camberwell, came incurved large-flowering H. Shoemith, a bright golden-bronze sport from Mr. Bunn—a great acquisition. (First-class Certificate.)

From Messrs. James Veitch & Sons, Chelsea, came Gladys Spaulding, a large Anemone-flowered variety, orange-cinnamon guard florets and primrose centre—a promising flower; H. A. Gane and The Moor, a bright maroon-crimson reflexed. Awarded a vote of thanks.

From Messrs. J. Laing & Co., Stanstead Park Nursery, Forest Hill, came Japanese Stanstead Surprise, a large flat petalled variety in the character of Baron Frailly, bright ruby-red—very fine and distinct. (First-class Certificate.)

From Mr. Boyce, Archway Road, Highgate, came Japanese Anemone Miss Mary, lilac-pink, with sulphur centre.

It was a meeting full of interest for Chrysanthemum growers.

Obituary.

W. H. CRAWFORD.—It is with great regret that it falls to my lot to record the death of this fine old Irish gentleman, which took place at his residence, Lakelands, near Cork, on the night of Thursday the 18th inst. Mr. Crawford was born in 1812, so that he was seventy-six at the time of his death. Born to great wealth, he used it liberally in enriching his native city and her best institutions. To the church of Ireland he was a staunch supporter, while the Queen's College, the schools of art, the cathedral, and other public institutions were recipients of his bounty. He visited the County Club on Thursday, the day of his death, and saw his physician there, who prescribed for him. He returned home and dined as usual, and was last seen alive by his servants as he sat reading in his chair, before they retired to rest.

On Friday morning he was found dead in his chair, the immediate cause being heart disease. Mr. Crawford was never married. Dignified in manner and of a retiring disposition, he had eyes and ears for all that took place around him, and his loss to his native city will not be readily replaced or forgotten. People of all callings and creeds within hearing of the beautiful "bells of Shandon" will mourn for the loss of a great man, and a benevolent friend.

Lakelands is a fine old house, richly stored with rare books, pictures, engravings, &c., while the surrounding grounds are richly planted with a perfect arboretum of rare shrubs and trees from all temperate parts of the world. Here the magnificent *Magnolia Campbelli* flowered for the first time in the open air, the tree being 30 or 40 feet in height. At the entrance to the mansion stand two large tubs of *Philæa buxifolia*, enormous masses, each 4 or 5 feet in diameter. Rare trees and shrubs from the Himalayas or Andes meet one's eyes at every turn, while extensive ranges of hothouses and greenhouses are stored with rich collections of Orchids and other choice exotics. The collection of Brownes here is one of the finest in existence, and there is a large house of rare Himalayan *Rhododendrons* and other shrubs not often seen in cultivation. Some years ago W. E. Gumbleton, Esq., took me to see Mr. Crawford, and the plants of which he was so fond. It was a cold wintry day, but we were welcomed and shown all over the place by the owner, whose face shone with delight as one after another of his floral treasures drew forth some exclamation of surprise.

But few amateurs have followed gardening pursuits with the energy and success which rewarded Mr. Crawford—few, indeed, could afford to do so; and it is to be hoped that his successor at Lakelands will respect the results attained at much trouble and expense in one of the finest climates in the British Islands. B.

MRS. EYRE CRABBE.—On the 12th inst., at Bel-lagio, Italy, whither she had gone but a short time previously for the benefit of her health, at the age of

seventy-seven years, this well-known and estimable patron of horticulture, died. Mrs. Crabbe had in her beautiful place, Glen Eyre, near Southampton, a singularly lovely garden, replete with choice trees and shrubs, and laid out with great taste. Probably no garden in the kingdom are Camellias seen in such plenty and in such luxuriant growth in the open, whilst numerous other things, ordinarily esteemed tender, thrive. There also Mrs. Crabbe had the most entire confidence in the hardness of the Camellia, and her confidence is at Glen Eyre amply justified. Fifty years ago, then Mrs. Spooner, of Southampton, Mrs. Crabbe was one of the most active patrons of the old Hampshire Horticultural Society, and had for an ordinary competitor the late Canon Meadows, of Stoneham, and some other clerical horticulturists.

THE WEATHER.

[Accumulated temperature indicates the combined amount and duration of the excess or defect of temperature above or below 32° F. for the period named, and is expressed in Day-degrees—a 'Day-degree' signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.				
	Above or below the Mean for the week ending Oct. 22.	ACCUMULATED.			
		Above 42° for the week.	Below 42° for the week.	Above 42° difference from Mean since Jan. 3, 1888.	Below 42° difference from Mean since Jan. 3, 1888.
Principal Wheat producing Districts.		Day-deg.	Day-deg.	Day-deg.	Day-deg.
0. SCOTLAND, N. ...	2 above	36	0	-288	+232
1. SCOTLAND, E. ...	3 above	42	0	-502	+176
2. ENGLAND, N.E. ...	1 below	34	3	-565	+101
3. ENGLAND, E. ...	5 below	47	20	-430	+217
4. MIDLAND COS. ...	4 below	47	20	-521	+215
5. ENGLAND, S. ...	3 below	50	8	-531	+245
Principal Grazing, &c., Districts.					
6. SCOTLAND, W. ...	2 above	43	0	-408	+116
7. ENGLAND, N.W. ...	1 below	42	3	-442	+133
8. ENGLAND, S.W. ...	1 below	53	0	-586	+272
9. IRELAND, N. ...	2 above	53	0	-327	+73
10. IRELAND, S. ...	2 above	63	0	-333	+127
— CHANNEL ISLANDS	2 below	72	0	-407	+154

DISTRICTS.	More or less than the Mean for the week.	RAINFALL.		BRIGHT SUNSHINE.	
		No. of Rainy Days since Jan. 3, 1888.	Total Fall since Jan. 3, 1888.	Percentage of possible Duration for the week.	Percentage of possible Duration since Jan. 3, 1888.
Principal Wheat-producing Districts.	Tenths of Inch.		Ins.		
0. SCOTLAND, N. ...	3 less	189	30.8	13	28
1. SCOTLAND, E. ...	6 less	160	22.2	13	30
2. ENGLAND, N.E. ...	6 less	148	20.7	21	29
3. ENGLAND, E. ...	6 less	152	19.8	49	30
4. MIDLAND COS. ...	7 less	135	19.0	38	28
5. ENGLAND, S. ...	7 less	139	20.6	42	30
Principal Grazing, &c., Districts.					
6. SCOTLAND, W. ...	10 less	151	30.5	19	31
7. ENGLAND, N.W. ...	10 less	151	21.9	28	29
8. ENGLAND, S.W. ...	10 less	155	25.7	41	36
9. IRELAND, N. ...	7 less	161	27.7	31	28
10. IRELAND, S. ...	8 less	143	26.9	29	33
— CHANNEL ISLANDS	8 less	173	23.0	63	41

MEAN TEMPERATURE OBSERVED AT CHISWICK DURING THE WEEK ENDING NOV. 3. (AVERAGE OF FORTY-FOUR YEARS.)

Oct. 28 ...	46°·6	Nov. 1 ...	45°·7
„ 29 ...	46°·4	„ 2 ...	45°·5
„ 30 ...	46°·2	„ 3 ...	45°·4
„ 31 ...	45°·9	Mean for the week ...	46°·0

THE PAST WEEK.

The following summary record of the weather for the week ending Oct. 22, is furnished from the Meteorological Office:—

"The weather has remained fair and dry in all but the extreme western and northern parts of the kingdom. Over England, however, thick fogs and heavy dews have occurred nightly.

"The temperature has been 2° or 3° above the mean in Ireland and Scotland, but below it in all the English districts. In 'England, E.' the deficit has amounted to 5°. The highest readings were observed, as a rule, between the 18th and 20th, when the thermometer was a little above 60° in nearly all parts of Ireland and England. The lowest readings, which were registered on various dates, ranged from 23° in 'England, S.W.' (at Llandoverly), and 25° in 'England, E.' to 37° in 'Scotland, E.' and 38° in the Channel Islands. Over eastern and central England frost was experienced on most nights.

"The rainfall has been entirely absent in 'England, E.' the Midland Counties, and 'England, S.,' and 'England, N.W.,' and very much less than the mean in all other districts. At some of the English stations, however, the heavy dews and fogs have occasionally yielded measurable amounts of water in the gauges.

"Bright sunshine has been, upon the whole, less prevalent than it was last week. The percentage of the possible quantity has ranged from 13 in the north and east of Scotland to 42 in 'England, S.,' 49 in 'England, E.,' and 63 in the Channel Islands."

MARKETS.

COVENT GARDEN, October 25.

PRICES unaltered; trade quiet. *James Webber, Wholesale Apple Market.*

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Aralia Sieboldi, doz. 6 0-18 0	Ferns in var., doz. 4 0-18 0
Asters, per dozen ... 6 0-9 0	Foliage plants, various, each ... 2 0-10 0
Chrysanthemums, doz. 4 0-9 0	Ficus elastica, each 1 6-7 0
— large plants, each 2 0-4 0	Fuchsias, doz. ... 3 0-6 0
Cockscombs, per doz. 3 0-6 0	Heliotropes, dozen ... 3 0-6 0
Coleus, dozen ... 2 0-4 0	Hydrangeas, dozen ... 9 0-18 0
Cyperus, per dozen ... 4 0-12 0	Liliums, var., doz. ... 18 0-30 0
Dracena terminalis, per dozen ... 30 0-80 0	Marguerites, doz. ... 6 0-12 0
— viridis, per doz. 12 0-24 0	Mignonette, 12 pots 3 0-6 0
Ericas in var., doz. ... 9 0-18 0	Palms in var., each 2 6-21 0
Eucalyptus, in var., per dozen ... 6 0-18 0	Pelargoniums, scar. let, per dozen ... 2 0-6 0
Evergreens, in var., per dozen ... 6 0-24 0	Primulas, per dozen 4 0-6 0
	Solanums, dozen ... 9 0-15 0

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Abutilons, 12 bun. ... 3 0-6 0	Marguerites, 12 bun. ... 3 0-6 0
— French, per bun. 1 6-2 6	Mignonette, 12 bun. 2 0-4 0
Bouvardias, per bun. 0 6-1 0	Pelargoniums, 12 spr. 1 0-1 6
Camellias, 12 blms. 3 0-4 0	— scarlet, 12 spr. ... 4 0-8 0
Carnations, 12 blms. 2 0-3 0	Primulas, double, 12 sprays ... 1 0-1 6
Chrysanthemums, 12 blooms ... 0 6-3 0	Pyrethrums, 12 bun. 2 0-4 0
— dozen bunches ... 9 0-18 0	Roses, Tea, per doz. 1 0-3 0
Eucharis, per dozen 4 0-8 0	— coloured, dozen. 2 0-4 0
Gardenias, 12 blooms 3 0-6 0	— red, per dozen ... 0 6-1 0
Gladiolus, doz. sprays 1 6-3 0	Safrano, dozen ... 1 0-2 0
Heliotropes, 12 spr. 0 6-1 0	Stephanotis, 12 spr. 4 0-6 0
Lilium longiflorum, 12 blooms ... 4 0-6 0	Tuberose, 12 blms. ... 0 6-1 0
— lancifolium, 12 bl. 1 0-3 0	Violets, 12 bunches ... 1 0-2 0
Lapageria, 12 blooms 1 0-2 0	— dark, Fr., bunch 1 6-2 0
	— Parme, Fr., bun. 3 0-4 0

VEGETABLES.—AVERAGE RETAIL PRICES.

s. d. s. d.	s. d. s. d.
Artichokes, p. doz. ... 4 0-...	Mustard and Cress, punnet ... 0 4-...
Beet, red, per dozen 1 0-2 0	Onions, per bunch ... 0 5-...
Carrots, per bunch ... 0 6-...	Parsley, per bunch ... 0 4-...
Califlowers, each ... 0 3-...	Potatoes, per cwt. ... 4 0-5 0
Caulery, per bundle ... 1 6-2 0	— kidney, per cwt. 4 0-5 0
Cucumbers, each ... 0 9-...	Shallots, per lb. ... 0 6-...
Endive, per dozen ... 3 0-...	Spinach, per bushel ... 2 6-...
Green Mint, bunch ... 0 6-...	Tomatoes, per lb. ... 1 0-...
Herbs, per bunch ... 0 6-...	Turnips, per bunch, new ... 0 5-...
Leeks, per bunch ... 0 4-...	
Lettuce, per dozen ... 2 0-...	
Mushrooms, punnet 2 6-...	

POTATOS.—Myatt's finished. Beauty of Hebron, 60s. to 81s.; Regents, 80s.; and Magnums, 65s. to 80s. per ton. Trade heavy at foregoing prices.

FRUIT.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Apples, half-sieve ... 2 0-4 6	Melons, each ... 1 0-3 0
— Canada and Nova Scotia, per barrel 10 0-14 0	Peaches, dozen ... 2 0-6 0
Cobs, 100 lb. ... 75 0-...	Pine-apples, Eng., lb. 1 6-2 0
Grapes, per lb. ... 0 6-2 6	Plums, half-sieve ... 2 6-4 6
Lemons, per case ... 12 0-21 0	— St. Michael, each 2 0-5 0

SEEDS.

LONDON: Oct. 24.—Messrs. John Shaw & Sons, seed merchants, of 37, Mark Lane, E.C., write that the articles which have lately been most in favour, are Alsika and Trefoil, both of which exhibit a further advance. Red and white Clover seed keep steady. There is no change in grasses. Winter Tares are cheaper with lessened demand. Some choice new Fillbasket Peas, of New Zealand growth, just imported, are now offering at 8s. 6d. per bushel. Canary seed is unaltered. Lower prices are taken for Hemp seed. Blue Peas are dearer; fine samples continue scarce. The new Haricot Beans are good and cheap.

CORN.

Averages.—Official statement showing the average price of British corn, imperial measure, in the week ended October 20:—Wheat, 32s. 1d.; Barley, 28s. 10d.; Oats, 16s. 10d. For the corresponding week in 1887:—Wheat, 29s. 9d.; Barley, 28s. 10d.; Oats, 16s. 4d.

FRUIT AND VEGETABLES.

SPITALFIELDS: Oct. 24.—There were good supplies of all kinds of farm and market garden produce to-day. Trade steady, at the undermentioned rates:—Vegetables: Savoys, 3s. 6d. to 4s. 6d. per tally; Cabbages, 4s. to 6s. do.; Cauliflowers, 4s. to 6s. do.; Brussels Sprouts, 2s. to 2s. 6d. per half-sieve; Greens, 2s. to 2s. 6d. per dozen bunches; Turnips, 2s. to 2s. 9d. do.; Carrots, 1s. 6d. to 2s. do.; Onions, 1s. 9d. to 2s. 3d. do.; Mint, 1s. to 1s. 6d. do.; Parsley, 1s. to 1s. 6d. do.; Beetroot, 2s. to 2s. 9d. do.; Celery, 4s. 6d. to 10s. do.; Horseradish, 9d. to 1s. 2d. per bundle; Belgian Onions, 2s. 6d. to 2s. 9d. per bag; Dutch Onions, 3s. to 3s. 6d. do.; pickling Onions, 4s. to 4s. 6d. do.; frame Cucumbers, 4s. to 5s. per dozen; Endive, 1s. 3d. to 1s. 9d. do.; Cos Lettuce 4d. to 8d. per score of 22; Carrots, 24s. to 36s. per ton. Fruit: Apples, 3s. to 6s. per bushel; do., 1s. 6s. to 5s. per half-bushel; Pears, 3s. to 5s. per bushel; English Plums, 3s. to 3s. 6d. per half-sieve; Damsons, 3s. 6d. to 4s. do.; English Tomatoes, 3s. 6d. to 5s. per peck.

POTATOS.

SPITALFIELDS: Oct. 24.—Quotations:—Magnums, 60s. to 80s.; Imperators, 70s. to 85s.; Champions, 55s. to 60s.; Beauty of Hebron, 70s. to 100s.; English Regents, 67s. 6d. to 90s. per ton.

STRATFORD: Oct. 23.—Quotations:—Yorks, best, 80s. to 85s.; Lincolns, 65s. to 70s. Cambs, dark-lands, 60s. to 68s. per ton.

NOTICES TO CORRESPONDENTS.

ARTIFICIAL MANURES: L. L. Lime may be applied on peaty soils at the rate of 5 cwt. per acre. On other soils, not containing much humus, 3 cwt. would be sufficient. Nitrate of soda and sulphate of soda, which are the best forms in which to apply salts of soda—altogether 1½ cwt. Superphosphate of lime may be made in sufficient quantity for 1 acre of land, by taking 4 bushels dry, crushed bones, and 50 lb. of ordinary sulphuric acid, and an equal quantity of water. Put the bones in an earthen or wooden vessel, and pour the mixture of water and acid gradually over them, stirring meanwhile. When the mixture has laid forty-eight hours, take it out and form a conical heap, and cover with wood-ashes, and after letting it lie undisturbed for a month, mix it still further with wood-ashes or fine soil, so as to produce about 20, 30, or 40 bushels per acre. Cover up again for a few days before finally breaking the paste up for use. It had better be applied all over the orchard, as the trees are standing close together. The lichens may be scraped off, or the trees syringed with lime-wash or brine in mid-winter.

BOOKS: *Constant Reader.* Thompson's *Gardener's Assistant*, revised by Thomas Moore, is offered by J. Wheldon, 58, Great Queen Street, Lincoln's Inn Fields, second-hand, price 2s.—*North Bank. Practical Treatise on the Cultivation of the Grape Vine* (W. Thomson). It is published by Blackwood & Son, Edinburgh and London, price 5s.—*Cincinnati: the Epitome of Gardening* is certainly published by Adam Black & Son.—*Draughtsman.* Thomson's *Handy-Book of the Flower Garden*. Blackwood & Sons, London and Edinburgh; 7s. 6d.

CHRYSANTHEMUM FLOWER BECOMING CHANGED IN FORM: *G. C.* The change in the Chrysanthemum is only a reversion to the natural state. The mining larva is that of Tephritis onopordinis, and is common on Celery and Chrysanthemums, both cultivated and wild species. Burn badly affected leaves; the grub in lesser injured leaves may be killed by squeezing it.

GLOXINIA BLOOMS: *J. T.* Colours pretty, and that in the throat unusual. So far as could be seen from the withered flowers, the form is good.

MARKET REPORTS: *Essex.* Owing to the great pressure on our space, caused by the recent Fruit Conference, it has not been convenient for us to publish these as usual.

NAMES OF PLANTS: *C. B. R.* 1, *Ruellia speciosa*, syn. *Dipteracanthus affinis*; 2, *Bignonia*; 3, *Xylophylla latifolia*; 4, *Pellionia Daveaeania*; 5, *Phyllanthus nigrosus*; 6, *Sedum Sieboldii*.—*Humming.* *Tillandsia argentea*.—*R. C. B.* *Rosa rugosa* (Japan Rose).—*J. S. W.* 1, *Polypodium irioides*; 2, *Asplenium bulbiferum*; 3, *Polypodium glaucum*; 4, *Adiantum tenerum*; 5, *Platyloma rotundifolia*; 6, *Polypodium pustulatum*.—*S. Eria truncata*.—*W. S. C. P.* 1, next week; 2, *Campanula macrorhiza*; 3, *Iris* (flower too decayed to identify); 4, *Bellidistrium Micheli*; 5, *Wahlenbergia gracilis*; 6, *Aster novae-angliae* var.—*A. J. B.* *Stapelia bufonia*.—*A. K. D.* 1, *Centaurea macrocephala*; 2 and 4, *C. Tournefortii*; 3, *C. ruthenica*; 5, *C. sulphurea* (= *C. calocephala* var. *flava*); 6, *C. dealbata*; 7, *C. tartarica*. *H. A. J.* *Agaricus personatus*, *A. nebularis*, *Polyporus lucidus*.—*W. Jenkins.* *Oncidium volvox*.

PHYLLOXERA: *D. B.* No trace.

SEEDLING BRIERS: *E. E.* Cannot be budded or grafted till the third or fourth year after sowing—the strongest in the former, and the weaker ones in the latter.

VINE BORDER: *G. E. Lloyd-Baker.* The archway, or tunnel, running the length of the border, may have been made with an idea of warming the border, either by artificial heat or by letting in sun-heat. It might remain, but it should have a greater number of holes made at the lowest point, and quite as low as the floor of concrete, so that the water may drain off quickly. A border 3½ feet deep is unnecessary, and at least 1 foot might be filled up with rubble, and made with a slope to the drainage outlets. In remaking the border use a considerable portion of turfy loam—calcareous, if you can get it—and lime rubbish, plaster, and the like, broken small, and mixed with it. No manure should be used, as that tends to the souring of the soil in the end; and stimulants to growth are better given in the form of surface-dressings either of partly decayed farmyard manure, or some special artificial kind. In making the border, place thick turves with the grassy side downwards over the rubbish, and do not make the border at first much wider than is necessary to find space for the roots either of the old Muscat Vines or new plants; the rest of the border can be made as required. Make the border 8 or 9 inches higher than its subsequent level, as the new soil will sink considerably; and in case new Vines are planted, defer this operation till the spring.

VIOLETS: *E. E.* These are commonly set to market in large bunches, with their own foliage, the flowers being cut with the longest possible amount of stalk. We do not know who is the largest grower of these flowers. There is no book on the culture of the Violet.

COMMUNICATIONS RECEIVED.—*F. W. B.*—*G. J. L.*—*J. K.*—*Count Solms, Strasburg*.—*T. A. B.*—*J. G. B.*—*D. L.*—*M. F.*—*J. W.*—*J. C. B.*—*T. S.*—*D. C.*—*Prof Sargent Arnold, Arboretum, Cambridge, Mass.*—*T. B. H.*—*J. G.*—*N. H. P.*—*J. E.*—*A. B.* (next week).—*G. H. R.*—*J. T.*—*H. May.*—*Storrie & Storrie.*—*N. E. R.*—*M. F. G.* (a few particulars next week).—*V. T.*—*J. C. R.*—*Professor Reichenbach.*—*G. O.*—*M. T.*—*Thsta.*—*A. D.*—*Hortus.*—*F. R.*—*J. A.*—*W. B.*—*Wild Rose.*—*F. A.*—*J. E. E.*—*W. J. M.*—*Dr. Wiglesworth* (shortly).

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Per 100. Per 1000. Per 10,000.

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1st ... 60s. ... 500s. ... 4000s.
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SPUREA JAPONICA, extra strong clumps. GLADIOLUS BRENCHELYENSIS, fine bulbs. For large quantities special prices on application. Cases and packing free. Offered by HERMAN BUDDENBURG, Bulb Grower, Hillegom, near Haarlem, Holland.

OLD-FASHIONED HEDGES.—English Yew, bushy, and with a profusion of fibrous roots, 1½ to 2 feet, 6s. per dozen, 55s. per 100; 2 to 2½ feet, 8s. per dozen, 50s. per 100; 2½ to 3 feet, 9s. per dozen, 60s. per 100; 3 to 3½ feet, 12s. per dozen, 85s. per 100. Prices of larger sizes and other Evergreens, suitable for Hedges—e.g., Tree Box, Holly, Laurel, Privet, Cypress, Juniper, Thuja, &c., on application.—RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

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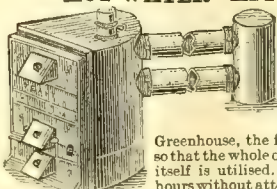
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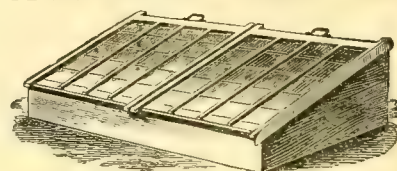
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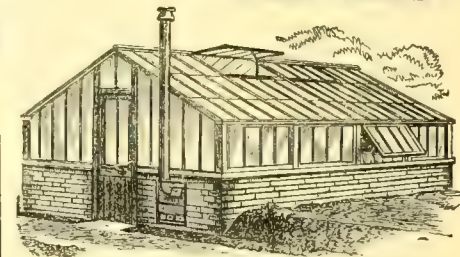
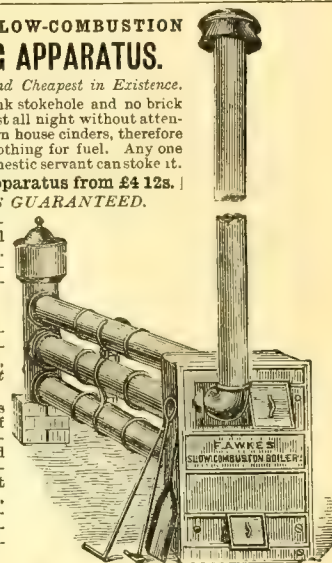
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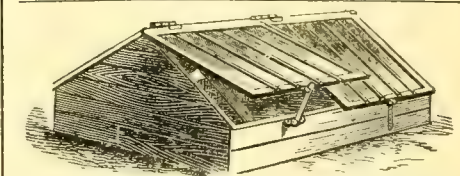
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The glass is nailed and puttied in.

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HOT-WATER BOILERS,

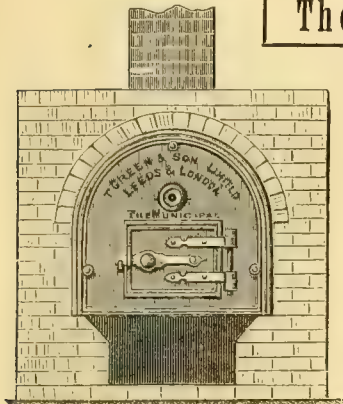
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SADDLE BOILERS, With WATERWAY BACKS and WELDED BOILERS, any of which are specially adapted for Heating Greenhouses, Conservatories, Churches, Chapels, Schools, Public Buildings, Entrance Halls, Warehouses, Workshops, &c. They are the neatest, cheapest, most effective, and durable of any extant.

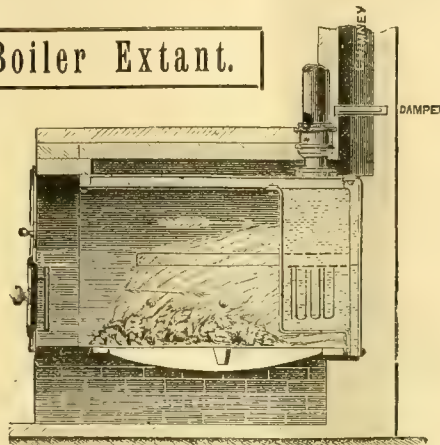
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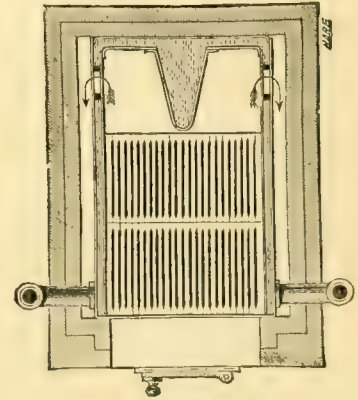
The Best Boiler Extant.



— FRONT ELEVATION —



— LONGITUDINAL SECTION —



SECTIONAL PLAN

The longitudinal section gives a view of the fire-box, water space, flues, &c.

The cross section gives a view of the fire-box, water space and V-shaped back.

The front elevation shows it set in brickwork, which is necessary for this class of boiler.

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MB 1	3 ft. 2 in.	by 2 ft. 0 in.	by 2 ft. 0 in.		1280	£15 0 0
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MB 4	6 6	by 3 0	by 3 0		7000	60 0 0
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Calculated to
heat 4-in. piping
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TESTIMONIALS.

MESSRS. THOS. GREEN AND SON, LTD., NORTH STREET, LEEDS.

Re HEATING APPARATUS.

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I am, Gentlemen, yours truly, THOS. HEWSON, Borough Engineer.

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Yours faithfully,

(Signed)

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FROM

To

W. RICHARDS,

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LONDON, W.C.

1888.

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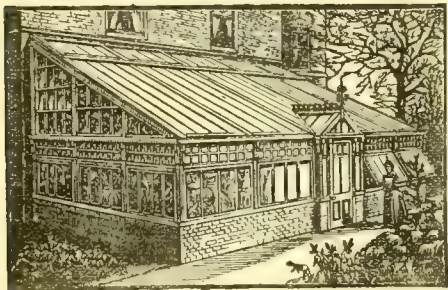
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GARDENER (SINGLE-HANDED), or otherwise.—Age 30, married; understands Stove and Greenhouse Plants, Grapes, Flower and Kitchen Garden. Three years character from present employer. Leaving through giving-up Garden.—G. F., 1, Kingsgate Cottages, Cricklowood, N.W.

GARDENER (SECOND or SINGLE-HANDED).—Eight years' experience Indoors and Out; can be well recommended.—State wages and particulars to J. MAJOR, Holmbury St. Mary, Dorking, Surrey.

GARDENER (SECOND), or FOREMAN.—Age 27, married; thirteen years' experience. Well recommended from all previous employers as to character and abilities.—CLARK, 5 Leicester Road, Ashby-de-la-Zouch.

GARDENER (UNDER), Inside or Out.—Young; not afraid of work. Good character.—G. ARCHER, Wexham Post Office, near Slough, Bucks.

GARDENER (UNDER), in a Gentleman's Garden.—Age 22; seven years' experience Inside and Out. Good character.—T. POCKOCK, 81, Lots Road, Chelsea, S.W.

GARDENER (UNDER).—Age 23; seven years' experience Indoors and Out; three years good character from last place.—W. KEEN, Maywood, Kenilworth Road, Leamington.

GARDENER (UNDER).—Age 18; abstainer. Used to Glass and Kitchen Garden in general.—A. C., 23, Bloomsbury Street, Kemp Town, Brighton.

FOREMAN, in the Houses, in a Gentleman's establishment.—Age 25; good character.—G. L., The Gardens, Kempsholt Park, Basingstoke, Hants.

FOREMAN.—Age 29; thoroughly practical in Orchids, Stove and Greenhouse Plants, Vines, Peaches, Melons, Cucumbers, Fruit, Flower and Kitchen Gardening, &c. Highest references.—C. T., 24, Braynmaer Road, Battersea Park, S.W.

To Nurserymen.

FOREMAN (GENERAL) and PROPAGATOR (WORKING).—Well up in Fruits, Roses, Rhododendrons, Conifers, Clematis, Stove, Greenhouse, and Bedding Plants, and General Routine of the Trade, Wreaths, Crosses, &c. Good Salesman. Sixteen years' experience. First-class reference.—FOREMAN, 41, Wellington Street, Strand, W.C.

To the Trade.

FOREMAN, or PROPAGATOR and GROWER.—Age 30, married; well up in Growing Plants, Ferns, Cut Flowers, Wreaths, Crosses, &c.—R., 4, Bridge Terrace, Walton le-Dale, Preston, Lancashire.

To Market Growers and Others.

FOREMAN PROPAGATOR, or GROWER.—Age 27, married; fourteen years' experience with Grapes, Cucumbers, Tomatoes, Mushrooms, Strawberries, and Cut Flowers. Good references.—A. B., 2, Victoria Terrace, Herbert Road, Manor Park, E.

PROPAGATOR and GROWER of Market Stuff, Cut Flowers, Cucumbers, Tomatoes, &c.—Age 30, married, no family; good reference.—W. C., Barkby, Leicester.

DECORATOR and GROWER of Tropical and Temperate Plants.—Middle-aged, married; extensive knowledge of high-class Gardening. Reference good.—G., Havelock Place, Wokingham, Berks.

JOURNEYMAN, or UNDER GARDENER, in Private Garden.—Six years' experience. Total Abstainer.—W. ABBOTT, The Green, Walton-le-Dale, near Preston.

IMPROVER, in the Houses.—Strongly recommended. No objection to have Premium stopped out of wages for two years.—B. WYLIE, The Rectory, Aldridge.

IMPROVER, in a Gentleman's Garden or Nursery.—Age 20; four and a half years' experience, with knowledge of Making Sprays and Butoonholes. Bothy preferred.—RYDING, Layton Road, Blackpool.

IMPROVER, in Gentleman's Garden.—Age 18; strong. Three and a half years' good character. Wages no object, for a good situation.—W. HARDY, Whitacre, Colshill, Birmingham.

IMPROVER, in a Nobleman's or Gentleman's Garden; age 17.—SAMUEL COULTER would be pleased to recommend a strong active young man as above. Three years' experience.—SAMUEL COULTER, Northfield Nursery, Ealing Dean, W.

IMPROVER, in a Gentleman's Garden; age 16.—J. BARRANCE, Gardener to H. Taylor, Esq., would be pleased to recommend a strong, active Lad. Three years and a half in present situation.—J. BARRANCE, The Highstone, Hadley, Barnet.

IMPROVER, in a Gentleman's Garden.—Age 20; will shortly be disengaged. Is a good all-round hand, steady and industrious; speciality, Orchids, Stove and Greenhouse Plants, with some knowledge of Fruits. Highly commended.—FRED. HORSMAN AND CO., Colchester.

MARKET, or OTHERWISE.—Employment wanted, in or near Brighton, by a successful Grower, Fruit or Flowers. Highest references. Age 32. Low wages not objected to.—T. BUDD, 25, Montpelier Street, Brighton, Sussex.

TO NURSERYMEN.—Situation in Nursery; age 24; ten years' experience in growing for the London and South of England Markets.—F., The Cottage, Hellenboro House, Roehampton Lane, Putney, S.W.

MARKET NURSERIES.—Employment wanted in a Market Nursery. Used to Propagation of Bedding Stuff, Cultivation of Ferns and Stove Plants. Age 28, single; superior references.—B. S., 25, Angel Road, Upper Edmonton.

TO NURSERYMEN.—A young man (age 20) requires a situation in Houses. Has had six years' experience.—H. KITELEY, 3, Green Cottage, Whetstone.

TO HEAD GARDENERS.—A young man is desirous to place himself with a first-class Gardener, to learn the Business in all its branches.—Send particulars and Premium required, to E. E., Hilsa Farm, Hilsa, near Cosham Hants.

TO FLORISTS and FRUIT GROWERS.—Wanted to place a tall youth (age 15) in a first-class Florist's and Fruit Grower's, to learn all Branches. Indoors about two years. Time given.—State Terms to Mrs. EVANS, 40, Glyndon Road, Plumstead, Kent.

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TRAVELLER, or on COMMISSION, for Indoor and Outdoor Nursery Stock in quantities. Well known on the Road.—TRAVELLER, care of Mr. Baines, Fern Cottage, Southgate, N.

Seed Trade.

MANAGER, or HEAD SHOPMAN.—Married; would not object to travel. Eighteen years' experience, Wholesale and Retail.—J. Y., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

Seed Trade.

SHOPMAN (HEAD), or WAREHOUSEMAN.—Fifteen years' experience in leading English, Irish, and Scotch Houses. All branches.—ALPHA, Messrs. Nutting & Sons, Seed Merchants, 106, Southwark Street, London, S.E.

SHOPMAN (FIRST or SECOND).—Age 23; seven years' experience in Leading Houses. Thorough knowledge of the Seed, Bulb, and Plant Trade. Had full character for 12 months. Highest references.—A. LOW, Dalrymple Street, Girvan.

SHOPMAN; where good brisk trade is done preferred.—Age 30, married; fifteen years' experience. Excellent references.—QUICK, *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

SHOPMAN.—Age 23; seven years' experience in First-class Houses. Seeks re-engagement in the Seed Business.—Highest references; active, steady.—H. MASON, Princes Park, Liverpool.

SHOPMAN.—Sixteen years' experience; well up in all departments, including Florist Work. Highest references.—W. S., Mr. Tillier, Ains Cottage, Holly Road, Hounslow.

To Seedsmen or Seed and Implement Merchants. **SHOPMAN, or ASSISTANT.**—Fifteen years in last situation. First-class testimonials and references.—C. C., Hill View, Ballymonty, Thurles.

SHOPMAN, or ASSISTANT.—Twelve years' experience; thorough knowledge of Farm and Garden Seeds, Bulbs, Sundries. Knows Plants well.—P. INNES, 35, Rose Street, Garnethill, Glasgow.

SHOPMAN, or ASSISTANT.—Age 23; well up in Florist Work. Has been six years in present situation. Good references.—J. HOWELL, J. Farmer, Brecknock Nurseries, Camden Road, N.

SHOPMAN, or ASSISTANT.—Young man seeks re-engagement as above. Six years' experience; good reference.—W. S., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

ASSISTANT, in Seed Establishment.—Age 22; four years' experience in Warehouse and Nursery. Good character.—W. L., 45, Ilderton Road, New Road, Rotherhithe, S.E.

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BOUQUETIST.—Well-up in Wreaths, Crosses, Bouquets, &c. Good knowledge of Plants. Eight years in present place.—THOMAS TIDMARSH, Northfield, Birmingham.

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CRYSTAL PALACE.
GRAND EXHIBITION OF CHRYSANTHEMUMS,
FRIDAY and SATURDAY, November 9 and 10.
Schedules on application to

Mr. W. G. HEAD,
Superintendent of Gardens, Crystal Palace,
Entries Close November 2.

KINGSTON and SURBITON
CHRYSANTHEMUM SOCIETY.

The TWELFTH ANNUAL EXHIBITION will be held in the Drill Hall, Kingston, on TUESDAY and WEDNESDAY, November 6 and 7, 1888, when, in addition to valuable Money Prizes, the Fifth Champion Challenge Vase, value 25 guineas, will be offered. Entries Close November 1. Schedules and other information of

G. WOODGATE,
Warren House Gardens, Kingston Hill, Surrey.

NATIONAL CHRYSANTHEMUM
SOCIETY.—GRAND FÊTE and EXHIBITION.

Royal Aquarium, Westminster.
WEDNESDAY and THURSDAY, November 7 and 8.
Schedules (free) of

WILLIAM HOLMES, Hon. Sec.
Frampton Park Nurseries, Hackney, E.

DEVIZES GRAND CHRYSANTHEMUM
and PRIMULA SHOW, NOVEMBER 13, 1888.

For 24 Incurred Blossoms—1st Prize, £10 10s.; 2nd, a Five Guinea Cup; 3rd, 60s. For 12 Japanese—1st Prize, a Five Guinea Cup; 2nd, 40s.; 3rd, 25s. And 19 other Prizes for Plants and Blossoms. The Challenge Cup will be given for most points. Eight good Prizes will be given for Primulas in pots and blossoms. Schedules on application to
THOS. KING, General Manager, The Gardens, Devizes Castle.

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SUTTON'S HYACINTHS.

"The Hyacinths had from you last year were the finest I have ever grown, and were the admiration of all who saw them in flower."—Mr. R. H. MATHER, *Glasgow*.

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"The Hyacinths I had from you are in beautiful bloom. They are splendid; everyone asks where I obtained them."—Mr. H. BLENCOWE, *Devizes*.

SUTTON'S HYACINTHS.

"The one hundred Hyacinths I had from your firm are now in bloom, and they are splendid. They win the admiration of all who see them."—Mr. J. BUSSELL, *Gardener to Mrs. P. Thurbay Felham, Abernethy Park*.

SUTTON'S BULBS GENUINE ONLY.

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WANTED, Seedling BRIERS and MANETTI STOCKS, fit for working. State lowest price for cash per 1000.—B. PRIMROSE, Nurseryman, Blackheath, S.E.

WANTED, a ROYAL GEORGE PEACH, Fan-trained, good, well shaped Plant, not less than 6 feet diameter, and 9 feet high.

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WANTED, APPLES, true to name; 1 Peck of each variety:—Cockle Pippin, Cox's Orange Pippin, Golden Pippin, Pine, Golden Reinette, Golden Russet, Scarlet Crofton, The Queen, Blenheim Orange.

Please send sample and price to
Mr. HOWES, Merton Hall Gardens, Thetford.

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"PRESIDENT CARNOT."

JOHN ETHERINGTON DIXON, SEED MERCHANT, Lord Street, GAINSBOROUGH. For further particulars, see future Advertisements.

MR. GEORGE BOND having taken charge of the Nurseries at Calne, Wilts, all DEBTS DUE to the said BUSINESS will be RECEIVED by him, and all Persons having Claims against the business kindly communicate with him.—Calne, October 23.

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SPECIAL OFFER.—ENGLISH YEWs, fine bushy plants, 2 to 3, 3 to 4, 4 to 5 feet, well furnished; CUPRESSUS LAWSONIANA, 2 to 3, 3 to 4 feet; also ERECTA VIRIDIS, 1½ to 2, and 2 to 3 feet, fine. MATTHEWS and SON, Milton, Stoke-on-Trent.

Roses, Fruit Trees, &c.

CHARLES TURNER'S Autumn CATALOGUE, containing full collections of Roses, Fruit Trees, Conifers, and all kinds of Hardy Trees and Shrubs, is now ready, and may be had free on application. The Royal Nurseries, Slough.

To those about to Plant.

A DESCRIPTIVE CATALOGUE, comprising fine Transplanted Fruit Trees, Roses, Hardy Climbers, Rhododendrons, Conifers, Ornamental and Flowering Trees and Shrubs, Forest Trees, &c., in large varieties and quantities, adapted to all soils and climates. Sent free on application to GEO. JACKMAN and SON, Woking Nursery, Surrey.

TO LARGE PLANTERS OF THORN

QUICKS.—1 to 1½ foot, 9s. per 1000, £40 per 100,000; 1½ to 2 feet, 11s. per 1000, £50 per 100,000; 2 to 2½ feet, 13s. per 1000; 2½ to 3 feet, 15s. per 1000; 3 to 4 feet, 18s. per 1000. GARLIES MITCHELL, Nurseryman, Stranraer.

SPECIMEN CONIFERS.—Trees for Avenues, Evergreens, and Forest Trees in great variety. CATALOGUE free on application.—RICHARD SMITH and CO., Nurserymen and Seed Merchants, Worcester.

LILY of the VALLEY.—Finest Berlin forcing Crowns. Consignment to hand in fine condition. Samples and price on application to WILLIAM DENMAN, 7, Catherine Street, Covent Garden, W.C.

TURF—TURF.—Finest, for Tennis Lawns, &c. at 10s. per 100. Superior Top-spit for Potting, also. J. KEEVIL, Merton Hall Road, Wimbledon.

SULPHIDE of POTASSIUM (Harris).—A certain cure for Mildew on Plants, Red Spider, Aphis, &c. Enough to make 32 gallons of solution, free for 1s. 3d. The only kind to use is "Harris's specially prepared Sulphide of Potassium." Sole Manufacturers:—PHILIP HARRIS and CO. (Limited), 9, Bull Ring, Birmingham.

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J. MUNRO, Northfields, Stamford. Advice, Designs, and Estimates for all kinds of Ornamental Ground Work, Forest and Covert Planting, &c. Thirty years' practice. Many years Nursery Manager at Dickson's, Chester; Lawson's, Edinburgh; and Osborn's, London.

W. H. LASCELLES and CO., HORTICULTURAL BUILDERS, 121, BUNHILL ROW, LONDON, E.C. Plans and Estimates Free. See large Advertisement on page 499.

SALES BY AUCTION.

Bulbs from Holland.

Sales every MONDAY, WEDNESDAY, and SATURDAY, in Large and Small Lots, to suit all Buyers.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., every MONDAY, WEDNESDAY, and SATURDAY, at half-past 12 o'clock precisely each day, first-class consignments of HYACINTHS, TULIPS, CROCUSES, and other BULBS, arriving daily from well-known Farms in Holland.

On view morning of Sale, and Catalogues had.

Wednesday and Saturday Next.

Several hundred choice-named Standard and Dwarf ROSES, from a well-known English grower.

MR. J. C. STEVENS will include the above in his SALES by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY and SATURDAY NEXT, November 7 and 10.

On view morning of Sale, and Catalogues had.

Thursday Next.—(Sale No. 7789.)

SPECIAL SALE OF BULBS from Holland.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, November 8, at half-past 12 o'clock precisely, some hundred lots of first-class BULBS, just received from Holland, in fine condition, including Hyacinths, Tulips, Crocuses, Narcissus, Snowdrops, &c.

On view morning of Sale, and Catalogues had.

Thursday Next.—(Sale No. 7790.)

5000 Grand Bulbs of LILUM AURATUM, just received from Japan, in the finest possible condition; also 8000 splendid Berlin LILY of the VALLEY CROWNS for Forcing.

MR. J. C. STEVENS will include the above in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, on THURSDAY NEXT, November 8.

On view morning of Sale, and Catalogues had.

Special Sale of Orchids in Flower and Bud.

MR. J. C. STEVENS begs to announce that his NEXT SPECIAL SALE OF ORCHIDS in FLOWER and BUD will take place at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, November 15, at half-past 12 o'clock precisely, and he will be glad if Gentlemen desirous of entering Plants for this Sale will send Lists not later than Thursday Next.

Dutch Bulbs.

Every MONDAY, THURSDAY, and SATURDAY.
Great Unreserved Sales.

MESSRS. PROTHEROE and MORRIS will SELL by AUCTION, at the Central Sale Rooms, 67 and 68, Cheapside, London, E.C., every MONDAY, THURSDAY, and SATURDAY, at half-past 12 o'clock precisely, extensive consignments of first-class HYACINTHS, TULIPS, CROCUS, NARCISSUS, and other BULBS, from Holland, lotted to suit the Trade and Private Buyers.

On view morning of Sale, and Catalogues had.

Tottenham.

Adjoining Tottenham Hale Station.

ANNUAL SALE of remarkably well-grown NURSERY STOCK, HERBACEOUS PLANTS, and BULBS, for the growth of which Mr. Ware has gained so great a reputation.

MESSRS. PROTHEROE and MORRIS will SELL by AUCTION, on the Premises, the Hale Farm Nurseries, Tottenham, on TUESDAY, November 6, at 11 o'clock precisely, in consequence of the unusually large number of lots, an extensive quantity of beautifully-grown and thriving NURSERY STOCK, including 5000 Veronica Traversii, 8000 bushy Ornamental Shrubs, from 1 foot to 2½ feet, all well grown, and specially suited for pots or boxes; 5000 Oval-leaved Privet, bushy plants, 3 to 5 feet; 5000 well-grown Dwarf Roses of the best sorts, 1000 Irish Ivies in pots, 10,000 Hardy Climbers in pots, 40,000 strong Sea-kale and Asparagus for forcing, 5000 Chrysanthemum Roses, 6000 Border and other Carnations in pots, 6000 Standard Ornamental Trees, thousands of Lilies, Spiræas, Gladioli, Dahlias, and other Miscellaneous Stock.

May be viewed any day prior to the Sale. Catalogues had on the Premises; and of the Auctioneer, 67 and 68, Cheapside, E.C., and Leytonstone, E.

N.B.—The Auctioneers desire to call particular attention to this Sale, as it is not often so extensive and varied a stock is offered in one day.

Tuesday Next.—Sale by Sample.

MESSRS. PROTHEROE and MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on TUESDAY NEXT, November 6, at half-past 12 o'clock precisely, a large quantity of NURSERY STOCK and GREENHOUSE PLANTS from sample, including the following:—

2,000 Fruiting Raspberry Canes	1,000 Double Hollyhocks in pots
650 Raspberry Canes and Red Currants	20,000 Azalea mollis
3,000 Dwarf Roses	1,000 „ indica
100,000 White Thorn Quick, 8 to 15 inches	1,500 Lantana borbonica, in 45's and 60's
250 Bushy Laurels, 3 feet, 4 feet, and 6 feet	1,000 Acanthaceae
800 Standard Pears of sorts	1,000 Pycnosperma Alexandra in 45's and 60's
Aucuba japonica, 1½ to 2½ feet	200 Ficus elastica
5,000 Oval-leaved Privet	500 Double White Primula
Ponticum Rhododendrons	600 Solanums in 32's and 48's
Cypressus Lawsonii	5,000 Strawberries in pots
15,000 Spiræa japonica	1,800 Dracena Veitchii
	12,000 Roman Hyacinths
	3,000 Lilium candidum
	4,000 Crinum Clover
	2,000 Asparagus

Also Limes, Poplars, and other Standard Trees. Samples will be on view the morning of Sale. Catalogues on application to the Auctioneers, 67 and 68, Cheapside, E.C., and Leytonstone, E.

Tuesday Next.

English-grown CAMELLIAS and AZALEAS, and a fine Assortment of GREENHOUSE PLANTS, Standard and Dwarf ROSES of the best sorts, selected FRUIT TREES, Hardy EVERGREENS, DUTCH BULBS, &c.

MESSRS. PROTHEROE and MORRIS will SELL the above at the City Auction Rooms, 38 and 39, Gracechurch Street, on TUESDAY NEXT, November 6, at half-past 12 o'clock precisely.

On view morning of Sale. Catalogues had at the Rooms, and of the Auctioneers, 67 and 68, Cheapside, E.C., and Leytonstone, E.

Groombridge, Tunbridge Wells.

Great UNRESERVED SALE of Valuable NURSERY STOCK; all recently transplanted, and now in splendid condition.

MESSRS. PROTHEROE and MORRIS are instructed to SELL by AUCTION, on the Premises, Hollamby's Nurseries, Groombridge, Tunbridge Wells, close to the Groombridge Station, on TUESDAY and WEDNESDAY, November 6 and 7, at 12 o'clock precisely each day, by order of Mr. E. Hollamby, enormous quantities of CONIFERS, all carefully prepared for removal; 2000 ROSES, 50,000 LAUREL FIR, 2 feet to 4 feet; 10,000 SCOTCH and SPRUCE FIRS, 6000 Portugal and other LAURUS, 10,000 PRIVET, 5000 CUPRESSUS, 2000 THUJA LOBBII, 15,000 named and other RHODODENDRONS, 40,000 COTONEASTER SIMONII, hardy CLIMBERS, &c.

May be viewed any day prior to the Sale. Catalogues had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, E.C., and Leytonstone, E.

Wednesday Next.

6000 LILUM AURATUM, splendid bulbs, just received from Japan; 30,000 LILY of the VALLEY, 3000 LILUM CANDIDUM, 3000 NARCISSUS, BARK'S DAFFODILS, 500 AZALEAS, and CAMELLIAS, GREENHOUSE PLANTS in variety, including several Specimens; English-grown Lilies and other HARDY BULBS.

MESSRS. PROTHEROE and MORRIS will SELL the above by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on WEDNESDAY NEXT, November 7, at half-past 12 o'clock precisely.

On view morning of Sale, and Catalogues had.

Caterham.

TWO DAYS' SALE of NURSERY STOCK, by order of the Executors of the late Mr. G. J. Woollett.

MESSRS. PROTHEROE and MORRIS are instructed to SELL by AUCTION, on the Premises, The Nurseries, Caterham, Surrey, a short distance from the Caterham Railway Station, on THURSDAY and FRIDAY, November 8 and 9, at 12 o'clock precisely each day, a large quantity of well-grown NURSERY STOCK, in capital condition for removal, including an extensive assortment of Conifers and Evergreen Shrubs; 2000 Laurels of sorts, Privet, Spruce, Fir; 1000 Standard, Pyramid, and Trained Fruit Trees; large Forest Trees for immediate planting; Roses, &c.

May be viewed. Catalogues had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, London, E.C.; and Leytonstone, E.

Friday Next.—Notice.

MESSRS. PROTHEROE and MORRIS desire to announce that there will BE NO SALE OF ORCHIDS at their Auction Rooms, in consequence of the Lord Mayor's Show.

Tuesday, November 13.

The First Portion of the well-known Collection of ESTABLISHED ORCHIDS, formed by E. Wischusen, Esq., of Wood Green, who is relinquishing their cultivation.

MESSRS. PROTHEROE and MORRIS are instructed to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on TUESDAY, November 13, at half-past 12 o'clock precisely, the First Portion of this well-known Collection, including the following:—

Cattleya Skinnerii alba	Lælia anceps alba
„ Mandellii, six growths	„ flammea, eight growths
„ Dominiana	„ elegans alba
„ Trianae alba	„ Wolstenholmei
„ fausta delicata	„ purpurata Lowiana, one-half of the only known plant
„ exoniensis, twenty-one growths, believed to be the very finest variety in cultivation	Cypripedium selligerum
Coccygine cristata alba, ten leads	„ Schroderi
Lælia anceps alba	„ Iarande
„ Philbrickiana, 7 growths	„ microchilum
	„ decanum superbum
	„ Sedeni

The plants are in excellent condition, and none will be sold privately prior to the Sale.

Catalogues may be had on application to the GARDENER, or of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Woking, Surrey.

Three days' UNRESERVED SALE of beautifully grown NURSERY STOCK.

MESSRS. PROTHEROE and MORRIS are instructed to SELL by AUCTION, on the Premises, The Horsell Nurseries, Woking, situate about 15 minutes' walk from the Woking Railway Station, on TUESDAY, November 13, and two following days, at 12 o'clock precisely each day, by order of Messrs. H. & C. Cobbett several acres of well-grown NURSERY STOCK, which has been carefully prepared for removal, including a large quantity of Border Shrubs in great variety, adapted for immediate effect, 8000 Fruit Trees, 80,000 transplanted Forest Trees, 10,000 oval-leaved Privet, 2 feet to 4 feet; Green and Variegated Hollies, Ponticum Rhododendrons, 5000 Laurels of sorts, 2 feet to 4 feet; 5000 Standard Ornamental Trees, 3500 Standard, Half-standard, and Dwarf Roses, 1500 Climbing Plants, 75,000 Fruit Tree Stocks, &c.

May be viewed any day prior to the Sale. Catalogues obtained on the Premises, and of the Auctioneers, 67 and 68, Cheapside, E.C., and Leytonstone, E.

N.B.—Purchasers can arrange with Messrs. H. & C. Cobbett to have their lots conveyed to Woking Station at the mere cost of labour and material, whence they can be conveyed to all parts without change of truck.

Finchley Road, N.W.

IMPORTANT TO FLOKISTS and Others engaged in the Nursery and Furnishing Trade.

The compact and well-established NURSERY and FLORIST'S BUSINESS FOR SALE, by Order of Mr. W. A. Cingo, who is leaving the neighbourhood.

MESSRS. PROTHEROE and MORRIS are instructed to SELL by AUCTION, on the Premises, the WAVERLEY NURSERY, situate in the Finchley Road, London, N.W., a few minutes' walk from Marlborough Road Station, on THURSDAY, November 15, 1888, at 2 o'clock precisely, as going concerns, the compact Leasehold Property known as the WAVERLEY NURSERY, Finchley Road, with 11 Greenhouses, Pits, Stabling, and the whole of the Stock and Utensils in Trade, held for about 12 years unexpired at £30 per annum; also the Florist's Shop, No. 18, Finchley Road, occupying a prominent position, and held for 19 years unexpired at £30 per annum; 4 span-roof Greenhouses in Queen's Terrace, held for 15 years at £45 per annum; and a piece of Nursery Ground at the corner of Alexandra Road, close to London Road Station, held at £20 per annum.

Particulars and conditions of Sale may be had on the Premises; of Messrs. GOWING & CO., Solicitors, 40, Finsbury Pavement, E.C.; and of the Auctioneers, 67 and 68, Cheapside, London, E.C., and Leytonstone, E.

Friday, November 16.—Cypripediums.

MESSRS. PROTHEROE and MORRIS will include in their SALE by AUCTION, on FRIDAY, November 16, about twenty-five lots of choice CYPRIPEDIUMS from a well-known private collection. Further particulars will appear next week.

Barnet, N.

By order of the Court of Chancery. *Cornwell v. Cornwell.* SALE of the old-established NURSERY BUSINESS as a going concern, and also about 6 acres of FREEHOLD and COPYHOLD LAND.

MESSRS. PROTHEROE and MORRIS are instructed to SELL by AUCTION, at the Mart, Tokenhouse Yard, London, E.C., on FRIDAY, November 30, at 2 o'clock precisely, the following properties:—

Lot 1.—The old-established NURSERY, SEED, and FLORIST'S BUSINESS, known as the HADLEY NURSERY, Barnet, N., occupying a good position in the best part of the High Street, within eight minutes' walk of the High Barnet Railway Station. The Property comprises about 10 acres of ground, with eight Greenhouses, Dwelling-house, and Seed Shop, the whole held for an unexpired term of about fifteen years at the moderate rental of £65 p. annum. The Goodwill of the Business carried on for so many years will be included in this lot.

Lot 2.—About 6 acres of valuable FREEHOLD and COPYHOLD BUILDING or NURSERY LAND, known as the COMMON NURSERY, Barnet Common, possessing long frontages to the main road, and to Union Lane in the rear.

Lot 3.—Two acres of LAND, opposite Lot 2, held at £7 per annum.

This Sale offers an unusual opportunity for any one desirous of embarking into the Nursery Business. The whole of the STOCK IN TRADE will be sold by Auction, thus enabling purchasers to secure only such stock as may be required for carrying on the business at unreserved auction prices.

Particulars and Conditions of Sale may be had on the Premises, of Messrs. HOUGHTONS and BYFIELD, Solicitors, 85, Gracechurch Street, E.C.; and of the Auctioneers, 67 and 68, Cheapside, London, E.C., and Leytonstone.

Extensive Importations of Orchids.

MESSRS. PROTHEROE and MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., at AN EARLY DATE, extensive importations of ORCHIDS, received direct, being the contents of about 50 cases; amongst them will be found a large consignment of Cattleya Percivaliana, also C. lobata superba, C. labiata Warnerii, and Oncidium Papilio, received from Mr. F. Man.

The plants are in splendid condition. Full particulars will appear next week.

Cheap Bulb Sales.

MESSRS. SMALL and CO. will SELL by AUCTION, at 123, Fenchurch Street, City, E.C., on MONDAY, WEDNESDAY, and THURSDAY, November 6, 7, and 8, at 12 o'clock each day, large consignments of AZALEAS, SPIRÆA, GLADIOLUS, HYACINTHS, TULIPS, CROCUS, &c., lotted to suit all buyers.

Horticultural Auction Rooms, 123, Fenchurch Street, E.C.

Rhododendrons.

For SALE by AUCTION.
20,000 Seedling and Named RHODODENDRONS,
AZALEAS, &c.,
at

F. CASSON'S Nursery, Thorne, Doncaster, on THURSDAY, the 8th day of November.
Catalogue free on receipt of post-card.

WANTED TO PURCHASE or RENT, within 10 or 12 miles of Covent Garden, a NURSERY of about 4 or 5 Acres with Glass, suitable for Plant and Cut Flower Growing for Market.
Address LOMARIA, *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

WANTED TO RENT, or PURCHASE, a Small MARKET NURSERY.—W. J., Miss Staines, Springfield Terrace, Springfield Road, Chelmsford.

TO BE SOLD, as a concern in working order, an old-established SEED BUSINESS (Retail and Wholesale), in the best part of the City of London. Capable of much extension.

A. B. W. Gilks, Esq., 15, Lincoln's Inn Fields, W.C.

To Market Gardeners, Florists, Nurserymen, &c.
HAMPTON-ON-THAMES.

FOR SALE, choice FREEHOLD LAND, in Acre Plots, suitable for above. Rich Garden Soil with gravel and sand sub-soil. The land is considered by the Trade the best near London for Grapes and all other Market Products.
Apply, SECRETARY, Estates Investment and Villa Farm Company, Estate Office, Tangle Park, Hampton-on-Thames.

Lilium auratum.
HOME-GROWN, from Seeds of our own
 saving, mostly Bulbs that have flowered this year :
 4 to 4½ inches in circumference ... 4s. per dozen.
 5 to 6 " " " ... 9s. "
 6 to 6½ " " " ... 12s. "
ISAAC DAVIES AND SON,
 Nurserymen, Ormskirk.

VINES AND FIGS,

SUPERIOR DESCRIPTION.

Thoroughly Ripened without Bottom-heat.

PARTICULARS ON APPLICATION.

DICKSONS

(LIMITED),
Nurseries, CHESTER.

Address for Letters
& Telegrams— } *Dicksons, Chester.*

FRUIT TREES,

SEVENTY-FOUR ACRES.

APPLES, PEARS, PLUMS, CHERRIES, PEACHES, NECTARINES, APRICOTS, and other FRUIT TREES, as Standards, Dwarfs, Pyramids, Bushes, Cordon, and Trained Trees in great variety.

VINES, excellent Canes, 3s. 6d., 5s., 7s. 6d., 10s. 6d. Orchard House Trees in pots, PEACHES, APRICOTS, NECTARINES, &c., from 5s. FIGS from 3s. 6d.

DESCRIPTIVE LIST, containing a sketch of the various forms of Trees, with Directions for Cultivation, Soil, Drainage, Manure, Pruning, Lifting, Cropping, Treatment under Glass; also their Synonyms, Quality, Size, Form, Skin, Colour, Flesh, Flavour, Use, Growth, Duration, Season. Price, &c., free by post.

RICHARD SMITH & CO.,

WORCESTER.

ORCHIDS AND PALMS SPECIALTIES.

The Stock is of such magnitude that without seeing it it is not easy to form an adequate conception of its unprecedented extent.

FRUIT TREES, ROSES, AZALEAS, CAMELLIAS, BOUVARDIAS, CYCLAMENS, ERICAS, EPACRIS, SOLANUMS, TREE CARNATIONS, and other

WINTER and SPRING BLOOMING PLANTS, of fine quality and immense numbers.

INSPECTION INVITED.

The Glass covers an area of upwards of 300,000 super. feet.

HUGH LOW & CO.,
CLAPTON NURSERY, LONDON, N.

FERNS A SPECIALTY.

Specially low Autumn offer,

and CATALOGUE of over 1300 species and varieties in stock, free on application.

ILLUSTRATED CATALOGUE, 1s. 6d. Post-free.

W. & J. BIRKENHEAD,

FERN NURSERY, SALE, MANCHESTER.

COLLECTIONS OF ROSES

to suit all classes and all sized gardens.

Carriage and package free anywhere in the British Isles.

Full particulars posted immediately on application.

EWING & CO., Sea View Nurseries, Havant, Hants.

HYACINTHS, WHITE ROMAN. NARCISSUS, PAPER WHITE.

„ DOUBLE ROMAN.

SEE OUR

Special Wholesale Catalogue of Bulbs,

Containing LIST of all the best varieties of HYACINTHS, TULIPS, CROCUS, LILiums, DAFFODILS, SNOWDROPS, IRIS, &c., free on application.

WATKINS & SIMPSON,

SEED AND BULB MERCHANTS,
EXETER STREET, STRAND, LONDON, W.C.

BULBS.

A FEW REASONS FOR GETTING THEM FROM
RICHARD SMITH & CO.:—

We have dealt in them for more than eighty years. We have visited the best Bulb Farms and have selected the best roots and the best varieties.

The Bulbs we have supplied have practically always given satisfaction, and our prices are moderate.

Illustrated descriptive List of Dutch and Home-grown Bulbs free.

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SEED MERCHANTS and NURSERYMEN,
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CUTBUSH'S MILL-TRACK MUSHROOM SPAWN.

—Too well known to require description. Price, 6s. per bushel (1s. extra per bushel for package), or 6d. per cake; free by parcel post, 1s.

None genuine unless in sealed packages and printed cultural directions enclosed, with our signature attached. W.M. CUTBUSH AND SON (Limited), Nurserymen and Seed Merchants, Highgate Nurseries, N.

WINTER-FLOWERING PLANTS

HEATHS, CAMELLIAS and other Plants, beautifully set with Flower-buds.

Prices on application.

DICKSONS

(LIMITED), Nurseries, CHESTER.

STRAWBERRIES.

Strong Roots, 4s. per 100. Plants in small pots, 16s. per 100; ditto in large pots, 25s. per 100. Descriptive LIST free. RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

PALMS, CLEAN AND HEALTHY.

WILLIAM ICETON has a very extensive stock of all the leading kinds, in fine condition; 20 houses being devoted to their growth, many being fit for exhibition of the following varieties:—*Arecia lutea*, *Cocos flexuosa* and *Weddelliana*, *Kentias* of all kinds; *Scaevola elegans*, *Latania borbonica*, *Phoenix reclinata*, *rupicola*; also a very large assortment of Palms in 60's and 48's for table. Inspection invited.—Putney Park Lane, S.W.; and 129 and 130, Flower Market, Covent Garden, W.C.



For Market and Private Growers.

ORNAMENTAL TREES, SHRUBS, ETC.

Descriptive CATALOGUES Post-free.

J. CHEAL & SONS

Crawley, Sussex.

SPECIAL CULTURE OF FRUIT TREES AND ROSES.

A Large and Select Stock is now offered for Sale. The Illustrated and Descriptive Catalogue of Fruits post-free.

The Descriptive Catalogue of Roses post-free.

THOMAS RIVERS & SON,

THE NURSERIES, SAWBRIDGEWORTH, HERTS.

“ONLY THE BEST.”

CHEAP BULBS FOR FORCING, &c.

	Per 100.—s. d.
ROMAN HYACINTHS	15 0
DOUBLE ROMAN NARCISSUS	8 0
PAPER WHITE NARCISSUS	7 0
VAN THOL TULIPS	4 6
SECOND-SIZE NAMED HYACINTHS for forcing, our own selection, assorted colours	21 0
UNNAMED HYACINTHS for bedding	14 6
15 per cent. discount, cash with order. Carriage paid. NAMED HYACINTHS, best quality, equally cheap.	

GARAWAY CO.,

DURDHAM DOWN, CLIFTON,
BRISTOL.

Hooper's
The
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free to
buyers
Excellent
Seeds and
Bulbs at low
prices
Covent Garden
Seed Warehouse

ROSES—20 ACRES,

Well-rooted, many-shooted, truly named, of matured vigorous growth, and of the best kinds. Bushes, R. S. & Co.'s selection, 8s. per dozen; 60s. per 100. Packing and carriage free for cash with order.

These World-famed ROSES cannot fail to give the greatest satisfaction.

ROSES IN POTS;

all the best New and Old English and Foreign sorts, from 18s. to 36s. per dozen.

Descriptive List free on application.

RICHARD SMITH & CO.,

Nurserymen and Seed Merchants,
WORCESTER.

ORCHIDS!

Selections of the above, from Borneo, Manilla (Philippines), Bangkok, Java, Rangoon (Burmah), &c., to the extent of £5 and upwards, packed and shipped (at consignee's risk) on receipt of order with remittance. Address,

THE ORCHID NURSERY COMPANY,

UPPER WILKS ROAD, SINGAPORE.

Special care given in packing.

NEW VARIETIES ALWAYS ON HAND.

RHODODENDRONS.

An immense Stock. 200 Named Sorts, from 1 foot to 5 feet high, including many varieties of our own raising, in addition to the best varieties of other raisers.

AZALEAS.

Many thousands of *Azalea mollis* and other choice varieties, well-budded plants.

Silver-variegated, Hodgins' and other Hollies. Of these we have a surplus stock, and can offer them at low prices.

Priced Descriptive CATALOGUE of the above and General NURSERY STOCK free on application.

ISAAC DAVIES & SON, Nurserymen, ORMSKIRK.

CRANSTON'S NURSERIES,

KING'S ACRE, near HEREFORD.

Specialties,

ROSES AND FRUIT TREES.

FIFTY ACRES UNDER CULTIVATION.

CRYSTAL PALACE GREAT FRUIT SHOW FIRST PRIZE

awarded us for the finest Collection of Apples (150 dishes). List of sorts, also Descriptive Catalogues, on application to

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TEA ROSES { A grand stock, in 5-in. pots, 12s. & 18s. doz.

GRAPE VINES { A grand stock, in 7-in. pots, 24s. & 30s. doz.

Black Hamburg and other varieties. Suitable for fruiting in pots, 10s. 6d. each. Suitable for planting vineries, 5s. and 7s. 6d. each.

FERN S { A fine stock, in 5-inch pots, 12s. per dozen.

{ A fine stock, in small pots, 4s. per dozen.

Catalogues on application.

THE LIVERPOOL HORTICULTURAL COMPANY (JOHN COWAN), LIMITED,

THE VINEYARD and NURSERIES, GARSTON,
NEAR LIVERPOOL.

FENCES—MYROBALAN or CHERRY PLUM

(PRUNUS MYROBALANA) is the best stuff for mending old fences or making new ones. Grows well on poorest soils. Shoots very hard and spiny. Prices range from 12s. per 1000 to 10s. per 100. Full particulars on application to EWING & CO., Havant, Hampshire.

SMALL SHRUBS and CONIFERÆ.—

Araucaria imbricata, 10 to 12 inches, 50s. per 100; *Abies Douglasii*, 1-yr., 4s. per 100; *A. orientalis*, 1-yr., 30s. per 100; *American Arborvitæ*, 1½ foot, 60s. per 100; *Sweet Bay*, 1-yr., 30s. per 100; *Scarlet Chestnut*, 1-yr., 6s. per 100; *Cupressus macrocarpa*, 1-yr., 30s. per 100; *Lawsonii*, 18 inches, 60s. per 100; *erecta viridis*, 4 inches, 30s. per 100; *do.*, 1 foot, 12s. per 100; *stricta*, 1 to 1½ foot, 12s. per 100; *Allium*, 1 foot, 14s. per 100; *Cedrus atlantica*, 1-yr., 1-yr. transplanted, 10s. per 100; *C. Deodora*, 1-yr., 7s. per 100; *Eucalyptus m. cantharidis*, 1-yr., 14s. per 100; *Laurel* (common), 2-yr., 20s. per 100; *Portuguese Laurel*, 1-yr. transplanted, 20s. per 100; *Colchic Laurel*, 1-yr., 25s. per 100; *Laurel rotundifolia*, 1-yr., 25s. per 100; *Limes*, 1-yr. transplanted, 16s. per 100; *Pinus Cembra*, 3-yr., extra, 16s. per 100; *P. insignis*, 1-yr., 3s. 6d. per 100; *P. excelsa*, 1-yr., 4s. per 100; *P. Nordmanniana*, 1-yr., 30s. per 100; *P. Jeffreyi*, 1-yr., 8s. per 100; *P. Mastersiana*, 1-yr., 10s. per 100; *P. Strobus*, 2-yr., 2s. per 100; *Oak Evergreen*, 1-yr., 30s. per 100; *Scarlet Oak*, 1-yr., 3s. per 100; *Privet ovalifolium*, 8 to 9 inches, 10s. per 100; *Retinospora plumosa*, 10 to 12 inches, 10s. per 100; *R. squarrosa*, 8 to 9 inches, 8s. per 100; *do.*, 1 foot, 12s. per 100; *Thuia Lobbi*, 8 to 10 inches, 30s. per 100; *do.*, 15 inches, 45s. per 100; *T. dolabrata*, 8 to 9 inches, 80s. per 100; *do.*, 10 inches, fine, 12s. per 100; *T. Ellwangeriana*, 6 to 8 inches, 6s. per 100; *Veronica Traversii*, 6 to 8 inches, fine, 6s. per 100; *English Yew*, 1-yr., 1-yr. transplanted, 20s. per 100; *do.*, 8 to 10 inches, 7s. per 100; *Irish Yew*, 6 to 9 inches, 10s. per 100.

GARLES MITCHELL, Nurseryman, Stranraer.

CLEARANCE SALE (at sacrifice) of

PALMS, DRACENAS, &c.
LATANIA BORBONICA and *PHENIX RECLINATA*, 12 inches high, 4s. per dozen, 30s. per 100. Package and carriage free.
LATANIA BORBONICA, *SEAFORTHIA ELEGANS*, *CORYPHA AUSTRALIS*, and *PHENIX RECLINATA*, 20 to 24 inches high, 1s. 6d. each, 16s. per dozen; same kinds, 2 feet 6 to 3 feet high, 3s. to 5s. each.
Handsome PALMS, 4 feet high, 18s. each.
" " 6 feet high, 40s. each.
Twelve assorted PALMS and DRACENAS, averaging, with pots, 24 inches high, in wood case, free, 18s.; six do., 10s. KENTIAS, 3s. to 21s. each.
DRACENAS, 24 inches to 5 feet high, 2s. to 40s. each.

Inspection invited.

GARDENER, Holly Lodge, Stamford Hill, N.

EUONYMUS (Green).—50,000, all nice bushy

well-grown Specimens, 9 to 36 inches, £1 to £10 per 100.

J. J. CLARK.

Goldstone Farm, Brighton.

TREES and SHRUBS for the Sea Coast.

CATALOGUE free on application.—RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

W. GORDON, IMPORTER OF ORCHIDS.

An Immense Stock of recently-imported Plants compels a sale of the established plants to make room. They have not yet flowered, but are all flowering plants, and must be sold at a great sacrifice. Very valuable varieties are certainly to be obtained, and great bargains. See Public Journals for high prices recently obtained. The Special Offer affords a paying investment to anyone with glass at command, which should not be overlooked. Such plants may never again be offered to the public and the Trade. LILIES, Silver Banksian Medal, Silver Metal National Christenthum Society, September, 1885. JAPANESE MAPLES, Silver Banksian Medal.

TREE PEONIES, 7 First-class Certificates.
" IRIS, most gorgeous, 4 First-class Certificates.
CATALOGUES of the above on application to The Nurseries, Amyand Park Road, Twickenham.

OLD-FASHIONED HEDGES.—English

Yews, bushy, and with a profusion of fibrous roots, 1½ to 2 feet, 6s. per dozen, 35s. per 100; 2 to 2½ feet, 8s. per dozen, 50s. per 100; 2½ to 3 feet, 9s. per dozen, 60s. per 100; 3 to 3½ feet, 12s. per dozen, 84s. per 100. Prices of larger sizes and other Evergreens, suitable for Hedges—e.g., Tree Box, Holly, Laurel, Privet, Cypress, Juniper, Thuia, &c., on application.—RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

"PAUL ENGLEHEART."

Rooted Layers of the above fine Crispum bedding CLOVE CARNATION are now ready to lift. The variety can be confidently recommended as possessing all the good qualities of the "Old Clove," with much greater vigour of constitution, and a dwarf sturdy habit, which REQUIRES NO STICKS.

Price, 2s. each, 18s. per dozen, 9s. half-dozen. GILBERT DAVIDSON, Ammanford, R.S.O., Carmarthenshire

The only complete Collection of Daffodils existing.

BARR'S NEW DAFFODIL CATALOGUE

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Containing a full Descriptive List of High-class and Distinct Daffodils only, and also a Descriptive List of Beautiful Hardy Daffodils, at greatly reduced prices. This Catalogue also contains Barr's Specialty Collections of Iris, Lilies, Pæonies, Michaelmas Daisies, Plantains, Lilies, Day-Lilies, and a select List of Showy Hardy Herbaceous Plants.

BARR AND SON, 12 and 13, King Street, Covent Garden, W.C.

CREEPERS FOR WALLS.—By planting

what is suitable, an ugly object may easily be made beautiful. Most being in pots, can be sent and put out at any time. Descriptive LIST and advice free.—RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

A. LIETZE, Rio de Janeiro.—New PRICE

LIST for PALM SEEDS, Post-free to all applicants, from ADOLPH V. ESSEN AND CO., 73, Gr. Reichenstr. Hamburg.

1000 EUCHARIS AMAZONICA, flowering

bulbs, perfect healthy and free from disease; also 50 PANCATIUM FRAGRANS. Offers requested.

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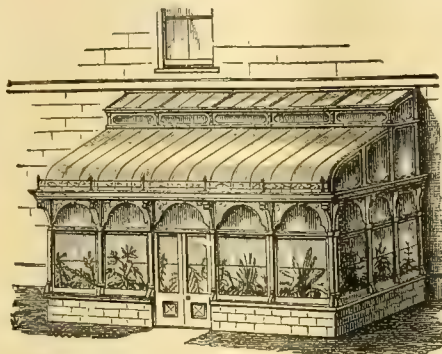
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THE
Gardeners' Chronicle.

SATURDAY, NOVEMBER 3, 1888.

COMPENSATION FOR ORCHARD PLANTING.*

IT is, no doubt, solely because of the great interest which for many years I have taken in compensation for tenants' improvements, that I have been invited by the committee of this Conference to read a paper upon a subject of the practical details of which I probably know less than any person in this room. I must confess that I felt a strong disinclination to place my views before a body of experts, and if any one but your Secretary, who has been very kind to me on more than one occasion, had asked me to come forward, I should have declined. For, should any one ask me what I know about orchard planting, I should have to reply—Next to nothing. When I took a farm some years ago I planted some fruit trees, and had them in fine bearing condition by the time that I quitted the holding, to the advantage of my successor. More recently I have planted some Apples and Pears in a suburban garden, and have scarcely seen a blossom on any of them for the last three years. However, my subject is not planting, but compensation for planting, and upon that topic I have very decided views, and few persons, I believe, have given more thought to it. Still, as my object is to elicit discussion rather than air my own opinions, I shall be as brief as possible in my remarks.

Cultivators of the soil are constantly being told that they should grow more fruit. Ordinary farming does not pay, and is not likely to pay, it is contended, and farmers should turn their attention to the production of vegetables and fruit. Now, there is no reason to fear that too many farmers will take that advice, the rank and file of the class being very slow to make any important changes in their routine. It is obvious that if even a twentieth part of the land of the United Kingdom were devoted to the growth of vegetables and fruit, the market would be glutted, unless the nation were converted to vegetarian-

* A paper read at the Chiswick Fruit Congress, by William F. Bear, Streatham.

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ism. But, as I have said, there is no reason to fear that too many farmers will become market gardeners and fruit growers, and there will be all the less reason to expect this if, as I believe, a turn in the tide of ordinary farming as a business has set in—whether for a long or for a short period it would be rash to predict. The fear is—to confine myself to fruit-growing—that, in spite of the “boom” which appears to have been started in that industry, its development will be slower than is desirable. There are many reasons why it should be so. Enough has been said in recent years, and said over and over again, to prove that it is desirable to grow more fruit, and especially more choice Apples and Pears, in this country. The question is—How to do it? Now, in my opinion, Mr. Rivers, in his speech as Chairman of the Fruit Growers' Conference held the other day in the Crystal Palace, went the right way to work to show how not to do it. Alluding to the obstacles to fruit-growing, he is reported to have said that landlords, land laws, railway rates, and middlemen have nothing to with them. A more astounding assertion I have seldom read. In my opinion they have pretty well all to do with them. It is our land laws which render fruit-planting an unsafe speculation, and high railway rates and a bad system of distribution (the middleman element) which renders fruit-growing less profitable than it should be. I think my friend, Mr. Albert Bath, was on the right tack in the paper which he read at the first Crystal Palace Conference, and not Mr. Rivers, who declared ignorance to be the fundamental hindrance to extended fruit culture. No one is a more earnest advocate of agricultural and horticultural education than I am, and no one is less disposed to say anything to underrate the advantages of either branch of instruction. But, in my opinion, for one cultivator of the soil prevented from growing fruit by ignorance, there are twenty who are deterred from lack of security to capital invested in planting, high railway rates, which render it unprofitable to grow anything except high-priced early produce if it has to go a long distance by rail, and our abominable system of distribution, which gives more profit to the middleman for a day's, or sometimes for an hour's work, in handing fruit on to customers, than to the producer who spends a year in growing it.

THE LAND-LAWS.

Returning to the question, How is fruit growing to be increased? I must pass by, as beyond the range of my subject, all details relating to such obstacles as high rail charges and the middleman's undue share in the amount paid by consumers for fruit. In considering how to answer the question asked, another at once crops up—Who is to plant? Now our land laws are directly opposed to planting as far as they go. By encouraging limited ownership through the settlement of estates they render it disadvantageous to most landowners to plant, because the limited owners, who form the great majority of the landlord class, by sinking their capital in orchard planting, would reap only a transitory benefit themselves, and that only if they lived several years, while they would enrich the already too highly favoured heirs to their land at the expense of their younger children or other relatives. For reasons which it would take me very wide of my mark to-day to state, I am not in favour of increasing the powers and privileges of the owners of land by making them absolute owners, and I allude to limited ownership merely to show that under it there is no reason to expect extensive orchard planting by landlords. We come now to the tenants, and are thus brought within the precise confines of the subject of this paper.

Mr. Rivers appears to argue that the land laws have nothing to do with the indisposition of cultivators to plant fruit, because in suitable situations

and under proper management fruit-planting will pay with laws and rents as they are. No doubt it will, provided that the planter has a long lease, and lives long enough to reap the fruits of his enterprise, or if—and this is a very large “if”—he can induce his landlord to consent to the planting, so that he will be entitled to compensation under the Agricultural Holdings Act, or to arrange otherwise to compensate him or his heirs when he quits his holding or dies. These “ifs” and “ors,” however, are shadowy particles, and a substantial and disagreeable “but” nearly always comes in to put them to flight. Without the consent of the landlord in writing the law fails to afford the fruit planter, whether he be a large farmer or an allotment holder, a halfpenny of compensation for capital sunk in the planting of fruit; and I doubt whether that consent can be obtained by one out of a hundred tenants. The tenant, then, has no legal security for fruit-planting, and if he plants without security he incurs a very serious risk. It may be contended, perhaps, that a long lease affords a sufficient security; but that I entirely dispute, because a man may die before he has reaped any benefit from his expenditure, and it may be inconvenient for his executors to carry on his business, or he may be obliged to remove, either from getting into difficulties or from some less disagreeable cause. Therefore a lease is but a delusion as security unless it contains compensation clauses, or embodies a right of assignment. Moreover, a lease never affords adequate security, unless it is a very long one, even if the holder of it farms it out. Even then, at the end of the lease, the improving tenant—or rather, the law—hands over to the landlord property which rightly belongs to himself.

COST OF PLANTING.

It is not necessary to say before my present audience that the expense of orchard planting is no light one, or to point out some years must elapse before the planter can hope to obtain a satisfactory return on his outlay. Probably there is no gentleman here who could not tell me a great deal more about the cost of planting than I can tell him. But as there may be readers of this paper who are not experts, and who may like to have the estimates of experts on the cost of planting different kinds of fruit, I submit such estimates. There is no lack of them in print; but most of those in my possession are two, three, or more years old, and expenses vary with the times. I therefore asked Mr. Charles Whitehead to give me his estimates for the present time, and I have to thank him, a busy man—though for that matter busy men are generally the most obliging in affording information—for kindly complying with my request. In giving Mr. Whitehead's estimates I must point out that they do not include the cost of preparing the land, or any portion of the rent, tithe, rates, and labour expenses after planting which fall due before the trees come into profit.

Cost of Planting One Acre of Fruit.

Standard Apple trees, 22 feet apart (90 trees)	£ s. d.	£ s. d.
Planting and staking	6 0 0	
Plums or Damsons, 18 feet apart (134 trees)	7 15 0	8 17 6
Planting and staking	3 15 0	
Apples and Plums, mixed, 20 feet apart (108 trees)	7 0 0	11 10 0
Planting and staking	3 5 0	
Bush fruit trees under Apples, 1440 to the acre, 5½ feet apart, at 13s. per 100	9 0 0	
Planting bush trees	2 15 0	
Ninety Apples and planting and staking	8 17 6	20 12 6
Bush fruit with Plums or Damsons—1440 bush fruit trees	9 0 0	
Planting ditto	2 15 0	
134 Plum or Damson trees, and planting and staking	11 15 0	23 10 0
Strawberries, 39×18 inches=11,616 plants, say, 12s. 6d. per 1000	7 4 3	8 19 3
Planting	1 15 0	
Strawberries, 30×12 inches=17,424 plants, at 12s. 6d.	10 18 6	
Planting	2 7 6	13 6 0
Raspberries, in rows 4 feet apart, three plants to a hill or centre=10,800 plants	10 17 8	
Planting	2 5 0	13 2 6

Mr. Whitehead adds:—“All these rates are according to present cost of fruit trees and present labour wages. The land, of course, must be deeply ploughed, and in many cases a subsoil plough should follow the ordinary plough. Harrowing also is necessary to get a level surface. Upon land in cultivation a good dressing of manure would be necessary, say 20 ton per acre. Some land would require trenching.”

Mr. Albert Bath, of Sevenoaks, has also kindly sent me some estimates, which represent the actual cost of planting now being carried out under his superintendence:—

Cost of Manuring, Ploughing, Subsoiling Trees, and Planting, per Acre.

Apple plantation, trees 20 × 20 feet apart	£31 0 0
Plums, 20 × 20 feet	18 16 0
Pears about same as Apples	21 0 0
Mixed plantation of Apples, Pears, Plums, 20 × 20 feet with bottom fruit—Currants and Gooseberries	35 8 0
Raspberries (manuring and cultivation as above, excepting sub-soiling)	17 5 0
Strawberries, ditto	13 7 0

Mr. Bath remarks that fruit trees and Raspberry canes are as cheap as they were six years ago, but that Apple trees are in great demand, and will soon be dearer.

Although the planting of Strawberries and Raspberries does not come under the head of orchard planting, the estimates for these crops are allowed to appear in the list. I may add that Mr. William Vinson, of Ovington, Kent, has kindly given his estimates of the cost of planting of an acre of these varieties of soft fruit. Including the first year's cultivation, rent, rates, &c., he says, Raspberries cost about £15 an acre, and Strawberries about £10.

The veriest outsider must see from these figures—and especially from those relating to orchard planting—that it would be very risky for a tenant to engage in that enterprise without security as to compensation for the unexhausted value of his improvements; and it is to be borne in mind that Mr. Whitehead's totals should be larger than they are, because they do not include additional expenditure incurred while waiting for the trees and bushes to bear.

TENANT'S COMPENSATION.

How, then, should compensation be given? Personally, I am a strong advocate of the plan of allowing the tenant to sell his improvements in the market, with preemption to the landlord. Elsewhere, and on many occasions, I have shown how I would safeguard the just claims of landlords in making the necessary arrangements for free sale. There is not time to allow of my going into details upon that topic to-day. Moreover, to do so would be needless repetition, for are they not written in the chronicles of the Farmers' Alliance—an association which would have done great things for the farmers and fruit growers of the country if they had sufficiently supported it? In my opinion, free sale is far superior to the valuation system. When told that it involves dual ownership in land, I always say, in reply, that where two persons invest their capital, and inextricably mix it in the same piece of land, you must have dual ownership or confiscation. There is absolutely no other alternative; and if you have a right to compensation by valuation, you have dual ownership just as much as if you have free sale. Again, I am told that free sale has not succeeded in Ireland; but the reply to that is that it was a splendid success in Ulster before Mr. Gladstone meddled with it, and, in my opinion, muddled it. Having visited Ulster, I say that the results of free sale there are wonderful. Considering the disadvantages in respect of situation, climate, and often of soil also, under which the farmers in that province laboured, what they did, stimulated by the security afforded to them by free sale, long before the Land Acts were passed, is a striking proof of the value of the principle.

It must be confessed, however, that free sale is not popular in this country. It may further be admitted that the system of compensation by arbitration and valuation can be carried out more satisfactorily in relation to fruit trees than in the case of ordinary farm improvements. The trees are on the ground,

and can be counted and valued, and their condition indicates how they have been manured and otherwise treated. In some parts of Italy it is the practice to make an inventory of all the trees on a holding when the tenant enters, describing the number of trees of each kind in each enclosure, indicating the condition of the whole in general, if not of each, and valuing them. When the tenant quits, a similar inventory is made, and he is entitled to receive, or required to pay, any difference in the two valuations, according to whether he has caused appreciation or deterioration during his tenancy. Whether or not any allowance is made for natural improvement on the one hand, or deterioration similar to the reasonable "wear and tear" in a house, on the other, I cannot say. Perhaps some such plan could be adopted in this country.

The simplest reform, however—and I believe that fruit growers and farmers can get it if they will but act together—would be that of striking out the stipulation in the Agricultural Holdings Act which requires the landlord's consent to entitle the tenant to compensation for planting fruit trees, and for other permanent improvements. But as I have always been a friend—an unappreciated friend—to landlords, I must state one objection to this proposal. It would be hard to come down upon a poor, embarrassed landlord, or upon one fairly well-to-do, but only a tenant for life, for £20 an acre or more on 100 or 200 acres, in the form of compensation to an outgoing tenant. Therefore, it seems to me that if the tenant is to be entitled to compensation for costly improvements made without the landlord's consent, the latter should have the option of presenting the right of free sale to the former. Or, perhaps, as landlords have always opposed free sale, it will be but a fitting lesson to them to make the amendment in the Agricultural Holdings Act just suggested, and to leave them to sue for free sale which, I fancy, under the altered circumstances, many of them would very quickly demand. At any rate, in one way or another, I contend, it is the right and the duty of the public to insist that the law of the land shall be so altered as to encourage, instead of hindering, the greatest profitable development of the resources of the soil. They should not recognise the right of a man who is allowed to "hold an estate in land"—the nearest approach to absolute ownership recognised by the law of this country—to keep it as a desert waste, or anything like a desert waste, if it will pay for improvement, and there are capitalists able and willing to improve it. Or, to limit the application of this principle of public right and duty to the subject before us, I say that the people of this country, desirous as they are to see planting increased, should insist on their representatives in Parliament, without unnecessary delay, so amending or adding to the statutes as to afford to every cultivator of the soil full security for the unexhausted value of any improvement in the planting and culture of fruit which he is able and willing to carry out.

PLANT NOTES.

OXALIS BOWEL.

THERE are a great number of really pretty-flowered Wood Sorrels, and Kew is the only place in England where a representative collection of them may be seen. One of the very best of them is that above named. It is a free-growing plant, with trifoliate leaves 4 inches across on stalks 8 inches long; the leaflets are broad obovate, 2½ inches across, bright green, rather fleshy. The flowers are in umbels on the end of drooping peduncles 1 foot long. There are about a dozen flowers in each umbel, each having a stalk 1½ inch long; the corolla is fully 1 inch across, perfectly circular, and coloured deep rose with a yellow eye. To grow this plant to perfection, it should be planted in a border, as it is at Kew in the succulent house, where several clumps of it have been in flower for some weeks. Probably it would do equally well in baskets. It is a plant which may be recommended as a first-rate winter-flowering greenhouse Oxalis.

BEGONIA GERANIODES.

This has the reputation of being a small uninteresting plant, with white flowers, and a delicate constitution, and we have never seen it grown as a pot plant when it did not deserve that reputation; but when planted in a border in a warm, dry, sunny greenhouse, it is a really charming Begonia, which is saying a good deal in these days of Begonia wonders. Two years ago about fifty tubers of *B. geranioides* were imported direct from Natal to Kew. They were planted in a border in a Succulent-house under the conditions which have been so successful with Streptocarpuses. The Begonias are in flower now. They have kidney-shaped leaves, 6 inches across, on erect stalks 8 inches long. The flowers are on erect leafy panicles a foot high, and each flower is 1½ inch across, snow-white, with a small button-like bunch of bright yellow stamens in the middle. Each plant has quite a sheaf of blossom, and as every flower faces upwards, the effect is charming. The female flowers have five segments, and a large three-winged white ovary. These plants have been in flower about a month, and they are still very fine.

CASSEBEERA TRIPHYLLA.

This Fern has just been added to the cultivated collection at Kew. It is quite distinct from any other Fern known to me, and it is pretty enough to be noted here. The fronds are 4 inches high, erect; the stalks wiry and shining black, the blade trifoliate, each leaflet 1½ inch long, and less than a quarter of an inch wide, crenulate, deep shining green. The sori are in close rows along the margin of the segments, on the underside. The genus is related to Cheilanthes. The plant at Kew is a compact little tuft of fronds, and it appears to thrive perfectly in a dry, sunny greenhouse. It is a native of Brazil. *W. Watson.*

NEW OR NOTEWORTHY PLANTS.

CYPRIPEDIUM CENANTHUM, JOSEPHINE JOLIBOIS ×, *hyb. gall.*

THIS comes very near to *Cypripedium ceanthum* superbum. But its flower is larger, and the staminode is quite distinct. The leaf at hand is quite of Harrisianum shape and is covered with rather obscure, dark, interrupted, broken bars. The bract is much shorter than the hairy, green, india-purple ribbed ovary, green with indian-purple lines and freckles. The dorsal sepal is very broad, adorned with an upper white, broad margin, with numerous india-purple veins on the light green, inferior part, and the veins are covered with darker spots of the same colour, which give a moniliform appearance. Petals nearly ciliate, ligulate acute, of a pallid ochre ground colour, greenish at the base, where there are numerous roundish dark, india-purple spots. The whole traversed by ten dark, purplish-brown nerves with some short, transverse, oblique bars in the anterior part running from one longitudinal nerve to the next. Dorsal sepal narrow, shorter than the lip, with india-purple nerves outside on the lightest greenish ground, quite covered with dense short purple hairs, while inside these are but a few short lines of India-purple freckles, not surpassing the base. The lip is that of *Cypripedium Harrisianum*, very pallid, having much olive colour underneath, some light brownish-purple above, and an ochre-coloured margin around the mouth. The involved margins of the stalk have numerous light, round spots; similar ones are to be seen in the interior, covered with very numerous dark hairs. The staminode is yellow, finally light-red-dish, rather retuse in front, with two large lateral lobes and a very small apiculus in the sinus of both.

Mr. R. Measures, of The Woodlands, Streatham, the *facile princeps* of Cypripedists, has raised this from *Cypripedium Harrisianum* and *C. insigne* Chantini.

There can be no doubt if we knew how near all these varieties of *Cypripedium insigne* stand one to another, that those children of *insigne* and *Harrisianum* should be kept under the common name of *C. ceanthum* ×. I have good reason to believe that this is also the view of Mr. R. Measures. Allusion is made to a similar plant in the *Journal de la Société*

Nationale d'Horticulture de France, 3rd series, ix., May, 1888, p. 206. Mons. M. R. Jolibois, jardinier en chef au Luxembourg, crossed *C. Harrisianum* and *C. insigne* Chantini in 1882, and the first flower opened, after a very long period in bud, on April 15, 1888. It was dedicated to Madame Josephine Jolibois, the mother of Mons. Jolibois. I suppose it must be the same, though there is no full description given. Monsieur R. Jolibois states, that some plants have simply green leaves, while others show "les feuilles maculées," which, no doubt, refers to the darker broken bars, above-mentioned. *H. G. Rehb. f.*

CYPRIPEDIUM ELLIOTTIANUM, n. sp.

This glorious new introduction of Messrs. Sander & Co.'s, from the Philippines is now in bloom at the St. Albans Nursery. The plant is of noble habit, resembling *C. Stonei*; leaves bright green, from 1 foot to 15 inches long, and 1½ to 2 inches broad; the older stout purple-dotted scape, over 1 foot in height, bore evidence of the presence of five flowers, but on that in bloom only two. The bracts are spathaceous, and very showy, from 1—1½ inch long, whitish, with narrow chocolate lines. The 2-inch long ovaries bear handsome flowers, which call to mind the beautiful *C. Rothschildianum* and *C. prastans*, from both of which, however, it is widely distinguished. The dorsal sepal is 1½ inch wide and 2½ long, pointed, ivory-white, with fifteen dark crimson lines of various lengths; the lower sepals are similar, but smaller. The lip is nearly like that of *C. Stonei* in colour and shape, and has the same fold on the under side; ivory-white, delicately veined and tinted rose. The petals are also white, spotted in the upper portion with crimson blotches, which run into three or four narrow lines to the points, the upper portions being wavy and ciliated, much as in *C. Sanderianum*. The staminode (unless abnormal) is narrow and curved under, as in *C. Rothschildianum*. Altogether it is a very beautiful species, which seems to embody the good features of most of its section. *James O'Brien.*

THE GENUS POLYCYCNIS.

THIS is a highly curious little genus of Orchids, occasionally met with in cultivation, though perhaps less commonly at the present time than some years ago, when *Gongoras*, *Catasetums*, *Cynoches*, and other allied genera, were more in fashion. The rare *P. lepidus* is just now flowering in the Kew collection, thus furnishing a convenient opportunity for giving a brief account of the known species of the genus. *Polycychnis* was described in 1855 by Professor Reichenbach (*Bonplandia*, iii., p. 218), the name being derived from *polys*, many, and *kyknos*, a swan, in allusion to the numerous flowers on the raceme, each having a slender, gracefully curved column, like the neck of a swan; in fact, the genus is very closely allied to *Cynoches*, the swan's-neck Orchids, though at present it has not been known to play such singular freaks as producing sometimes one kind of flowers, and at other times totally different ones, occasionally varying the proceedings by developing both kinds of flowers at once. One may perhaps say that it bears the same relation to *Cynoches* that *Mormodes* does to *Catasetum*, for *Mormodes* only produces one kind of flowers, while its more sportive relation has no fewer than three kinds, and more than once accomplished the seemingly impossible feat of presenting to Dr. Lindley flowers of two different genera on the same inflorescence—a freak which that accomplished botanist found not a little perplexing. However, we are aware of these tricks at the present day, and shall, perhaps, learn more of the history of this strange genus when some one will take in hand the cultivation of as many of the species as can be got together. Some of the species are certainly handsome, all of them grotesque, and few genera are more imperfectly known. But to return to our subject. *Polycychnis* has more of the general appearance of *Gongora* than of any other genus, though its free upper sepal readily distinguishes it; for in *Gongora* the upper sepal and column are united for some distance, one appearing

to arise from the other. The flowers are numerous, and borne in long, more or less arching, or pendulous racemes from the base of the pseudobulbs. Five species have been described, from Costa Rica, New Granada, and British Guiana, and all of them have been in cultivation at one time or another. *P. vittata* was the earliest known species, having been described by Lindley in 1841, under the name of *Houllettia vittata*, from a specimen collected in the Acaray Mountains, in British Guiana, by Schomburgk, and which flowered in the nursery of the Messrs. Loddiges at Hackney.

Eight years later a second species appeared, and was described by Lindley as *Cynoches barbatum*, from a specimen sent by Linden. It also flowered the same year in the rich collection of Mrs. Lawrence at Ealing Park, this plant being the one represented in the *Botanical Magazine*. About three years later a third species flowered with the Messrs. Rollissons, having been introduced by Linden from Columbia. This was described by Lindley as *Cynoches musciferum*, in allusion to the flowers bearing a resemblance to some kinds of flies. The genus *Polycynis* was established for the two last-named species in 1855, and a few years later *Houllettia vittata* was added. In 1869 a fourth species, *P. lepida*, was described in these columns, having been found by Wallis in New Granada, at an elevation of 6000—7000 feet above sea-level. Two years later a fifth species was added to the list, namely, *P. gratioiosa*, which was introduced from Costa Rica by Endres, and flowered in the nursery of Messrs. James Veitch & Sons, at Chelsea. It would be interesting to know what has become of the last-named plant, as I have never come across a specimen of it. Appended is an enumeration of the species, with their synonymy, &c.

1. *Polycynis vittata*, Rchb. f., in *Walp. Ann., Bot. Syst.*, vi., p. 618; *Houllettia vittata*, Lindl.; *Bot. Reg.*, xxvii., Misc., p. 47, t. 69.—Native of British Guiana. Flowers yellow striped with chocolate.

2. *P. barbata*, Rchb. f., in *Bonplandia*, iii., p. 218. *Cynoches barbatum*, Lindl., in *Jour. Hort. Soc.*, iv., p. 268; *Bot. Mag.*, t. 4479.—Native of New Granada. Flowers light yellow, copiously spotted and freckled with brown.

3. *P. musciferum*, Rchb. f., in *Bonplandia*, iii., p. 218. *Cynoches musciferum*, Lindl., in *Lindl. and Paxt. Fl. Gard.*, iii., p. 28, fig. 248.—Native of New Granada. Flowers very similar to the preceding in colour, but much smaller.

4. *P. lepida*, Linden and Rchb. f., in *Gard. Chron.*, 1869, p. 1038; *Illustration Horticole*, n. ser., p. 100, t. 19.—Native of New Granada. Much resembling the preceding, but with the auricles at the base of the lip more developed, but straight, not curved as in that species.

5. *P. gratioiosa*, Rchb. f., in *Gard. Chron.*, 1871, p. 1451.—Native of Costa Rica. Said to be in the way of *P. lepida*, yet very distinct by the very short claw of the lip, and the anterior part of the same organ. Flowers brownish-purple. *R. A. Rolfe*.

CATTELEYA PORPHYROPHLEBIA ×, Rchb. f.

I am indebted to Messrs. James Veitch & Sons for a two-flowered peduncle of this lovely hybrid, from a plant which has just flowered in their nursery. It is derived from two singularly pure and distinct species, *C. intermedia* and *C. superba*, which unfortunately have the character of being both bad growers. The offspring is said to have a singularly good constitution, one of those seemingly inexplicable but fortunate features which has been before observed in similar instances. The sepals and petals are of a beautiful and delicate lilac, the front lobe of the lip rich amethyst-purple striated with paler purple; below this are two pale sulphur blotches, which are separated by a purple band that extends to the base of the lip. The name alludes to the rich purple veining of the lip. *R. A. R.*

TRADE NOTICE.

Mr. A. H. JOHNSON, formerly of H. & F. Sharpe and G. & W. Yates, and for the past six years with Messrs. Carter, Page & Co., London Wall, E.C., has been appointed Manager to Mr. S. F. Armitage, seed merchant, Nottingham.

PLANTING SAND-HILLS.

ON p. 447 of your issue for October 20, Mr. R. C. Townsend gives the results of his experience in the planting of sand-hills on the north-west coast, and calls in question some remarks of mine on the same subject in the previous issue which I sent to you in reply to a question by "Doubtful" in that of September 29. It appears to be Mr. Townsend's opinion that it is useless to endeavour to establish anything but the grasses I named on the sand-hills of the north-west, and even to do that he considers it is necessary to take much greater precautions than on the east coast, because the gales, he says, are ten times as numerous and twice as severe on the north-west as on the east coasts; also that "it is a very common occurrence to find chimney-pots, slates, tiles, and squares of glass smashed up in all directions."

Now, something of this kind occasionally happens many miles inland, and yet trees survive, and though it is a "very common occurrence" in Mr. T.'s district, yet, *mirabile dictu*, there were trees "just out in their first young leaf and looking well" at the beginning of June this year. A terrific gale then arose, and made them look "like a Scarlet Runner Bean which has had 10° of frost." I do not, however, gather from his remarks that the trees were killed, or even permanently injured, nor that they remained long in the frosted Scarlet Runner condition. He also says that the grass was turned by the same gale "as black as your hat;" but assuming that every blade of visible grass was killed, which is very unlikely, it by no means follows that the roots were hurt, or that the grass did not in the course of a very few days again become as green as grass ought to be. I imagine very many possessors of sand-hills would be very glad to get them covered with trees, shrubs, and grass, even though occasionally, and for short periods, the trees might look like Scarlet Runner Beans after 10° of frost, and the grass as black as the blackest hat that ever had a head inside it. No; it is not the wind that prevents the successful planting of sand-hills when once the shifting of the sand has been overcome, and to this extent at least I understand Mr. Townsend has succeeded. There are many plants that will thrive, though exposed to these sea breezes, that do not succeed inland at all. Mr. Townsend's failure to get vegetation to grow other than the maritime grasses before alluded to, and the common Willow, about as high as the grasses, is much more likely to be due to a want of plant-food in the sand to give the young plants a start. This want, however, in these days of concentrated and complete artificial manures, is one very easily supplied, even where it is almost practically impossible (and such places are rare indeed) to make use of any natural manures. Let "Doubtful" not be disheartened, and Mr. Townsend try again. I would by no means, however, advise either of them to put up walls to protect their young plantations on shifting sand-hills.

The first and greatest difficulty in successfully planting sand-hills has been overcome when the shifting of the sand has been prevented, and I admit that in some places this may be impossible, or, at least, impracticable. Mr. Townsend has, however, accomplished that in his district. What he has not been successful in accomplishing is in inducing a varied shrub and tree growth to thrive on his sand-hills. His letter supplies evidence that trees are not destroyed by the numerous and severe gales to which they are subjected, and that in early June of this year they looked well.

Where I am now writing—a little inland from the south coast—Japanese *Euonymuses* in exposed places suffered somewhat from severe frost last winter, but on Southsea Common, close to the sea, and fully exposed to the "dreaded sou'-westers," it is hardly too much to say that on the numerous specimens of this shrub planted there hardly a leaf was injured. In some parts of Norfolk the Japanese *Euonymus* is only half hardy, but on the beach at Yarmouth and the cliff at Hunstanton and Cromer it survives the

winters without injury, although unprotected in any way. In the wind-swept Orkneys and Shetlands we are told evergreens survive the winters which succumb to frost in the Midlands of England. Clearly it is not the winds from any quarter that we have to fear in planting sand-hills, always providing that the shifting of the sand can be prevented. Why, all round the coasts of Britain, even, I have no doubt, in Mr. Townsend's own district, evidences exist that many plants and shrubs, and even trees, thrive, in spite of the winds, better in the coast districts than elsewhere. Plants, however, will not grow in pure sand either near the sea or inland, and the sand-hills of the seacoast are, for the most part, nearly pure sand. On such it is necessary, just as it is on poor sandy soils inland, to provide plant food; this done, there are plants and shrubs specially designed by Nature for thriving on them. *J. E. E.*

THE MITCHAM PEPPERMINT AND LAVENDER CROPS.

MITCHAM, as is well known, has long been associated with the growth of perfume-yielding plants, a large extent of ground in that part of the county of Surrey being under cultivation of plants valued either as perfumes or for their medicinal properties.

Our contemporary, the *Chemist and Druggist*, in a recent issue, stated that the Peppermint plants this season were mowed instead of reaped, and some growers were using reaping-machines for the first time. Comparing the present with last year's crop after cutting, it is estimated that 1888 will prove to be a good season, but the distillers, notwithstanding, predict small yields of the stills, estimating about 7 lb. against about 9 lb. to 11 lb. last year, "But too much attention should not be paid to this fact; for although individual stills are yielding less than last season, the deficiency will, to a certain extent, be made up in the extra bulk of crop to be distilled; but this will, of course, entail some extra expense on the growers for distillation, at the same time the nett results after the whole crop has been distilled will equal last season." In the meantime higher prices are asked, namely, 30s. to 32s. 6d. per pound for the best new oil.

Lavender—the Mitcham produce of which is celebrated all the world over, the oil being of the finest quality, and fetching the highest price of any in the market—is described as bearing the largest and finest blossoms ever seen—almost, indeed, giant in size. The bloom in many parts was three times the size it was last year.

PLANT-NAMES A THOUSAND YEARS AGO.

THE following list of old English plant-names is taken from the *Epinal Glossary*. This Glossary is supposed to be of the beginning of the eighth century, so that the list of plant names is earlier in date than those already printed in Professor Earle's excellent little book on *English Plant-Names*, in which the earliest is of the tenth century.

It should be remembered that the list does not pretend to be a complete list of English plant-names of that period. The plant-names are only a small portion (about an eighth) of the entire Glossary, and the business of the compiler was, not to give the Latin for all English words, but to give the English translation of certain Latin words which he met with in his reading, of which the greater part seems to be taken from Pliny; so that, unless he found a plant name in his Latin author, it would not come into his Glossary.

Of the philological value of such lists I need say nothing, as Professor Earle has said all that is necessary. I give the list as a matter of interest for botanical students.

I have, of course, generally given the exact words of the old writer, but in a few cases I have not thought it necessary to follow him so exactly as to give his evident mistakes. In these few cases I give

the Latin and old English words freed from what are clearly only scriptorial errors.

The words of the Glossary are first given, and then follow after each word (in brackets) the more usual form of the name, or the modern name, or the present Latin name, or all of these. The bracketed words are my own, given with a view to help those readers of the *Gardeners' Chronicle* who may require such help, and I feel sure that there are not a few of such readers who will be interested, as I am, in noting how, in this nineteenth century, we are in so many cases using the same names for our plants that were used by our forefathers more than a thousand years ago.

ahilina—hnutu (nut—*Nux avellana*).
allium—garlec (garlic).
alba spina—hæguthorn (hawthorn).
apiastrum—biouuyrt (beewort—sweetflag?).
anethum—dil (dill—*Anethum graveolens*).
æsculus—boecæ (beech).
aconita—thung (monkshood).
apio—merici (parsley).
acerahulus—mapuldr (apple tree).
acrifolius—holegn (holly).
alnus—alaer (alder).
alnum—fulac trea (black alder).
albes—sæppæ (fir tree? white poplar?).
almota—alerholt (alder wood).
alga—war (seaweed—ware).
avellanus—hæsel (hazel).
acutula—hramsa (ramsons—wild garlic).
ascalonium—ynnelæc (onion).
accitulum—geaces suræ (cuckoo sorrel—oxalis).
ambila—laec (leek).
arniglossa—ueegbradae (waybread—plantain).
absinthum—uuermod (wormwood).
anguens—breer (brier).
acinum—hindberie (hindberry—raspberry).
beta (*betula*)—berc, *arbor dicitor* (birch).
blitum—clotæ (clote—burdock).
cerelys—aesc (ash).
canis lingua—ribbae (ribwort—plantain).
cicuta—hymblicæ (hemlock).
corylus—haesl (hazel).
cerasius—cisirbeam (cherry tree).
carisus—cuicbeam (quickwood—hawthorn).
crocus—gelu (yellow—saffron).
cerofolium—cunillæ (chervil).
cicuta—uudæuistlæ (wood whistle—hemlock).
castanea—cistenbeam (chestnut).
caltha—reade clabre *vel genus floris* (red clover?).
carex—seeg. (sedge).
cucumis—popeg (poppy).
calista—huitti clabre (white clover).
calcicolum—ieces suræ (cuckoo sorrel—oxalis).
cardella—thistel (thistle).
callomachus—haeth (heath).
carduus—thistel (thistle).
cardaneum—lypbeorn (some medical seed).
cynoglossa—ribbae (ribwort—plantain).
cicer—bean.
cypa—cipæ (onion).
carectum—hreed (reed).
colchicum—æbordrotæ (carline thistle?).
hedera—uuidoquindæ (woodbine, ivy).
crinio—hindberge (hindberry—raspberry).
heptaphyllon—vii *folia*—gelodwyrt (silver weed).
helleborus—thunge—woedeberge (woodberry, baneberry).
æsculus, *ah edendo*—boece (beech).
edra—iing (ivy).
chulane—uualhuyrt (wallwort—elder).
fraxinus—aesc (ash).
fagus—boecæ (beech).
fusarius—uuananbeam (spindle tree).
filix—fearn (fern).
fraga—obet (fruit—strawberry).
fungus—suamm (mushroom).
ferula—aescythrotæ (giant fennel).
gladiolum—seeg (sedge).
gramen—quice (quick or couch-grass).
genista—broom.
hibiscum—biscopwyrt (bishopwort—vervain).
imula—uualwyrt (wallwort—pellitory).
involuco—uudubindæ (withywind).
lolium—atæ (oat—tares).

lactuca—thuthistil (sow thistle).
lapatum—lelodre (sorrel?).
lappa—clife (clivers—galium).
lignstrum—hunagsuge (honeysuckle).
milicofolium—gerwæc (yarrow).
malus—apuldr (apple tree).
myrtus—wyr (myrtle).
melarium—milsapuldr (sweet apple tree).
malva—cotuc *vel* gearwan leaf (yarrow leaf mallow).
marrubium—hume *vel* biowyr (honeywort—beewort).
nux—hnutbeam (nut tree).
nigra spina—slachthorn (sloe—blackthorn).
nasturtium—tuuncressa—leecressæ (garden cress).
origanum—uuoormillæ (wild marjoram).
origanum—elonæ (elecampane?).
populus—birclæ (birch).
plantago *vel* *sepinerva*—waegbradæ (waybread—plantain).
pastinaca—uualhmoræ (turnip).
papirum—eorisc (water rush, bulrush).
pallurus—sinfullæ (always full, or perfect—generally given as the translation of *sempervivum*).
prunus—plumæ (plum).
papaver—popæg (poppy).
pastellus—hunægaep (honey-apple).
quinquefolium—hraefnesfot (raven's-foot—crowfoot).
quinquenerva—leciuyrt (leechwort, plantain).
robur—aac (oak).
ruscus—enicholæen (knee holly, butcher's broom).
ramnus—thebauthorn (thief thorn, buckthorn).
salix—salch (sallow, willow).
sambucus—ellæa (elder).
scirpus *de quâ matta conficitur* (bulrush).
serpillum—bradæ leac (broad leek).
sinapis—cressæ (cress).
scilla—gladinæ (gladwyn).
spina alba—haegthorn (hawthorn).
spina nigra—slagthorn (sloe thorn).
scirpea—eorisc (water rush).
salsa—suræ (sorrel).
sinfoniaca—belonæ (henbell—henbane).
senecio—gundaeswelgiæ (groundsel).
tilia—lind (lime—linden).
taxis—iuu (yew).
tremulus—aespæ (aspens).
thymsus—haeth (heath).
tilia—lind *vel* bæst (lime or bass).
talumbus—giscaduuyrt (rocket?).
volula—herba *similis hedera, que vitibus et frugibus circumdari solet*—uudubindæ (woodbine).
veneria—smerwuyrt (smerewort—plant intended uncertain).
ulmus—elm.
riburna—uudubindæ (woodbine).
viscus—mistel (mistletoe).
vicia—fluglæs bean (fowl's bean—chickling vetch).

Henry N. Ellacombe.

THE APIARY.

GENERAL HINTS.

THOUGH we have had some sharp frosts at night, many days have been mild, and the bees have not only had some good flights, but we have even seen some of ours bringing in pollen, which shows breeding is still going on to some extent. While the weather is moderately mild and open, the final packing for winter need not be done; in fact, it is better not to do it, but to allow the bees to form themselves into a cluster through cold, and then when real cold weather is upon us, to cover up for the winter. When doing so, see that covers are firmly fastened on, and made water-tight. Our honey-extractor has had a rest this summer, and therefore does not require putting away, but all things not required now must be stowed away in a dry place.

Old combs not wanted again for the bees may be melted down. It is worse than useless to keep them, as they turn musty, and decrease in weight. There appears to be a desire on the part of many bee-

keepers to return to the old copper for extracting wax. I have never dissented from the use of it, and cannot help feeling pleased at its return to favour. The usual plan is to put the comb into a bag, put it in a copper full of water, and boil gently, taking care to hold the bag down with something. There is, however, a much better method of doing it in a copper by means of a very simple and useful contrivance which any handy man could make for himself, or his nearest tinman could do it for him.

BEE FOODS.

When planting bulbs do not forget a few Crocuses and Snowdrops for our pets. Another plant is calling for our notice. It comes from America, as a matter of course, so we are going to try it before recommending it largely. It is a member of the Teasel family, and the Americans say thousands of bees visit it in a very short time. We wonder ourselves how they count the bees. In Russia it is said if you want a genuine opinion, ask six people for one, strike an average, and then believe the opposite. As far as American recommendations are concerned, we have better opinions; still, it is safer to try an experiment on a small scale first. If successful, it would show our prudence, while if unsuccessful it would look like a prophecy, according to the immortal views of the immortal Vicar of Wakefield. *Bee*.

SHREWSBURY AND NEIGHBOURHOOD.

A GREAT number of persons (42,000) visited the last horticultural show at Shrewsbury on the second day. Few English towns possess greater interest to visitors than Shrewsbury in its historic associations, which are numerous and varied.

Considered also from a horticultural point of view, Shrewsbury contains several places of note, to a few only of which we can refer on the present occasion, our notes having been taken at the end of August.

ONSLow HALL was the former seat of the ancestors of the present Earl of Onslow; the present occupant of Onslow Hall is Colonel Wingfield.

The estate consists of 3800 acres of very good land. The pleasure ground is about 9 acres, with a first-class collection of new sorts of Rhododendrons—plants in which the Colonel is much interested. These are a long time in getting used to the soil after coming out of peat, but grow well when once established. Oaks, Elms, and Larch we noted as doing well.

On the lawn is a magnificent example of the variegated Sycamore, which Mr. W. Barron, of Borrowash—no mean authority on such matters—thinks must have been one of the first planted in England, and that it is one of the finest trees known to him. Eleven large clumps of Pampas-grass standing on the lawn were a very conspicuous feature.

Amongst plants in the houses we observed a good collection of Ferns, and a few of the most useful Orchids. We noted also a nice collection of Dracænas. Plants suitable for table decoration are largely in request, and are surprisingly well done. About 600 Chrysanthemums are grown, and these will doubtless give a good account of themselves later on. A good batch of Bouvardias will be useful soon.

Three Peach-houses, 70 feet in length each, were well utilised, one (hip-roofed) being a very useful house; half-way up the house (in front) are Maréchal Niel Roses, trained to a trellis. These bloom well here, although every year as soon as the plants have ceased blooming, they are cut down, and made to break afresh from the bottom. Then Tomatoes are planted, and by the time these have been fruited and cut the Roses have joined each other again, one strong shoot being trained along each wire. Strawberries are grown overhead, and Peaches and Nectarines on the back wall. There is an iron trellis along the front for bedding plants.

The two other houses are filled with Peaches and Nectarines on the back wall, and are nearly all young trees. Alexander Peach has given some fine early

fruit. Royal George and Grosse Mignonne are considered two of the best. A-ber is found to be rather a shy bearer. Nectarine Peach is a good late variety, and hangs a long time after ripening. Several other sorts are grown, but those named have proved themselves to be the best.

Peaches outdoors are carrying good crops, but on account of the sunless season it is feared the fruits will not ripen. Amongst Nectarines, Humboldt and Pine-apple are the most favoured sorts.

At the end of this range is one of the oldest Maréchal Niel Roses in England. An account of it appeared in this journal some six or seven years since, but on account of building operations, its roots were obliged to be cut and confined to a small space, so that this old favourite is not now seen in its former splendour.

We noted some good Muscat Grapes, that deserve more than a passing notice. The Vines are about thirty years old, and two years since Mr. John Lambert, the gardener lifted them. Their roots were tied up in damp mats for two days and nights, in order to put in a new bottom to the border. Nearly all the old Vine border was used again, fresh cut loam being unobtainable. In the Muscat class at Shrewsbury show this year, Grapes from these Vines secured Mr. Lambert first honours, showing, therefore, the complete success of the operation.

Pears are a favourite fruit, a good collection being grown. Young cordons are kept, being planted in preference to trained trees on walls.

Vegetable culture is well carried out here, Mr. Lambert gaining the much-coveted Veitch Memorial Medal and prize of £5 at Shrewsbury, thirteen competing in the class. He has also taken the 1st prizes in the vegetable classes at Liverpool for seven years. Gardeners in Proud Salopia, as it is called, have not such a "rosy" time of it as those in the South; indeed, with them it is often a case of gardening under difficulties. Carrots, Parsnips, and such roots are fully three weeks later here than in the South.

Mr. Lambert says the present season has been the most trying he has ever experienced. Peas sown for Shrewsbury show are now (end of August) only in bloom. Autumn Onions appear to have been treated too kindly, for ninety out of every hundred are double-necked. The plantation of Autumn Giant Cauliflowers, that should have been just ready for Shrewsbury, and which, under ordinary circumstances, would have been quite as large again as the ones comprised in the Medal Collection, were attacked by maggots at the roots, and so turned in three weeks before the proper time. It may be added, that the kitchen garden is nearly 4 acres in extent, some of it (recently added) is rough, subsoil clay, with about 2 feet of rather stiff loam.

In the neighbourhood of Onslow is a somewhat remarkable Oak, called Glendower's Oak, famed by the tradition that it afforded in its branches an observatory to the Welsh chieftain, Owen Glendower, to ascertain the issue of the Battle of Shrewsbury in 1403. Though now hollow and decayed (only one small branch being at present alive), it girths upwards of 44 feet. This aged monarch in the tree way stands in the grounds of Shelton Priory, Colonel Field's residence, in which there is a good tree growth. From this point several fine views of the town may be obtained.

HAWKSTONE.—Unfortunately (our time being somewhat limited), we were unable to visit this, the seat of Lord Hill. Mr. Lambert, however, is an old Hawkstone man (having learned his business under that good all-round gardener, the late Mr. Daniel Judd), and informed us that it contains one of the prettiest parks in England, a nice lot of plants are grown, and fruit is done well. There is a fine kitchen garden (walled in) of 4 acres. The present chief of affairs horticultural, is Mr. Carr. What is called "Lord Hill's Column" in Shrewsbury deserves notice. It is situated in a most commanding position, at the top of Abbey Foregate. It was erected by public subscription, at a cost of £5973, to commemorate the glorious victories and well-earned laurels of a Shropshire hero and patriot, General Lord Hill. The column was designed by the late Mr. Edward Haycock,

architect, of Shrewsbury. It was completed on June 18, 1816, the anniversary of the Battle of Waterloo. The statue of his lordship is 17 feet in height, the total height of the column from the base to the top of the statue is 133 feet.

Whilst in the district, we took a trip to Alton Towers, Staffordshire, the princely seat of the Earl of Shrewsbury and Talbot. Our notes concerning this fine place must be reserved for publication in a future issue. B.

SPECIMEN TREES IN KEW GARDENS.

THE PERSIMMON.—The tree herewith figured (fig. 72, p. 505) stands close to the Temple of the Sun in the Royal Gardens, Kew, not far from the principal gates on Kew Green. It is one of the original denizens of the Kew Arboretum, and, in all probability, is one of the numerous trees presented to George III. by the then Duke of Argyll, "which he had imported and propagated in his garden, at Whitton, near Hounslow." The Temple of the Sun was nearly the centre of the original botanic garden—a walled-in space of about nine acres, planted and arranged by William Aiton.

The Persimmon (*Diospyros virginiana*) is a native of the Central and Southern United States, and has long been known in cultivation in this country,

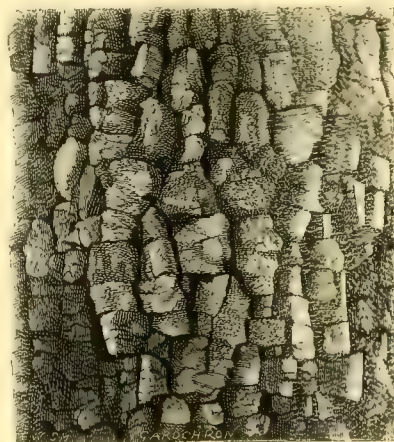


FIG. 71.—BARK OF THE PERSIMMON.

having, according to Loudon, been introduced in 1629. The following are the measurements of the Kew specimen which, according to many American botanists who have seen it, is a remarkably fine one:—Height 60 feet, spread of branches 38 feet, girth of trunk at 4 feet from the ground 5 feet 2 inches. The trunk has no branches for about 15 feet, and the deeply-fissured bark renders it a decidedly handsome object.

There are only half a dozen genera in the order Ebenaceæ, and about 250 species, the genus *Diospyros* embracing no fewer than 153. Nearly all are natives of warm regions, and a number furnish economic produce of considerable importance. Ebony, so well known on account of its extreme dark colour and hardness, is the heartwood of the Ceylon, *D. ebenum*. One of the most beautiful of all cabinet woods is that of *D. quasita*, another Cingalese tree; this is so hard that edge-tools can scarcely work it. The fruits of most of the species are very astringent, and many are used medicinally. From the unripe fruit of *D. virginiana* an indelible ink is made in the Southern United States.

In his *North American Sylva* Michaux makes the following statement which is of interest historically in connection with the Persimmon:—"In an ancient periodical work printed at Philadelphia, I find that the English Government, in the years 1762 and 1763, offered a premium of £20 sterling for every 50

pounds of gum collected from the Persimmon in their American colonies. They were doubtless misinformed on this subject; a greenish gum without taste or smell exudes from the tree, but, in several hundred experiments, I have not been able, by wounding the bark, to collect more than two scruples from a single stock."

D. virginiana much resembles in general aspect *D. Lotus*, the European Date Plum, but differs from it by the male cymes and female peduncles being rather longer, and by the larger flowers and fruit. I have not seen fruits of the Persimmon produced in England, but have met with specimens fruiting abundantly in several parts of France. The Kaki or Chinese Date Plum, is not hardy enough to withstand the English winters or to ripen its wood sufficiently to bear its handsome fruits; it can, however, be grown as an orchard-house plant. Many curious forms—widely differing in the colour and shape of the fruits—are cultivated in the South of France and—apart from the value of the fruits themselves—make very beautiful bushes. The figure is from a photograph of Mr. W. G. Smith. G. Nicholson.

THE BULB GARDEN.

DAFFODIL LIFTING AND PLANTING.

I HAVE read with much interest all that has been said on this subject, and with some of the remarks I thoroughly agree. As regards the annual lifting, I do not agree, and would not practise it unless forced to do so by the soil being very light or very heavy. Most certainly, were all our summers like the wet one of 1888, the delicate sorts like *pallidus præcox*, Henry Irving, General Gordon, Lincoln Yellow, and many of the white trumpet or "swan's neck" section, would be better by being lifted and dried, and not replanted until September. But with strong growers, like Trumpet Maximus, Golden Spur, Princess, Horsfieldi, Emperor, and Empress, if the soil be suitable, and they are planted on the three years' system, I should let them remain.

Ard Righ, Blondin, Tenby, and particularly Henry Irving, which has got such a very thick skin, should be annually cleaned; the others may remain in well prepared beds for a couple of seasons if the alleys are deep. The whole matter of annual lifting very much depends on the soil and the situation, and, with us in Ireland, the characteristics of the months of May and June. If these are wet months the bulbs are apt to suffer while in the dormant state. Take the case of all the "spurius" class, notably Ard Righ, the foliage of which is quite withered by May 20, if there is much rain during the summer until vegetation again sets in—I mean root-action—which generally commences in September, there is great danger that such a bulb may rot in soils that are heavy and cold. If the bulbs are not lifted in time and dried the bloom will be of indifferent quality—what we call sick or blind bulbs—I mean such as throw up one or two stunted leaves, and make an attempt at flowering at the surface. These are generally bulbs that were water-logged during the previous summer through defective drainage or retentive soil. Bulbs pierced by the Narcissus-fly, and having the grub in them, will also exhibit this stunted growth, and they do not recover.

In the case of the water-logged bulbs, if these are lifted at once and put in the sun to dry off, well cleaned afterwards, and if the base of the bulbs (quite brown, as if scalded) be trimmed with a sharp knife until this skin is cut away and the bulbs carefully planted on a dry border, they will recover. This season, among some English bulbs, and especially with Dutch ones, water-logged, badly ripened bulbs are more observable than I have before observed, and it is only the trumpet and incomparabilis sections, whilst dormant, that show apparently "scalded buds." I have never observed it in the Tazetta or poeticus sections, and would like to hear from a grower of Mr. Walker's experience, whether he ever had a "sick" stock of poeticus ornatus or majalis. And why? For this very good reason, that their growth is active during the summer, when the others are at rest; and though late to flower and

ripen, become active again at the roots simultaneously with the trumpet varieties in September. One very good rule to go by in annual lifting of Narcissi is the state the bulbs are in during the month of July. If, as Mr. Burbidge would say, they are like cricket-balls, without a vestige of foliage or roots, there is danger for such a section of Narcissus if the soil

which we take all the top layer of soil, and on this account the beds are well drained; and in the alleys we grow Cabbages, Cauliflowers, Broccoli, and early Potatoes of dwarf growths; and in this way the soil gets manure without the latter coming into contact with the bulbs; and where the beds are this year, the alleys will come at the next lifting. What I have attempted to write on this subject is only for market



FIG. 72.—THE PERSIMMON (*DIO-SPYROS VIRGINIANA*) AT KEW. (SEE P. 504.)

be badly drained, and I would say, "Lift, dry, clean, and do not plant until September." But in the case of the poeticus and Tazetta section, and many of the trumpets, strong growers like maximus, that grip the soil deeply with fleshy white roots, there is less danger, and these may be allowed to remain in the ground for two and three years. Most certainly with me the strong flowers do best, and the blooms are much finer, by being left in the soil. The beds here are 4 feet wide, with alleys 18 inches wide, and from

growers and bulb-dealers. In the case of amateurs who plant Daffodils in beds and borders, they had better lift all their choice bulbs annually as the foliage dies off, and plant again in September—for this reason: in such beds and borders bedding plants may do much harm by the water needed for these plants being unnecessary for the bulbs, as also the manure employed, as in the case of tuberous Begonias, &c. *William Baylor Hartland, Temple Hill, Cork.*

ORCHID NOTES AND GLEANINGS.

VANDA CÆRULEA.

On a small plant of this handsome Orchid at present flowering with me is a spike of ten flowers, the bottom bloom of which has five sepals, three petals, and two lips. Is it a common occurrence? [Probably the result of the union of two flowers. Ed.] Individually the flowers are very fine, measuring 4 inches across, and the one with extra sepals and petals measures over 5 inches, of a lovely pale blue. We have been growing the above plant with another also in bloom at the coolest end of the stove, having failed to flower them for three years previously in the Cattleya-house; although the plants were treated in every respect the way that is generally recommended, viz., suspended close underneath the ventilator in the Cattleya-house, where they could get a fair amount of sun, and air was also admitted by a hole being cut in one of the squares, but of no use. The plants left in the Cattleya-house are at present showing no signs of flowering, and will in future be grown in the stove. *Erin.*

ONCIDIUM BIFOLIUM.

Hitherto this plant has been rarely met with in gardens. It is a handsome dwarf-growing species, having ovate dark green pseudobulbs and short lance-shaped keeled deep green leaves, borne in pairs. The slender scapes proceed from the base of the bulb, and bear beautiful pendulous racemes of from six to twenty showy flowers, and the sepals and petals are brown faintly marked with yellow. The lip, which is extremely large, is yellow of great brilliancy. Providing water is kept off the flowers, they last a long time in perfection. It is of easy culture, succeeding well upon a block horizontally suspended, with a little sphagnum to retain moisture (of which it enjoys a liberal supply), and hung at the cool end of the Cattleya-house. A plant is now flowering at the Vineyard and Nurseries, Garston. *F. A.* [The recent importations of the plant will make it a little less rare. Ed.]

LEPTOTES BICOLOR.

A large number of this species is now flowering at the Vineyard, Garston. It is a decidedly pretty epiphytal plant, with short rush-like leaves, and bears white flowers blotched on the lip with purple. It is a desirable plant, inasmuch as its flowers appear in winter, and last a long time in perfection. It is of easy culture, succeeding well upon blocks or in pans suspended from the roof at the cool end of the Cattleya-house, and enjoys when growing a liberal supply of water. It is recorded that this species bears fragrant fruit with the odour of the Tonquin Bean (*Dipterix odorata*). This fruit, infused in cream, gives it, when iced, a mild agreeable flavour, sweeter than vanilla, but less penetrating.

LÆLIA RUSSELLIANA.

This is a very distinct and elegant variety of the purpurata section. The flowers are large, the sepals somewhat narrow, and white, suffused with lilac; the petals broader, and the lilac slightly deeper in tint; the lip is large, of rosy-lilac; and has a band of pale rose near the throat, which latter is light yellow pencilled with rose. A nice plant of it is now flowering in the Vineyard Nurseries, Garston. *F. A.*

FRUIT REGISTER.

PEAR CLAPP'S FAVOURITE.

This fine American Pear is not over-estimated by "R. D." in his note in the *Gardeners' Chronicle*. It is grown here on trees in pots, and on a south wall, since it was first distributed; and when grown fully exposed to the sun, and well ripened, it is one of the most beautiful Pears with which I am acquainted, being of pleasing outline, and having a yellow ground colour, suffused and streaked with

bright crimson on its sunny side, reminding one in this respect of a well-finished Thames Bank Peach. The length when well grown is $4\frac{1}{2}$ inches, and $9\frac{1}{2}$ inches in circumference. The flavour is sweet and agreeable, and it is pleasanter to my taste than the musk-flavoured Williams' Bon Chrétien or Souvenir du Congrès. As "R. D." remarks, it deserves a place amongst early market kinds; it is also a good exhibition fruit, but should be planted in private gardens only in limited numbers, as, like most early Pears, it has but a short season. *T. Coomber, Hendre Gardens.*

CHANCELLOR PEACH.

This fine late Peach does not appear to be grown so much as it deserves to be. It comes in about the same time as Barrington and Princess of Wales. This year I gathered my last dishes of the latter and of the former on the 15th and 17th ult., and of Chancellor two days later, all the trees being on south walls. It is a robust-growing and very free-bearing variety. The fruit is large and of a roundish-oval shape, the skin being somewhat downy, and of a uniformly dark crimson next the sun; the flesh is a pale yellow, melting, very juicy, rich, and vinous, *H. W. Ward.*

A FEW GOOD PEARS.

Beurré d'Amant.—This fine early autumn Pear should find a place in every garden. The tree is a very strong grower and prolific bearer, succeeding almost in any kind of soil, situation, or form, but, as a matter of course, doing best in a good loamy soil, and trained against a south or west wall; it also does very well as a standard. The fruit is large and obovate, the skin being greenish-yellow where shaded, tinged with brownish-red next the sun, and liberally sprinkled with russet. Flesh yellowish-white, buttery, melting, and rich.

Dojenné Boussoch.—This is a large handsome Pear, not often met with in gardens. It ripens in September and October, according as the district and season are warm or cold. The fruit, as already stated, is large and handsome, pyriform, having a russet skin, reddish-brown next the sun. The flesh is juicy and refreshing. It is a good grower and a free bearer; and, by reason of its taking appearance it is an excellent exhibition Pear.

Josephine de Malines.—Too much cannot be said in praise of this very hardy, free-bearing, and excellent Pear. The fruit is of medium size, perfumed, and of delicious flavour; and it is in season from February to April. It succeeds in any form or situation, in ordinarily good soil, on the Quince stock.

Durondeau.—This is another excellent Pear, well worthy of extended cultivation, on account of its great fertility and hardy constitution, as much as by reason of its large and handsome fruit, which is of a rich russetty brown colour and delicious flavour. *H. W. Ward.*

BELTON PARK, GRANTHAM.

[SEE SUPPLEMENTARY SHEET.]

Tais, the Lincolnshire seat of the Earl Brownlow, is charmingly situated about $2\frac{1}{2}$ miles north-east of Grantham. The mansion is a magnificent stone building; in fact, it is one of the finest in that part of the country. On the north it is bounded by the small but picturesque village of Belton, while to the southward extends a fine park containing some magnificent timber, and well stocked with fallow deer. Elm, Oak, and Ash, apparently do exceptionally well, there being some of the finest specimens of these possible to see. There are several approaches to the mansion; the principal one is a straight road, upwards of a mile in length, leading from the south side through the park. To each side of this, at a distance of about 50 feet, extends a magnificent avenue of Elms the entire length.

On the right, leading to the mansions, are some picturesque ruins known as "The Villa," in close

proximity to which is a fine sheet of ornamental water. On the same side, but more northward, is a fine tower, and some more ruins generally known as Belmont. Leading to this from the mansion is a fine avenue of Limes nearly a mile in length. Many of the trees are a special variety, being smaller in leaf than the ordinary kind, and a later and more profuse bloomer, inasmuch as at the time of our visit (the end of August) they were in full bloom. The other side of the Park is skirted by the river Witham which runs through a portion of the pleasure grounds near to the mansion, and affords a charm which is seldom obtained from artificial lakes and streams. On its banks conveniences are erected, which give an adequate supply of water to the establishment in the driest of seasons—a most important thing in large gardens.

THE PLEASURE GROUNDS.

As might be expected in so fine an old place, are laid out in a very choice manner. Many grand specimens of Beech, Oak, Plane, and Elm stand prominently about, and amongst them, and in groups, evergreens, shrubs, and smaller-growing trees; thus adding to the naturalness of the garden views. Several fair specimens of *Sequoia gigantea* (Wellingtonia) were noticeable, though, from some cause, this fine Conifer does not grow with much luxuriance; *Cedrus Deodara* does better—but the chief features are Box and Yew. Of the former there are many fine groups and single specimens, with stems of remarkable size.

The walks are designed in that picturesque and natural style which is characteristic of good landscape gardening. One part of the pleasure-grounds, known as the "Wilderness," is so remarkably well arranged that it deserves more than a passing notice. Through this part the River Witham winds, and the Box and Yew grow with remarkable luxuriance. With several fine specimens of the latter, however, a most singular fact occurred several winters ago, viz., the severe frost killed them outright. One of them was measured, and the stem at 2 feet from the ground was found to be upwards of 6 feet in circumference. Here also are fine clumps of *Spiræa arifolia*, and not far distant are seven or eight remarkably fine weeping Beeches. At this point there is a bend in the river, which is here spanned by a rustic bridge, whose sides are covered from the water's edge nearly to the top with Honeysuckles, Clematis Jackmanni, and *Tropæolum majus*. The two last named were a mass of bloom at the time of my visit. The plants, I may mention, are grown in boxes placed on each side of the bridge; these, however, are hid by masses of Periwinkle, which, when in flower, is also effective.

THE FLOWER GARDEN.

The principal part of this is as shown in the illustration (see Supplement), which depicts it as seen from the central steps in front of the mansion. As a rule summer bedding is not extensively done, inasmuch as the spring bedding is the principal feature here. The centre bed, part of which can be seen on each side of the walk, are usually planted with Crown Imperials and Wallflowers, with a broad edging of Pansies. The long narrow beds which run parallel with the walk are generally planted with Tulips, Hyacinths, &c., each colour being planted in sections, and various designs carried out. This, with a groundwork of *Myosotis*, *Aubrietias*, *Arabis*, *Violas*, &c., is very effective. The small beds are also planted in a similar manner. To give an idea of the extent to which spring bedding is practised, it may be stated that nearly 20,000 Pansies of various sorts are grown annually, the principal kinds being Purity, The Tory, Cloth of Gold, Blue King, and Cliveden Blue. In each corner of the flower garden are some fine specimens of *Acer Negundo variegatum*, two of which may be seen in the illustration.

THE HOUSES.

The houses principally devoted to plant culture are near to the flower garden. A fine conservatory is well filled with climbing and other plants, Camellias forming a great feature here. *Ficus repens*

luxuriates on the back wall, as also does *Asparagus plumosus nanus*. Another house is filled with healthy plants of Azaleas, Camellias, and other hardy wooded subjects, and a stove containing miscellaneous foliaged plants and Ferns. A remarkable feature here is a fine plant of *Poinsettia pulcherrima* planted out in the border, having a stem nearly as thick as a man's arm.

Orchids, though not extensively grown, were looking well, and comprised a nice collection of *Celogyne cristata*, *Vanda tricolor*, *Cypripedium insigne*, *C. barbatum*, *C. Lowi*; *Calanthes* in variety, and others; and in the same house are several seedlings from *Anthurium Andersonii*, raised by Mr. Sage, the able gardener. Close by is a house well stocked with table plants, of which large numbers are required, and a fine specimen of *Davallia Mooreana*. A similar house is devoted to Ferns for cutting purposes.

There are seven fruit-houses—four vineries, two Peach-houses, and a Fig-house; they are in the kitchen garden, at some distance from the house. The Vines looked remarkably well, and bore fine crops, which, as a whole, were beautifully coloured, the Hamburgs, Alicants, Lady Downe's, and Madresfield Court especially. Muscats also were good, those grafted on the Alicante stock being, however, decidedly the best. A novel feature in Grape culture (for which, by the way, Mr. Sage is the recipient of a Silver Medal from the Royal Horticultural Society) is to be seen, and consists of fruiting canes in 7 and 8-inch pots for table decoration. Peaches and Nectarines are well done, the principal varieties being Barrington and Pine-apple. Figs are exceptionally good, there being a fine house devoted entirely to Brown Turkeys. Numerous heated pits, &c., are devoted to the culture of Melons, Cucumbers, &c., and Tomatoes are largely grown on the extension system. A fine batch of Strawberries for forcing, comprising some 2500 plants, was also noticeable; likewise a healthy lot of Chrysanthemums and pot Roses, which are largely grown for cut flowers. An immense quantity of Marie Louise, Count Brazza, and Neapolitan Violets are also grown.

THE KITCHEN GARDENS

are very extensive and divided into several walled-in compartments, each upwards of an acre in extent, thus there is every facility for the production of good fruit and vegetables. The south walls are devoted to Peach and Apricot culture. The other walls are principally devoted to Pears, Plums, and Cherries; Apples, as in most old gardens, are principally well-established standards, which in some seasons carry exceptionally heavy crops. This year has, however, proved an exception, for, generally speaking, the fruit crop, with the exception of small fruits, is but indifferent. Of Apples, the principal varieties fruiting this season, are Lane's Prince Albert, Ecklinville, Lord Suffield, and Herefordshire Pearmain, the first named being considered the best all-round variety for that locality.

Vegetables are well grown, especially Peas, Brussels Sprouts, Scarlet Runners, Celery, and Asparagus—this last being grown extensively for forcing, in order to keep a supply from before Christmas until the outdoor season commences. Another feature is the extensive planting of the Rosette Colewort. These are liberally planted upon south borders. The foregoing will suffice to form a conception of the magnitude of this old place, and the able manner in which it is managed by Mr. Sage. Our illustration is reproduced from a photograph by Mr. H. J. Bliss, of Grantham. *C. C.*

PLANTS AND THEIR CULTURE.

ERICAS.—In garden parlance these are classed into two groups, the hard and the soft-wooded respectively, and for garden purposes this division is useful, as it broadly divides the summer and the winter-flowering groups; *Hyemalis* and *Willmoreana* being typical of the soft-wooded or winter-flowering group, and *Aitonii*, *Victoria*, the many beautiful varieties of *tricolor*, and *ventricosa*, the summer-flowering groups. Between the two extremes there are species which practically unite the two flower periods,

Ericas may be had in flower all the year round, and, when they are well done, few plants are more attractive. Unfortunately some *Ericas* are regarded by the craft as "miffy," requiring an extraordinary amount of skill to grow them well, and certainly some of them are benefited by special treatment; but I have found that where a common-sense sort of management fails extraordinary measures do not avail much. A frequent cause of failure results from mixing them up with other plants which overshadow and thus rob them of a large share of the light, and there is not that amount of ventilation so necessary to their well being. The summer-flowering section will now be placed in their winter quarters, and if no Heath-house is found in the garden, it will be found best to arrange them in a group by themselves in the lightest, airiest position, in a cool greenhouse. In this way they are more under command than if scattered about. Some diversity of opinion exists as to the best season to pot Heaths, but, all things considered, from now onward to early spring is the best time for the operation, as by doing it during that period it makes a better division of labour than when deferred entirely to the spring, when so many other plants require potting; moreover large *Ericas* with many sticks take a longer time to pot, and train, than other plants. It must not be forgotten also that South African plants have a liking for growing in our autumn, it being their native spring time. Indeed, I have only seen the very best results attained when early autumn potting has been the rule, and this is especially the case with young plants; and it is surprising how much more is gained by this ordering of the work.

In potting, use clean pots, with clean crocks well placed, good turfy fibrous peat of firm texture, coarse clean silver sand, and, if procurable, nodules of white sandstone, and all of these should be in readiness before commencing operations. It is important that the compost be nicely moist without being wet, as it may then be rammed firmly into the pots without any risk of its becoming close, and subsequently sodden. See also that the ball of the plant to be potted is moist throughout before turning it out. Remove the crocks from the ball and any loose soil, but otherwise keep it intact. In placing it in the new pot leave sufficient space for thoroughly watering it, but do not plant deeply—only just low enough to admit of a thin sprinkling of new soil being put on the top of the ball. After potting very little water will usually be required until the spring, but if through any cause it should be required, give a good watering, and give no more until the soil be again dry. Plants which do not require potting should have all the dead and decayed points cut out, and the stakes should be put in order. The foregoing remarks also apply to *Aphelexis*, *Phœnocomma*, and *Dracophyllum*, as well as to all young stock of soft-wooded *Ericas*.

Propagation.—The present season offers advantages for putting in cuttings of many tropical plants which have just completed their growth, or at all events in which it is less active, and consequently more consolidated, as the cuttings can now be more freely exposed to the light, and without having recourse to much watering. Another point of importance is that cuttings put in now get established by the close of the year, and are ready to push on when the days lengthen, and every plant grower is fully alive to the advantages of an early start.

At the present season many things may be rooted of the full size required, and this brings them into small pots, and which may therefore be employed for various indoor purposes, without turning them out of their pots; such are *Crotons*, *Dracanas*, *Cordylines*, *Dieffenbachias*, *Acalyphas*; any of these may, with ordinary care, be rooted without the loss of a leaf, or their making any fresh growth. In putting such cuttings into the cutting case their leaves should be carefully tied up. Then there is another class of plants which although truly stove perennials, are more satisfactory when grown as young plants, and these are *Cyano-phyllum magnificum*, *Spherogyne latifolia*, *Miconia feruginea* may be noted as typical examples. These are most admired when grown with straight stems, having fine leaves down to the rim of the pot; and this is easily done by having small young plants to start with in the spring; cuttings of these are not quite so easily rooted as the first-mentioned plants, still, cuttings and small bits of the stems may be rooted, if the buds of the pieces chosen have a leaf attached to them. A moist warm sand-bed is the best place for them, but where this does not exist the same conditions are attained by potting the cuttings in moist sand, and plunging the pots in a bottom-heat of about 80°–85°. As soon as a few roots are

formed, pot off, using at first a light rather sandy compost. At all times strive to prevent them from flagging by regulating the damping and airing. Always remove at once any decaying part of the leaves, should any occur. *F. Ross, Pendell Court.*

THE HARDY FRUIT GARDEN.

PLANTING.—Autumn is the best time of the year for planting fruit trees, providing the soil is of a dry warm character, but when the soil is clayey, and consequently somewhat cold, planting had better be deferred until the early spring time. Much waste of time may be spared if the planting contemplated is considerable, by having the digging of holes and the preparation of the soil finished in advance. For immediately surrounding the roots a soil such as that recommended in a former Calendar for use in transplanting trees will be the proper material to employ; it being a great point to mix some fresh soil, if only about a barrowload, to the staple when planting. The fruit quarters, fruit wall and orchard, should be examined, and all worn-out or worthless trees grubbed out, being careful to leave no pieces of roots in the soil, these being fertile sources of disease in living roots at a later period. The holes should then be dug out with upright sides to the depth of 2 feet, thoroughly breaking up the subsoil; the holes should not be less than 6 feet in diameter. I assume that the drainage of land in gardens and orchards is in proper order, and unless that is so the trees will not make satisfactory growth. If the subsoil be of a wet nature it is in any case advisable to dig it out to the depth of 2½ feet, afterwards to tread the bottom firm, and then place a layer of brickbats or stones rammed hard, and over this a layer of coal-ashes made firm, and on this again whole turves should be placed. Ordinarily this will suffice to keep the roots from descending into the subsoil.

The following information may be useful to many, and it also describes the way in which the kitchen garden here is planted. All round the vegetable quarters by the side of the walks are borders 6 feet in width, down the centre of which dwarf pyramids and bushes of Apples, Pears, Plums, and Cherries are planted. These are between 7 and 8 feet apart. The Apples are worked on the Paradise and most of the Pears on the Quince stock, a few only being on Pear stocks. With the exception of Cherries all are kept within bounds and from overcrowding by summer-pinching, also by periodical lifting and root-pruning, which does away with a great amount of winter-pruning. The roots of all are encouraged and kept near to the surface by annual mulchings. The average height of the trees is 7 feet, so that it will be seen that the vegetable quarters are not unduly shaded, and that the gathering of the fruit gives but little trouble.

Plum trees grown in this way I find are best lifted every fourth year—this prevents the formation of gross shoots and induces abundance of fibrous roots, and it keeps them in a fruitful condition. The small bush fruits are grown on separate quarters for the convenience of netting them in summer. *A. Ward, Stoke Edith Park.*

FRUITS UNDER GLASS.

PINES.—Any of these swelling their fruit should be kept at a temperature of 70° on cold windy nights, and 75° on mild ones. In order to do away with the need of hard firing, some kind of covering should be put over the roof-glass in the evening and removed at daybreak; this will prevent the escape of much of the heat, and the condensation of the internal moisture on the glass. The more fire-heat that is applied must be met by a corresponding increased amount of moisture in the house, in order to maintain a healthy state of the atmosphere. Syringing must now be confined to the stems of the plants underneath the foliage, and to damping the surface of the beds and the paths. Water at the root should be afforded the plants when these require it, but it must be cautiously done, as too little will lead to premature ripening and want of juiciness, and the pulp will be stringy; too much water, on the other hand, will produce black discoloration at the core and insipid flavour. Avoid applications of dung-water, but rather have recourse to some concentrated manure. Maintain a steady bottom-heat of 85° to 90°; for fruiters the heat should not decline below the former, neither should it exceed the latter figure mentioned.

Early Starters.—Queens which have been at rest for some time must be kept quiet during the present month, a warmth of 55° will be quite high enough for these at night, and bottom-heat 70° to 75° will be ample. Afford sufficient water; to prevent the tissue of the plants from shrinking; but, as a rule, little or no water at the root will be necessary during the present month. Admit a little fresh air daily when the thermometer exceeds 60°, but avoid cold draughts. Where the bottom-heat for early starters is dependent on leaves alone it should now be seen to, choosing Spanish Chestnut, Beech, and Oak leaves for the purpose of refreshing the heat, and let the new material be trodden as firmly as possible to prevent rapid fermentation.

Successions.—These should now be at rest; let the bottom-heat be as near 70° as possible, and the atmospheric temperature 55° to 60°, according to the weather. Take advantage of all favourable opportunities of admitting air at the top of the structures, but the ventilators should be closed by 2 P.M.

Suckers.—When their pots are filled with roots they require careful management during the next few months; water the plants whenever they are getting dry, especially where the pots are plunged in a bed made over hot-water pipes: 70° to 75° will be a safe root temperature for these. In houses with good clear glass, where the plants are in close proximity to it, and where it is found necessary to push forward any of the suckers which were shifted into a size larger pots a little hastening of growth may be done; but where the houses are heavy and glazed with old-fashioned small panes, and the plants far from the glass, this must not be attempted.

Strawberries.—Give every attention with water, the pots being now crammed with roots, and when these are allowed to get dry no after-management will make good the injury done to the plants. Keep the pots free from weeds, and see that the roots are not making their way into the material on which they are standing. I have placed my Strawberries on trellises this season, and they have well repaid the labour. *W. M. Baillie, Laton House.*

THE KITCHEN GARDEN.

PEAS.—The warmest and most sheltered position available should be devoted to this sowing, and the soil should have a liberal quantity of manure dug in before sowing the seed. In this district November 13 is quite early enough for putting the seed in the ground. Six feet apart is about the right distance at which to have the rows. After filling in with the soil, I place good sifted coal ashes over the rows at once, to the depth of 1 inch, and about 9 inches in width; this prevents to a certain extent the frost from penetrating the ground, and it seems to hasten the germination of the seed. It may be remarked that it is important that the seed for this sowing should be new and good. The varieties found very suitable are Laxton's Earliest of All, Veitch's Extra Early, Chelsea Gem (dwarf), and Standard. The three first come into use very nearly at the same time, whilst Standard is a good hardy Marrowfat Pea, which is fit for use very soon after the others, and it is a capital cropper.

Some *Broad Beans* may also be sown in a similar position and manner. Johnson's Wonderful is a good hardy variety.

Seakale and Rhubarb. If these be forced in the open, the roots should now be got in readiness for forcing by clearing off the decayed leaves and placing a small heap of coal-ashes over the crowns to prevent slugs attacking them. The forcing pots should then be put on, and a stake about 4 feet in length should be placed against each root, and all can then be covered over with fresh leaves, but care should be taken not to get too much heat by making the heaps too large in the first instance, as fresh fallen leaves—and especially Walnut and other soft sappy leaves—heat more violently than would be the case in the winter time. Good Seakale and Rhubarb may be had in this way at Christmas if well attended to; but where a Mushroom-house or warm shed is at hand the forcing is easier done. The temperature there may range day and night at from 55° to 60°, a moist atmosphere and the complete exclusion of light being the other essentials. I have seen this operation accomplished very successfully in the brick pit usually found at the back of Cucumber-houses the light being shut out. *W. H. Davies, Kelton Hall, Stamford.*

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APPOINTMENTS FOR THE ENSUING WEEK.

MEETING.

SATURDAY, Nov. 10 } Royal Botanic Society: General
Meeting.

SHOWS.

MONDAY, Nov. 5—Surrey (two days).
TUESDAY, Nov. 6—Kingston (two days).
WEDNESDAY, Nov. 7 } National Chrysanthemum (two
days).
Bath (two days).
Portsmouth (three days).
THURSDAY, Nov. 8—Teddington (two days).
FRIDAY, Nov. 9 } Crystal Palace (two days).
Leicester and Midland (two days).
Hitchin.

SALES.

MONDAY, Nov. 5 } Dutch Bulbs, at Stevens' Rooms.
Dutch Bulbs, at Protheroe & Morris'
Rooms.
Dutch Bulbs, and Plants, at Small's
Rooms.
Nursery Stock, at the Goldsmith's
Park Nursery, Groombridge,
Sussex, by Protheroe & Morris
(two days).
Nursery Stock, from Sample, at
Protheroe & Morris' Rooms.
TUESDAY, Nov. 6 } Roses, Greenhouse Plants, Fruit
Trees, Bulbs, &c., at the City
Auction Rooms, by Protheroe &
Morris.
Nursery Stock, at the Hale Farm
Nurseries, Tottenham, by Pro-
theroe & Morris.
WEDNESDAY, Nov. 7 } Dutch Bulbs, at Stevens' Rooms.
Lilium auratum, Azaleas, Camel-
lias, Greenhouse Plants, English-
grown Lilies, &c., at Protheroe &
Morris' Rooms.
Plants and Dutch Bulbs, at Small's
Rooms.
THURSDAY, Nov. 8 } Dutch Bulbs, and 5000 Lilium auratum
from Japan, at Stevens'
Rooms.
Dutch Bulbs, at Protheroe & Morris'
Rooms.
Nursery Stock at Woollett's Nur-
series, Caterham, by Protheroe &
Morris.
Plants and Dutch Bulbs, at Small's
Rooms.
SATURDAY, Nov. 10—Dutch Bulbs, at Stevens' Rooms.

Land ahead. The passing, with ultimate unanimity, of two important resolutions respecting the future of the Royal Horticultural Society, at the last of the interesting and practical meetings held in association with the Chiswick Apple and Pear Conference, lead to the conviction that the proper position of the Society in the world of horticulture is at length being realised, and that a course is being indicated which may ultimately lead to excellent results. The Royal Horticultural Society has done much good work in its time, but it is doubtful whether in any one single effort it has ever accomplished so much that is eminently practical as were the recent exhibition and Conference. Here we saw a wonderful display of Apples and Pears brought together from nearly all parts of the kingdom, without hope of any reward, and at considerable cost and trouble to the growers. Still further, we saw Conferences attended, day after day, by a large number of interested persons; we heard papers full of matter of practical value, contributed also by gentlemen from various localities; and discussions of an enlivening nature

kept up throughout the three meetings, and all for love of the old Society, and for that horticulture which it is its duty to represent and to lead. With such a remarkable tribute thus paid to the Society how very important it is that recommendations to the Council, as embodied in the resolutions passed so heartily at the recent conference, should have the fullest and kindest consideration.

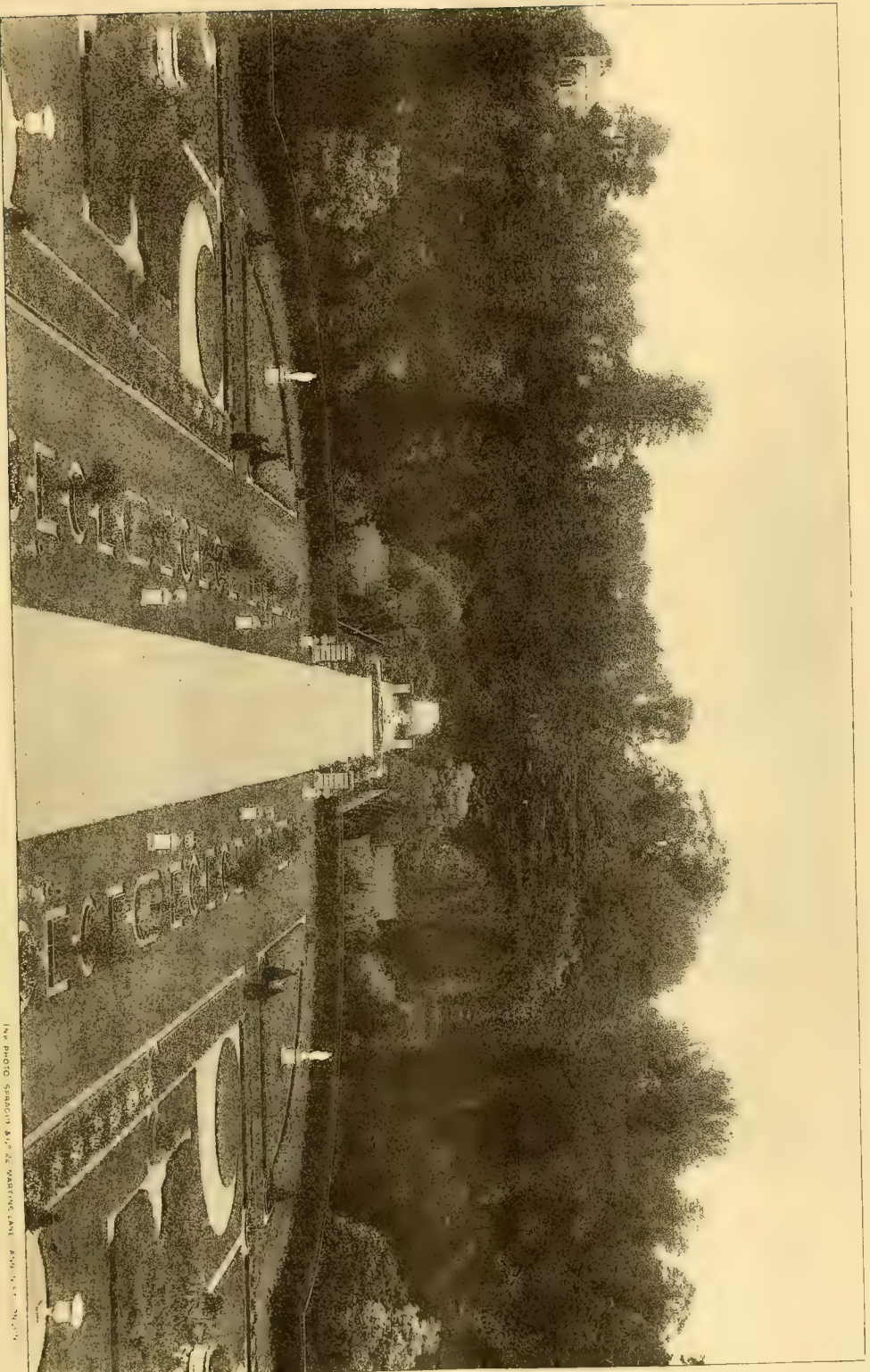
The promoters of these resolutions are persons who, not only in connection with the recent Conference, but in other directions, in times past, have done much to promote the welfare of the Royal Horticultural Society, and when suggestions of the nature embodied in these resolutions emanate from them it is obvious that not only do the few speak for themselves, but they speak practically for the body of horticulturists at large. Whether the Council of the Society feel much sympathy or not with the spirit of Mr. SHIRLEY HIBBERD's proposal it would be very unwise to ignore it altogether, or to treat it as outside their powers. The selection of a body of some ten or twelve persons, including members of the Council and of the respective committees, or even of persons outside of these bodies, would be peculiarly fitted to render help to commercial horticulture in the directions named, would show that the Council has no disposition to stand in the way of the wishes of the Fellows and horticulturists generally, in respect of a matter which might prove to be ultimately of the highest importance. It is true the reference contained in Mr. HIBBERD's resolution covers wide ground, and, if carried out according to the strict terms of the resolution, would entail expense beyond what the Society can bear, even if the charter bogey do not prohibit it, which is doubtful! But the Council in appointing the proposed committee, may, while giving a wide interpretation to the resolution, and accepting its spirit, rather than its letter, define what should be the nature of its duties, and thus clear up what, so far, is somewhat indistinct. The particular reference made in Mr. TALLERMAN's addendum to the resolution is very clear and decisive. It is only needful to make other references as clear, and the work of the committee may be productive of much good. The proposal is important, because it assumes that the Royal Horticultural Society has duties to horticulture economical as well as technical, and the more fully these duties are carried out the more popular must the Society become as a truly national horticultural organisation.

The resolution proposed at the instigation of Mr. MALCOLM DUNN, acting on behalf not only of the provincial but also of metropolitan horticulturists, possesses, perhaps, the greatest weight, because it bears so conclusively on the technical work of the Society. Mr. DUNN, in company with many others from far and near, gathered together at Chiswick for the discharge of good work, and for taking part in the recent Conferences, and found that, although the old and world-famed gardens have been largely shorn of much of their ancient area and beauty, yet that they still remain the home of practical horticulture, and really have no equal in the entire kingdom. They see with so much that is of present value, and so much which, if fostered, might soon develop into great prospective importance, also considerable dilapidation, and poverty allied almost to starvation. What wonder, then, if anxiety for the future of Chiswick should give rise to a determination to force the needs and necessities of the case upon the attention of the Council, and invite from that body speedy amelioration. Chiswick has had an illustrious past, but with our now

marvellously developed horticultural knowledge and practice that past ought to be utterly eclipsed by its much more practical as well as brilliant future. It is very hard to learn of colleges of horticulture being established elsewhere, when we have at Chiswick the elements which no other place can furnish so well. What if the old gardens were, under the auspices of the Royal Horticultural Society, converted into at once an experimental garden allied to a horticultural school? How proud would gardeners of all sections be to find that something was at last being accomplished in the direction of training our rising youth to become worthy gardeners of the future. Chiswick needs paint and putty, it needs the labour of the carpenter and the bricklayer, and, not least, more labour in the cultivation of its soil and the utilisation of its houses to the highest of purposes; but, beyond that, it needs actual countenance and encouragement by the presence of the ruling body, and by frequent gatherings there of all who have the interests of horticulture at heart. What a fine situation does it present as a school of horticulture, because so near to all our great teaching institutions. It is almost next door to Kew, the noblest botanical gardens in the world; it is not far from South Kensington, and its schools of art and museums; it is near to the metropolis, with the thousand and one advantages thus offered to students to acquire knowledge in geology, chemistry, botany, or other allied sciences. That may seem to be a large conception to emanate from Mr. DUNN's resolution, but it is, all the same, the ideal which we have for years past, in season and out of season, advocated. We wish to see the gardens devoted to the encouragement and teaching of horticulture of the highest and yet most practical order, overlooking nothing, but promoting everything that is relevant to it. Commercial horticulture in all its varied phases is an important element in gardening now—that in our proposed school of horticulture must be well taught also. Wide as may be the conception, yet all is possible if the Royal Horticultural Society will wisely direct, and the gardeners of the kingdom will both encourage and support it.

THE GARDENERS' ORPHAN FUND.—A meeting of the committee took place at the "Caledonian" Hotel, Adelphi, W.C., on the 26th ult., Mr. GEORGE DEAL Presiding, the members being present in good numbers. The minutes of the last meeting having been read, the Hon. Secretary, Mr. A. F. BARRON, announced that the sum of £303 19s. 8d. stood to the credit of the fund at their bankers. Subscriptions and donations were announced to the amount of £38 19s. 8d., including £7 12s. from Mr. WILLIAM WILDSMITH, of Heckfield Gardens, as small sums received from visitors to the gardens; £10 as the balance remaining from an entertainment given at the Vestry Hall by the young men of the Chiswick Gardens in aid of the Fund; and £11 8s. 8d. received from local secretaries. Mr. R. DEAN handed in the sum of £1 0s. 6d. from a collecting-box at the annual exhibition of the Oxford Carnation and Picotee Union at Oxford on August 7 last. Mr. O. THOMAS, of Chatsworth Gardens, wrote to the effect that he, in conjunction with the gardeners of the locality, were arranging a musical entertainment at Chesterfield on November 14, and inviting the attendance of a representative of the committee. The Chairman was requested to represent the body if he could conveniently do so. The Hon. Secretary reported that 3000 copies of the annual report and list of subscribers printed for circulation were nearly paid for by the advertisements which appear in the report. Mr. W. BISHOP, The Grove, Teddington, was appointed a local secretary for that district. A report prepared by the Chairman and Hon. Secretary in reference to the guardians

SUPPLEMENT TO "THE GARDENERS' CHRONICLE," NOVEMBER 3RD 1888.



THE PHOTOGRAPHED BY J. W. VANDERKAM, 1888.

THE FLOWER GARDEN, BELTON PARK, LINCOLN.

appointed for the children in receipt of the benefits of the Fund was laid on the table, from which it appeared that a relation had been appointed in every case, and in nearly every instance the mother of the child; also that the arrangements for placing a child upon the Fund in accordance with the terms of the gift of Mr. N. SHERWOOD had been completed. The amount of money paid as the first quarterly allowance to the eleven children now upon the Fund was £35 15s. Various accounts were ordered to be paid, and the proceedings closed with a vote of thanks to the Chairman.

HORTICULTURAL CLUB.—The following circular has been issued:—"The Club has now been in existence for twelve years, and has played no unimportant part in keeping alive the interests of horticulture, both by gathering together in social intercourse those who are interested in the pursuit, and also by the dissemination of knowledge by the papers which have been read at the meetings, and afterwards in the gardening papers. The committee have recently come to arrangements with the Hotel Windsor Company, Victoria Street, Westminster, and the Club has entered upon the occupancy of its new quarters there. The situation is central, close to the offices of the Royal Horticultural Society, and within three minutes' walk of the St. James' Park Station of the District Railway. The hotel is well known as one of the best in London, has excellent smoking and billiard rooms, swimming bath, &c., and special arrangements have been made with the proprietors for the accommodation of members at a reduced rate. The committee think, therefore, that a better support ought to be given to the Club, and would urge upon its members the necessity of enlisting new candidates for membership. Enquiries should be addressed to the Secretary as above."

BOISSIER'S "FLORA ORIENTALIS."—M. BUSER has published a supplementary volume containing a sympathetic biographical notice of the ardent and acute botanist, to whom we are indebted for this standard work. Various additions are inserted, together with an enumeration of collectors' numbers, which will be very serviceable to botanists and herbarium-keepers. A portrait of BOISSIER, views of his herbarium, now belonging to the town of Geneva, and a map, are comprised in the volume.

NATIONAL CHRYSANTHEMUM SOCIETY.—A largely attended meeting of the committee took place at Anderton's Hotel, Fleet Street, E.C., on the 29th ult., Mr. E. SANDERSON, the President, in the chair. The Eastbourne Chrysanthemum Society was admitted into affiliation, and eight new members were elected, bringing the total up to 581. The Hon. Secretary reported in reference to the provincial show at Sheffield on November 16 that everything promised very favourably, and that great interest was being shown in the exhibition throughout the town. Also that the authorities of the Royal Aquarium had given permission for the British Fruit Growers' Association to hold a meeting at St. Stephen's Hall on Thursday, November 8, and that this meeting would not interfere with their own exhibition. It was resolved that Sir GUYER HUNTER, M.P., one of the Fellows of the Society, be requested to open the exhibition at the Royal Aquarium next week, and he has since signified his willingness to do so. The Hon. Secretary also reported that 150 copies of the new edition of the Society's Catalogue had been sold, and that he had received an application for two dozen copies from Mr. E. H. LIBBEY, of the *American Garden*, New York, and that the sum of £52 10s. had been paid for medals supplied to affiliated societies. It being deemed advisable, in the interests of the Society, that a Foreign Corresponding Secretary should be appointed to deal with a large amount of foreign correspondence, Mr. C. HARMAN PAYNE was appointed to that office. As it is more than probable that a number of novelties in vegetables will be submitted for certificates at the autumn show, it was resolved that the granting of certificates shall be

left in the hands of the vegetable judges. It was resolved that several Gold Medals of the Society should be ordered, the cost of each not to exceed 5 guineas. The annual dinner of the Society was fixed for Thursday, December 13, at Anderton's Hotel, Fleet Street, E.C., the arrangements being left in the hands of the Hon. Secretary. A vote of thanks to the Chairman brought the proceedings to a close.

TROPICAL FRUITS.—The Division of Pomology of the United States Department of Agriculture has published a report of the tropical and semi-tropical fruits grown in the Southern States. The report has been prepared by Mr. H. S. VAN DEMAN, chief of the Pomological Department. The several fruits are enumerated, and details given as to their culture, and the insects and diseases to which they are subjected.

STOCK-TAKING: SEPTEMBER.—Appended are some excerpts from the "Trade Returns" for the month of September. To save space many items are simply noted in the general summary, the figures being sufficiently expressive and suggestive. We have no idea that the interdependence will ever be reduced—rather that it will be extended, and for the benefit of the nation. But we have also an idea that we can help ourselves much more than we do now, and that much of the educated labour now so generously supplied to our friends and relatives abroad could be much more profitably utilised at home. The following table is extracted from the summary of the imports from foreign countries and British possessions for the month of September last compared with the corresponding period in 1887, showing the increase (+) and decrease (—) as the case may be in the different sections:—

	1887.	1888.	Difference.
	£.	£.	£.
§ II.—(A.) Articles of food and drink—duty free ...	9,108,126	9,803,163	+695,037
(B.) — do., dutiable ...	2,552,319	2,363,452	—188,867
§ VI.—Raw materials for textile manufactures (including Flax, Hemp, and jute) ...	3,154,064	2,800,026	—354,038
§ VII.—Raw materials for sundry industries and manufactures (including wood and timber, hewn, sawn, split, dressed; vegetable materials, for paper-making, &c.) ...	3,636,179	3,777,477	+140,998
§ IX.—Miscellaneous articles (including Clover, grass, Flax, Rape, Lin-seed ...	890,813	1,068,614	+207,801
Total value ...	27,191,594	28,414,372	+1,222,778

We have space for only a few items, as follows:—

	1887.	1888.	Difference.
§ II. Fruit:—			
Apples, raw ... bush.	166,107	419,336	+253,229
Unenumerated, raw	181,208	821,978	+340,770
Onions	487,018	381,451	—105,567
Potatoes cwt.	61,508	43,119	—21,389
Vegetables, raw, unenumerated ... Value	£39,612	£13,143	+£23,501

It might not be found difficult to give the items in the case of fruits and vegetables "unenumerated."

DOMINION OF CANADA.—A new edition of the official *Handbook of Canada* has just been published with the approval of the Secretary of State for the Colonies and the Canadian Government, and can be obtained, without charge, on application to the office of the High Commission, at 9, Victoria Chambers, S.W. The handbook contains the latest statistical data respecting the financial position of the country, its trade and commerce, and other matters of interest to the general reader; while the demand for labour, the openings offered by the

different provinces in connection with settlement, and the investment of capital, are also fully dealt with.

THE NEW VEGETABLE.—It appears, from the letter of a correspondent, that the *Stachys tuberifera*, to which we alluded last week, will not succeed in all soils. We narrated our experience on clay. On sand our correspondent tells us that he has not succeeded in obtaining a tuber bigger than a horse-bean, while the plant itself does not grow more than 6 inches in height. This is very different experience from ours, and points to the necessity for a deep, rich, moist soil as the most suitable. Perhaps in the poor sand it may be induced to flower and have its name registered like a good citizen.

"REICHENBACHIA."—The following plants are figured in the last number:—

Zygopetalum Wendlandi, t. 53.—A native of Costa Rica, with flowers 4 inches across with greenish-white sepals and petals, and a broad labellum always recurved at the tip. It is adorned with a large blotch of violet-purple and heavy pencillings of dark plum. The temperature under which it should be grown ranges from 60° to 70° Fahr. The plants should be placed in a moist and shady position, and must never be allowed to become dry.

Cypripedium selligerum majus, t. 54.—A cross between *C. barbatum* and *C. philippinense*, Rehb. f. it requires to be shaded from direct sunlight, but delights in a hot moist atmosphere. The flowers have long crenate petals, whitish at the base with the green veins and some dark blotches, and light mauve-purple on the anterior blade. The sepals are white with reddish-violet veins. The lip is brownish.

Angræcum articulatum, t. 55.—A rare species, from Madagascar, with graceful pendulous racemes of white flowers with long, thread-like spurs. It should be grown in a basket, and hung close under the roof, in a light position, in an East Indian house, where the temperature in summer would range between 70° and 80°. It likes plenty of water in summer, but care must be taken not to overwater in autumn and winter.

Lælia anceps Sanderiana, t. 56.—A lovely variety, very closely allied to the exquisite *L. anceps Dawsoni*, but differing from it in its less rhomboid petals. It begins to flower in December, remaining until February.

"THE BRITISH MOSS FLORA."—The eleventh part of this work, which reflects so much credit on Dr. BRAITHWAITE, has just been issued. It is the commencement of a second volume, and begins with an account of the *Grimmias*, marked by all the conscientious care and skill which has been so characteristic throughout.

"KÖHLER'S MEDIZINALE PFLANZEN."—The coloured figures of this publication are so excellent and so cheap that we call attention to them, as others besides pharmacists cultivate these plants. EGORN KÖHLER, of Gera, is the publisher of the book, which may be had in parts from WILLIAMS & NORRIS.

GARDENING AND PHILANTHROPY.—If any one would witness an illustration of these in combination he can do so by visiting one of Dr. BARNARD's institutions known as the Girl's Village Home, at Barking Side. Here about 9 acres of ground, formerly fields studded with trees, have been converted into a model village, upon which have been erected forty-nine cottages, formed each of two in the usual semi-detached style, but united together for domestic purposes. In these cottages, each of which stands within its own grounds, there are located 800 girls—a portion of the waifs and strays of the London streets, gathered here to be clothed, fed, educated, and prepared to fight the battle of life. There are forty-nine commodious cottages. From twenty-five to thirty children are located in each cottage, under the care of a mother—generally some lady who devotes herself to the work; and it is said by those who are in the habit of visiting the village that the most cordial sympathy exists between the mother and her temporary family. The

cottages form two rectangles, and within the lines there is an expanse of some 7—8 acres facing a village green and garden. The garden is not enclosed in any way, but is free for the children to play in, and one of Dr. BARNARD's leading ideas is that the children should freely mingle and play in the homely fashion they would do on a village green. Round the circumference of the green and garden run broad gravelled roads of great width, well constructed, with similar roads joining them in cross lines; and there are thousands of yards of walks laid with Kentish rag and tar paving, and these walks wind about in various directions, but in all cases avoiding the old timber trees, which have been as fully preserved as possible. Each cottage has its garden, and it is intended that the children shall cultivate these; and it is proposed to institute a series of competitions, to incite the children to cultivate their gardens to the utmost. The entire reconstruction and laying out of the grounds was entrusted to Mr. WILLIAM HOLMES, of the Frampton Park Nurseries, Hackney, who is just bringing the work to a close. The design is a fine one, and includes a large extent of grass plat, with belts of shrubbery, large circular beds of Rhododendrons. The rockwork surrounding the large basins it is contemplated to plant with aquatics, and there are two Rose temples; whilst here and there, at prominent points, scroll flower-beds have been laid down. As much of the planting was done in late spring, the wet summer has proved very helpful, and but few failures have resulted. The cottage paths are "granolithic"; they are carried all round by the back offices. The drainage of each cottage, and indeed of the whole village, appear to be carried out in the most complete manner. At one point—that opposite the residence of the superintendent—a glimpse of the whole extent of the grounds can be obtained; the design in laying out being so arranged. One large cottage, raised to the memory of the late Earl Cairns, serves the purpose of a board-room, &c. All the dwellings are planted with creepers of various kinds, and they are fast covering the walls.

CHISWICK GARDENERS' MUTUAL IMPROVEMENT ASSOCIATION.—At the annual general meeting of the members of this Institution, held on Friday evening last, October 26, Mr. George Gordon was unanimously elected Chairman of the meetings during the ensuing session. The following papers were promised to be read on the undermentioned dates:—November 2, Opening Address, by the Chairman, Mr. George Gordon; November 9, "What constitutes a Gardener," Mr. John Fraser; November 23, "Roses and their Cultivation," Mr. T. Bones; November 30, "Economic Plants of the Order Labiata," Mr. A. Parsons; December 7, "An Over-supply of Gardeners—a Remedy," Mr. J. Barry.

HIGH-PRICED CYPRIPEDIUMS.—Messrs. PROTHORPE & MORRIS, of Cheapside, have sold for 150 guineas a small plant, with three leaves, of a hybrid Cypripedium, known as Cypripedium Marshallianum, to a gentleman resident in America. The plant was a cross between *C. venustum* and *C. concolor*. A small plant of *C. leucorrhodum* was sold at the same time for 40 guineas.

FILMY FERNS AT KEW.—Readers interested in filmy Ferns will be pleased to learn that the magnificent collection presented to Kew by Mrs. COOPER FOSTER, in April of this year, is now safely established in its new home, and that almost every one of the plants has made considerable growth this summer.

CHRYSANTHEMUM SHOWS.—The following list of shows for November, includes all of which notice has been received by us. The opening only is given in the case of two-day shows, &c.:—November 5th, Surrey; 6th, Kingston; 7th, National, at Westminster, Bath, and Portsmouth; 8th, Teddington; 9th, Crystal Palace, Leicester, and Hitchin; 13th, Brighton, Winchester, Devizes, Cardiff, Watford,

Hammersmith, Twickenham, and West Kent (Bexley Heath); 14th, Market Harborough, Bradford, Bromley, Cornwall Polytechnic (at Falmouth), and Ancient Society of York Florists; 15th, Pembroke, Wilts, Aylesbury, Reading, Taunton, Wimbledon, and Royal Horticultural of Ireland; 16th, Devon and Exeter, Sheffield, (and National Provincial), Huddersfield, and Chiswick; 17th, Ramsgate, and Derby; 20th, Edinburgh, Oxford, Liverpool, and Hanley; 21st, Birmingham, and Midland Counties, Rugby, National (Committee), Croydon, Bristol, and Banbury; 22nd, Hull; 23rd, Pontefract, Bolton, and Stockport; 28th, The Hartlepool.

PUBLICATIONS RECEIVED.—*Michigan Agricultural College Annual Catalogue.*—*Lace and Lace.* (M. JESARUM & Co., Venice.)—*Souvenir d'une Excursion à Cintra.* By G. D. SAINT VICTOR.—*North of Scotland Horticultural Association Seventh Annual Report* (Aberdeen).—*Mushroom Culture Simplified* (London: HURST & SON, 152, Houndsditch).

THE FLOWER GARDEN.

HERBACEOUS BORDER.—The usual clearing-up may now be done; and this will be all the attention that it will require for the remainder of the present year. Cut off old flower-stems to within about 2 inches of the crowns; afterwards hand-weed and rake over the surface, and, if the soil in the borders is not rich, a top dressing of well-rotted manure may be laid on about 2 inches thick. Avoid pointing over the surface with a fork or spade, for the roots of the plants are so near to it that only injury will result thereby. The present is the best time of the year for making new, and replanting old, borders, owing to the fact that more species of plants may be lifted and divided than at any other period. For the benefit of those who are taking-up the cultivation of these plants for the first time, and who contemplate making new borders this autumn, a few details may be of some assistance. First then, as to site, I would say that in all cases where the matter is one of choice, preference should be given for an open situation and well-drained soil; this, however, is not an absolute necessity, as many perennial plants will grow fairly well almost anywhere; still it is as well to bear in mind that there are places which may be described as bad, the worst possible being in the immediate vicinity of large trees, whose roots impoverish the soil, and the branches in the summer months shade the plants growing near. There is nothing objectionable in having a border in front of dwarf-growing shrubs, with trees in the background,—indeed, this is where we most frequently find them in private gardens, neither is there anything to be said against their being in close proximity to a fence or a wall with an east, west, or south aspect. Having selected the site and marked out the extent of the border, the ground should be trenched over, and if out of condition a dressing of decayed manure should be worked into the soil as the digging proceeds; the character of the soil in each case must determine the matter of bringing the bottom spit to the top; in many instances it is not advisable to do so. If the soil be of a stiff, retentive nature, and liable to bake on the surface in hot weather, nothing is better than mixing a liberal quantity of burnt clay, wood-ashes, leaf-mould, or finely sifted coal-ashes along with the staple on the surface.

In planting an open border—that is, one not near a wall or shrubbery—of, say, 12 feet wide, the arrangement of the plants ought to be of such a character that the border will present a double face, so to speak, the tallest growing species being in the centre, and gradually reducing the height down to the outside. On a border of this width seven rows of plants will be sufficient, and they may be arranged as follows:—Central row: Delphiniums of sorts, Pyrethrum uliginosum, Helianthus rigidus; these to be planted at a distance of 6 feet apart; the majority of these will grow from 4½ to 6 feet high. The second row may be at a distance of 2 feet from the preceding, and may contain Michaelmas Daisies in variety, Spiræa aruncus, Verbascum nigrum, V.

blattarioides, V. niveum, Bocconia japonica, Enothera grandiflora, Papaver bracteatum, Solidago canadense, and Lilium candidum. These will average from 3 to 4 feet. The third row from the centre should be at a distance of 18 inches from the second, and may be planted thus:—Anemone japonica, Aquilegia corulea, A. chrysantha, Asphodelus luteus, Dictamnus fraxinella, Achillea ptarmica fl. plena, Aster dumosus, A. grandiflorus, A. amellus, A. a. bessrabicus, Astrantia major, Chrysanthemum arcticum, Dielytra spectabilis, Doronicum caucasicum, Geum coccineum, Hemerocallis flava, Iris amœna, I. Kämpferi and its varieties, Lobelia fulgens, L. syphilitica, Lychnis chalcidonica, (Enothera Youngi, Phlox, florists' varieties; Rudbeckia Newmanni, and Stenactis speciosus. The next row should be 8 inches from the edge of the border, and may be planted with such species as Campanula collina, C. carpatia, Dracocephalum austriacum, Gentiana verna, Hepatica triloba and varieties, Iberis gibraltarica, Tussilago farfara variegata, T. fragrans, Veronica candida, V. reptans, Helleborus niger and its varieties. The above will form a fairly good and interesting collection, and will afford a long succession of flowers. Before planting tread the surface down moderately firm, and as the planting proceeds press down each plant also, and finish off with a top-dressing of half-decayed manure. Young plants raised from seed the current year may also be planted out now, not forgetting to disentangle the roots of such as are pot-bound.

Bulbs.—The majority of Dutch bulbs for flowering in beds outside ought to be planted now, including Hyacinths, Tulips, Narcissus, &c. Plant also a few Anemones and Ranunculuses for early flowering. It will be advantageous to cover all these subjects with about 2 inches of cocoa-fibre refuse. J. Horsfield, Heytesbury.

FORESTRY.

TIMBER SELECTION AND MARKING.—As the month of November opens, this is by far the most important work of the forester. So important is it indeed, that many owners prefer to keep a general oversight of the operation themselves. Where the timber is of an ornamental character this is no doubt desirable; but under other conditions it is well that the forester be allowed as free a hand as possible, for being more constantly in the woodlands, his acquaintance with the wood under his charge is naturally closer. This, however, is of course quite a matter between employer and employee, and is only remarked upon in passing. To treat the subject in order, the first consideration will be

Marking Instruments.—These are not so unimportant as may at first appear, and will consist of either knife (scribe), hammer and axe combined; and of paint brushes. I have seen standing timber marked with pencil, in one case especially on an estate belonging to the Ecclesiastical Commissioners, and the figures remained visible for several years, as the timber was not felled as intended; but this is not to be recommended. For timber-marking generally there is probably no instrument so much used as the knife or scribe. This in one form or another is familiar enough to most who are used to woodland work, but there is probably not one instrument in ten which is thoroughly effective. The most common pattern is that which closes like an ordinary pocket or pruning knife, and not unfrequently is set in the handle by the side of a knife-blade. Such an instrument as this may do duty once, but is totally unsuitable for any amount of work. A great essential in a good timber scribe is thorough rigidity, and this the ordinary hinged instrument lacks to a very great extent. Another drawback is the shortness of the "bill" or cutting portion, and it is also very often badly formed. The instrument I use, and which I have given a good deal of wear in an extensive practice, I obtained from a firm in Hereford, and is by far the best thing which has come under my notice. It is used by most of the railway companies' inspectors, and consists of an octagonal Walnut handle, about 5 inches long, somewhat Pear-shaped. Into this the blade, about 3½ inches long, screws very firmly, and the whole instrument is as rigid as though made in one piece. The "bill," or cutting portion, was originally about 1½ inch long, and carefully turned, so that the curved edge which makes the incision works quite smoothly. When not in use the blade goes readily into the vest pocket, and the handle into the coat. The cost of this instru-

ment is 6s., and new blades can be obtained separately when necessary. The next most essential instrument is the marking hammer and axe combined. I know of no firm which makes this a specialty, so its manufacture has generally to be entrusted to local people who imperfectly understand what is necessary. This hammer may be in various forms, the chief points to consider being a clear and well cut letter or letters on the face and an axe at the tail, large and keen enough to remove Ivy, the rough bark, &c., from the stems of the trees, and leave a surface sufficiently smooth to obtain an effective impression from the opposite end of the hammer. The blade of the axe may either be hollow or solid. In the former case the cutting edge will be merely a curved band of steel, welded at the extremities to two arms springing from the centre of the hammer. When made in this way there is a considerable gain as regards lightness, and the whole thing looks more symmetrical, without any great sacrifice of strength. The brush will not need much comment, as almost any ordinary paint, or small white-wash brush will do for the purpose. As the usage, however, on the bark, mosses, Ivies, &c., is rather rough, one which has been partially worn will answer, especially where dashes of colour and not letters or figures are required.

Methods of Marking.—The points to be borne in mind in carrying out this work are intelligibility, and giving a character to the marks which cannot easily be imitated or tampered with. What I mean by intelligibility is that it is necessary to consider that the bulk of the people who have subsequently to view, fell, and cart away the trees will not be so well acquainted with names of fields, plantations, hedgerows, and the like, as those to whom the marking is entrusted. Auctioneers are apt to cause a good deal of confusion in this way. I have not unfrequently seen in a catalogue of a single sale the numbering commence with one in half-a-dozen places. This is most perplexing to strangers, as they cannot be expected to know the situation from any description appended. It is a thing which often leads to trouble and confusion, and is a caution as necessary in private sales or sales by tender as in auctions. Circumstances must of course suggest the actual way; but, speaking generally, a combination of figures and letters in white paint, will be found the most simple and correct, as, if carefully managed, any repetition can be avoided. In the prevention of tampering with, or the imitation of marks, the hammer is most useful. In using the scribe or paint-brush, it is obvious that no great skill would be necessary to multiply the marks indefinitely, and cause loss or error. If, however, a hammer with a distinctive letter is used on each bole, either with or without the paint mark, and proper care be taken of it when not in use, the chance of felling the wrong timber will be reduced to a minimum.

Selection.—Though coming first in order I have purposely left this until last, so as to touch upon the tools and methods of marking. It is, however, out of all proportion, the most important part of the subject, and a thing requiring more judgment in park lands, fields, and the like, than in plantations. In thinning or felling plantations, when the order of work has once been laid out, it can be gone on with methodically, and does not entail the critical examination of every individual tree or pole, as must be done when timber is in any degree isolated. In mixed woodlands, too, where the trees are often of varying ages, greater care is necessary. Where it is possible, a second survey should be made before the final decision is come to. When this plan is followed, marking the trees in the first instance with a dash of whitewash greatly aids the operation, as it is at once seen, and when any alteration is made in the second survey, is as easily removed. The actual trees selected will naturally depend upon the object for which the felling is contemplated. If merely to clear the defective, ill-formed, and too crowded wood the business will be greatly simplified, and the chief care needed will be, that in removing a defective tree it does not spoil the appearance of its neighbour or of a group. I know a place well which a few years ago was one of the best timbered estates in the district. It is true that many of the trees had passed their prime, and the clearance of a considerable number of them was a necessity. In doing this, however, it does not appear that the slightest judgment was used, with the result that what would previously have made, for its size, as beautiful a park as any in England—as the site is of a delightfully undulating nature—has been reduced to a mere wilderness, and looks as though a tornado had swept through it. This is the more to be regretted,

as there is still timber enough to make a fairly wooded demesne, if only a little intelligence had been used in felling. It is, however, only fair to say that this is not the work of any one professing any knowledge of the subject, but I believe is the joint effort of the estate carpenter and the merchant. I speak of this incident at some length, as when on occasion I have had to say some rather strong things upon the way in which such important matters are allowed to drift, some writers have doubted whether they were really so bad.

One mistake amongst inexperienced men—and one which often leads to the disfigurement of places—is the fear of cutting down a small or young tree. None will dispute that it is most important to preserve every young tree possible, when it is in the right position, yet there are many cases where I would not for a moment hesitate to sacrifice a young tree and preserve an old one. This is especially so with groups which are often composed of trees of all ages, but which, nevertheless, so entirely depend upon each other that the larger ones cannot be removed without entirely destroying the effect of the others, if it does not their existence. Under such conditions I would remove the whole and replant, rather than leave two or three sickly, lanky objects simply because in the matter of years they had not come to maturity. By doing this one would often be able to save an interference with some other group altogether, as the cubic contents of an entire clearance would equal that of a tree here and there from two or three groups, and avoid the destruction of effects which it takes an average lifetime to produce. The same thing is true in a lesser degree of hedgerow trees, but does not apply nearly so much to woods which depend for beauty on their general mass. This selection question is so many-sided that in a paper like this it is only possible to touch upon a few of the commonest mistakes, but there can be no doubt that many of these mistakes could be easily avoided if owners would only recognise that it requires a considerable nicety of judgment in determining what trees to fell, and that the mere ability to handle an axe or a saw is not necessarily a qualification. *D. J. Yeo, Lyngham, Wilts.*

NURSERY NOTES.

MESSRS. BACKHOUSE & SONS', YORK.

THIS grand old establishment, with its fine collection of Orchids, its matchless stores of Filmy Ferns, its complete and well-kept collection of alpine and other hardy plants, and its large, select, and well grown stock of most things appertaining to a first-class nursery fully maintains its old reputation, and that is all that need be said on the point, for that that reputation is one of the highest that a nursery establishment need aspire to is well known. It seems a difficult task to undertake an enumeration of even the most prominent of its attractions, but nevertheless a note of a few things taken at a visit on the 25th ult. will be of interest to many.

THE ORCHIDS.

Among these the York Cattleya-house has always caused a great amount of interest by reason of the excellent quality of the plants and flowers which were formerly grown in the fine, well-ventilated, roomy, span-roofed structure, without the least attempt at shading from the fierce heat of the sun's rays even in the hottest summer. That the plants were fine none could gainsay, although most good Orchid growers condemned the practice of growing them unshaded. Ultimately, Messrs. Backhouse decided to use a thin shading, and all Orchid growers will be interested to know that it has had a beneficial result; less water being required, more root is made, and improvements in all directions have resulted.

The varieties of *C. gigas*, the large leafy masses of which are well-known to visitors, are, if possible, more robust and more floriferous than heretofore; and the *C. Trianae* are equally good, and contain some charming named varieties, among which the following may be named:—*C. T. The Bride*, a lovely white, with pearly tints; *C. T. Enchantress*, a grand light form; *Aurora*, *Eboracensis*, *insignis*, and the crim-

son-feathered *C. T. Backhousiana*. *Cattleya labiata* Schröderæ, *Lælia purpurata*, *L. elegans*, and other of the large *Cattleyas* and *Lælias* are also well sheathed for flower in the large Cattleya-house; and a good batch of *Odontoglossum citrosomum* enjoys the well-lighted situation in a corner thereof.

The varieties of *Lælia anceps* have many flower-spikes, and form the principal feature in the Mexican-house; in which, too, is a grandly flowered lot of *Odontoglossum grande*, *Lælia albida*, *L. purpurata*, *L. Gouldiana*, *L. autumnalis*, &c.; and a number of robust plants *Cypripedium Spicerianum* which have been grown in the *Odontoglossum*-house for the past summer, are just expanding their flowers. The plants are immeasurably superior to any that have been kept in heat all the year, and so probably would be more than one-half of the other *Cypripediums*.

The *Odontoglossums* and other cool Orchids are in splendid condition. A sprinkling of good things noted in flower among the plants of *O. crispum* and *O. Harryanum*. The best white *Lycaste Skinneri* alba, some pretty scarlet *Sophranitis*, *Lælia præstans*, *Odontoglossum Insleyi splendens* (in bud) were remarked in flower or approaching the flowering stage. Among a well grown and varied collection of *Cypripediums* in one of the warm houses many were in flower or in bud; and in another house some plants of an importation of *Cattleya aurea*, which it is expected will yield some of the beautiful *C. Hardyana*, were in bud. One great advantage to buyers of Orchids at the York Nurseries is that the plants are fairly and even hardily grown, so that they travel well and thrive after a journey, which nursed-up plants often succumb to at once, or are invalids for years.

The Disas are marvellously well done here, and the greater part of a cold house is devoted to a plantation of them. Here many yards of *D. grandiflora* may be seen of a vigour altogether astonishing to those who have only seen ordinary plants. As may be required the strongest are taken up and potted for sale, and when in bloom the house is a beautiful picture of vivid scarlet flowers. Other distinct and lovely forms of *D. grandiflora*, too, are here, and notably a rich crimson form, and one with vermilion flowers tipped with yellow. Treated also in a similar manner are lesser quantities of the handsome *D. racemosa*, the rare and lovely large white *D. crassicornia*, and several species of the grassy-leaved section.

The Filmy Ferns.—These form a display which, for quantity and variety, is unequalled. The collecting and growing of these lovely plants have cost Messrs. Backhouse many years of labour, but the result attained is such, that a very beautiful array of them has been acquired, whose beauty must be seen before a true idea can be formed of them. In the matter of variety, it should be said that this firm publish a separate catalogue of Filmy Ferns, in which some thirty fine species and varieties of *Hymenophyllum*, and fifty of *Trichomanes*, are enumerated and described. Those seen in the sunk, unheated rockery, falling in graceful masses over the rocks, or nestling in quiet nooks, are very beautiful; nor are the lesser specimens in pots or on Tree Ferns in the houses devoted to the plants for sale scarcely less attractive. In the rockery is an unique mass of a very elegantly cut form of *Trichomanes radicans*, collected many years ago in a stone quarry near Leeds, and perhaps the last recorded in Yorkshire. Very lovely too, were great masses of *Hymenophyllum flexuosum*, *H. pectinatum*, *H. caudiculatum*, *H. crispatum*, *H. cruentum*, *H. dichotomum*, *H. dilatatum*, *H. demissum*; *Trichomanes radicans dissectum*, *T. reniforme*, *T. Laschnathianum*, *T. meifolium*; while *Lomariopsis heteromorpha* seems also to revel in the cool cave-like atmosphere.

The general collection of Ferns and the noble rockery with tree and other Ferns, are worthy of the Filmies. The house of *Gleichenias* contains perfect specimens of all sizes; *Nipholobolus lingua corymbifera* is in quantity, so also the rare *Onychium*

auratum, and the miniature Tree Fern *Lomaria*, *L. Herminieri*, with its young leaves of a crimson hue. The British and hardy section, too, is well kept up. In the other houses are good collections of stove and greenhouse plants, very well grown, among them being a fine collection of *Nepenthes*, one of the specimens of *N. Mastersiana* and another of *N. Rafflesiana* being about 4 feet across, and grandly pitched; *N. Northiana* and *N. Veitchii* are noble specimens, all the others being good; and one which seemed to be a nearly green form of *N. Rafflesiana*, probably new. Among fine things in quantity was a large stock of white *Lapageria*, a large batch of *Rogeria gratissima*, interesting *Bertolonias* and other painted-leaved plants, well-grown *Pleroma elegans*, a house of choice *Cliveas*, the neat *Azalea roseiflora*, *balsamiflora* and the large-flowered Indian species in great numbers of well-grown specimens; *Heaths* and New Holland plants, &c.

For the extensive outdoor nursery of trees and shrubs, which some will doubtless consider the most important part, at present it must suffice to say that everything is, as usual, good, and kept in perfect order.

IRELAND.

BELMONT NURSERY, BELFAST.

This nursery is pleasantly situated in a beautiful semi-rural district about three miles from Belfast. A fine block of some ten or twelve plant-houses confronts the entrance gate, and contains a varied stock of well-grown stove and greenhouse plants, including masses of Ferns for cutting and other purposes, Palms, Cycads, and Orchids. Tuberous *Begonias* here, as everywhere at the present time, have taken a hold as a floricultural fancy, and a varied and fine collection is grown. Celebrated as the name of Dickson is in connection with Rose-raising and growing, it would have been surprising not to have found some portion of the glass devoted to the Rose in the establishment of Mr. Hugh of that name, and the visitor is not disappointed. A large stock of Teas is grown expressly to meet the demand for plants for early forcing. The plants were already (beginning of September) fully matured, and were turned out-of-doors to rest; fine sturdy bushy plants they were, with short-jointed solid growth, giving great promise of bloom. A fine batch of *Maréchal Niel*, and *Gloire de Dijon* occupied the roof of another house, and the vigour they exhibited in their stout long shoots was exceptional.

In the neighbourhood of the houses, borders and quarters were planted with *Gladioli*, *Dahlias*, *Carnations*, *Picotees*, &c., all of which are specialties of Mr. H. Dickson. The two first-named, and particularly the second, were considered backward, and inferior to their usual form, owing to the ungenial weather that had been experienced, yet they were quite up to the average in growth and flowering, though the blooms were smaller than in ordinary seasons.

Large numbers of fruit trees are grown, notably Apples. Although a fairly representative collection is grown, the following are the chief of the varieties most recommended for the district, either as bush, pyramid, or standard trees, viz.:—*Stirling Castle*, *Ecklinville*, *East Lothian Seedling*, *Keswick Codlin*, *Lane's Prince Albert*, much thought of; *Peasgood's Nonsuch*, *Hawthornden*, *Kerry Pippin*, and *Irish Peach*.

Roses are much favoured here, large breadths of them are grown, and the plants showed much vigour, and the wood was getting well matured. A large batch of H.P. seedlings, is regarded by Mr. Dickson with considerable interest. They are expected to flower next year in character, but some of them have this season exhibited such signs that we have reason to hope that there will be both novelty and quality among them. Tea Roses do finely in the open ground. The season has been such an exceptionally bad one that it was a matter of interest to know what varieties flowered and maintained their character for

quality best throughout. The following are a few out of a considerable list I noted, viz.:—*Alfred Colomb*, *Alfred K. Williams*, *Annie Wood*, *Baroness Rothschild*, *Beauty of Waltham*, *Charles Lefebvre*, *Comte de Rambaud*, *Duchess of Bedford*, *Duke of Albany*, *Earl Dufferin*, *Etienne Levet*, *Gloire Lyonnaise*, *Her Majesty*, *Horace Vernet*, *Lady Mary Fitzwilliam*, *Lady Helen Stewart*, *La France*, *La Rosiere*, *Lord Bacon*, *Madame Eugene Verdier*, *Madame Gabriel Luizet*, *Madame Victor Verdier*, *Marie Baumann*, *Merveille de Lyon*, *Mrs. Jowitt*, *Mrs. John Laing*, *Pride of Waltham*, *Prosper Langier*, *Senateur Vaisse*, *Thomas Mills*, *Ulrich Brunner*. It will be noted that among the foregoing thirty-one sorts only three of the most recently introduced have stood the test of a bad season equally well with the best of the standard varieties of older date; the three alluded to are in italics. Among Tea and Noisette Roses the best during the season were *Bouquet d'Or*, *Catherine Mermet*, *Comtesse de Nadaillac*, *Grace Darling*, *François Kruger*, *Madame de Watteville*, *Madame Eugene Verdier*, *Madame Lambard*, *Madame Marie Van Houtte*, *Maréchal Niel*, *Niphetos*, *Perle des Jardins*, *Princess Beatrice*, *Rubens*, *Souvenir d'Elise Vardon*, *The Bride*; of these only the two in italics among the latest introductions have proved themselves insensible to the inclemency of the weather. William Allen Richardson had proved itself admirable, and very profuse in buds for cutting.

The general stock outdoors is varied and of very fine quality. Conifers, such as *Picea pungens glauca*, *Abies Pattoni*, *A. magnifica*, and *A. nobilis* were very fine, some large specimens of the last named standing in a belt in front of the proprietor's house bearing many fine cones. *Cupressus macrocarpa* and *Pinus insignis*, both of which thrive well and are in great demand in the district, are grown in considerable breadths. The elegant *Gynierium pumilum* was flowering freely and has this advantage over its more imposing relative, *G. argenteum*, that it appears to open its plumes of flowers in districts where the latter hardly forms its sheaths. The finer sorts of deciduous trees are also well represented in the stock, *Acer Schwedleri* was in beautiful colour and placed in fine contrast with *Quercus concordia* and *Acer Negundo variegata* in grand specimens harmonised most pleasingly with the bronze-purple of *Prunus Pissardi*. These with *Fulham* and other Oaks, *Purple Beech* and other deciduous ornamental trees and Conifers are displayed in sizes, ample enough to exhibit their respective characteristics in a border of about 200 yards in length by 9 yards wide, extending from the entrance gate along the south boundary of the nursery to the east side of the proprietor's house. A highly illustrative border it is, and one which must prove of great use to the intending purchaser of trees. Along the front, *Olearia Haastii* is found in rounded masses of about 3 feet high and as much through, and flowering so profusely as to resemble snowballs. Altogether the nursery in every department is a most orderly and complete one. Knock is the first railway station out of Belfast, and is the one nearest to Belmont, the distance being about a mile.

THE NEWTOWNARDS NURSERIES.

These lie just outside the pleasantly situated little town of that name, which is the fourth station on the same line of railway from Belfast. As is well known, they belong to Messrs. Alexander Dickson & Sons. The plant-houses are numerous, and contain a varied assortment of stove and greenhouse plants in healthy condition. Specialties under glass are a good collection of tuberous *Begonias*, *Bouvardias*, *Maidenhair Fern*, *Lomaria gibba*, *Pteris tremula*, &c., which are grown by the thousand, and chiefly for furnishing. Many Roses in pots are grown, *Maréchal Niel* having one house of considerable length to itself. A considerable stock of pot Vines occupies another house; they are furnished with short-jointed, well-matured stems.

Of *Chrysanthemums* about 2000 are grown in pots, the blooms being chiefly for cutting, and the varieties are those most suitable for that purpose. They are

very well grown, and promise a fine harvest of bloom. Zonal *Pelargoniums*, double and single, are largely grown. The general stock out-of-doors is similar to that found at the Belmont Nursery. Very thriving stocks of *Cupressus* in variety and various *Retinosporas* occupy considerable breadths, and among the former is one sort of very free growth and highly glaucous hue, and which is much in demand for planting in the breezy country bordering the Clyde. It originated in the nursery, is named *Cupressus Lawsonii* var. *Dicksoni*, and is said to be unaffected by sea winds.

Roses are largely grown, and the stock is vigorous. The seedlings of the Rose, of which there are many here, some being already well known and favoured by rosarians, are being annually tested to ascertain if of any decided merit, and if their good points have permanency. We may mention *Earl Dufferin*, which has already received much attention from Rose growers, and which has fully maintained this season the position it had previously reached; *Lady Helen Stewart*, H.P., has proved itself to be a most trustworthy variety, even this unpropitious season, flowering from June to the time of my visit in the middle of September, with promise of a continuance of bloom to the end of the month at least.

Caroline Arden, H.P., which was put in commerce this season by the raisers, will well sustain the character of these pedigree seedling Roses. It is come of illustrious parents, viz., *A. K. Williams* and *Marie Baumann*. The flowers are large, full, perfectly formed, the petals round, large, and of great substance; the habit vigorous, and foliage bold and massive.

Of Tea Roses raised by Messrs. Dickson & Sons, and already put in commerce, I was well pleased with *Miss Ethel Brownlow*, which was introduced last year; and with *Lady Castlereagh*, of this season's introduction. Both are of vigorous growth, with luxuriant handsome foliage, and very profusely blooming and branching habit. The blooms of the former are large and full, the petals of great substance, large, smooth, bright, and of a colour which is salmon-pink shaded yellow at the base. The latter has very large, full, handsome flowers, the petals large, round, and smooth, of a soft rosy-yellow colour, the rose deepening in tint at the margin. Judging it from all points of view, the raisers look upon the last-named as an acquisition to its class. It has been awarded First-class Certificates by the Royal Horticultural Society of Ireland, the Glasgow and West of Scotland Horticultural Society, and the Glasgow Rose Society.

Among the many seedlings of Roses under test, but not yet brought out, I noted the following as being, in my opinion, of very high promise:—*Mr. James Brownlow*, H.P., a distinct flower, as well in foliage as in colour, the former being peculiar, strikingly so even at some distance; the blooms are large, full, and beautifully formed, and the colour a novel shade of rosy-carmine. A striking quality of the variety is the readiness with which it starts into flower at any time during the season after it is cut back; of this I had evidence in a number of plants that had been cut back a few weeks ago, and which had broken freely and was flowering from every shoot. I understand it has deservedly received two First-class Certificates this season. *Mrs. James Wilson* appeared to me to be a great acquisition. It is a remarkable vigorous, free-branching variety, and equally free flowering. The flowers are large, of much substance, and in form and build closely resemble those of *Catherine Mermet*; the colour a pale tint of lemon-yellow, appeared to me to be a new one. *Miss Jeanie Dickson*, H.P., is a fine variety, of great promise as a garden or exhibition flower. In habit it is vigorous and free, the flowers are large, globular, the centre high, from which the petals recurve, and thus display their delicate satin substance, the margins of each terminate in a fine silvery tint.

A notable feature in the management of the dwarf Rose stocks in both these nurseries is the lowness at which they are budded. The *Manettis* and *Briers* alike are treated in the same way. The stocks are thoroughly disbudded before being planted in the quarters in



FIG. 73.—*CAESALPINIA JAPONICA*: HARDY SHRUB; FLOWERS YELLOW; REDUCED ONE-HALF, DETACHED FLOWER REAL SIZE.

which they are to be worked—a point of practice which of course every grower carefully attends to, but here, in order to get the bud inserted at the lowest point in the stock the latter is laid at a very acute angle with the soil, so much so that in baring it, preparatory to inserting the bud, the heel is exposed, and it is at that point the insertion is made. The advantage is obvious—there is less liability to form suckers, and when the plants are to be used in pots there is no difficulty in burying the stock.

In a belt surrounding this nursery, composed of miscellaneous trees and shrubs which had been planted in the earlier years of its existence, some remarkable specimens occur. We noted particularly *Pinus insignis*, in perfect health, about 60 feet high, with boles from 16 to 20 inches in diameter; and *Cupressus macrocarpa* was about 60 feet high and

had assumed its true arboreal character, having spreading dense tops and boles about 18 inches diameter. *Erica codonodes* was to be seen in dense masses from 10 to 12 feet high and as much through, which must have a very striking effect when in flower.

CAESALPINIA JAPONICA.*

THE plant here figured (fig. 73) is a handsome and very interesting one. It first flowered in 1887 in the Coombe Wood Nurseries of Messrs. Veitch,

* *Caesalpinia japonica*, Sieb. et Zucc., *Ann. Bot. Nat.*, n. 3; Franchet et Savatier, *Enum. Plant. Jap.*, i., 111; *Gardener's Magazine*, July 21, 1888, p. 415 (with figure); *C. crista*, Thunberg., *Fl. Jap.*, p. 179; *C. septaria*, Miquel, *Probus*, p. 242 (non Roxburgh).

who introduced it from Japan several years ago. Certainly no other member of the genus has stood the test of the Coombe Wood plant, which can—as far as the South of England is concerned—be added to our lists of hardy shrubs. No doubt, when distributed, *C. japonica* will be welcomed in many gardens; it thrives at Coombe Wood on a sloping bank of gravelly clay and makes long shoots beset with strong hooked prickles. These shoots should not be cut away or pruned back but simply let alone. During the current year flowers were much more freely produced than in 1887, and now the cultivation of the plant is understood, it will doubtless flower abundantly every year.

The genus *Caesalpinia* contains—according to

Bentham and Hooker—thirty-eight species, and is distributed widely throughout all tropical regions. Several species afford valuable products, for instance, *C. coriaria*, the pods of which are imported from the West Indies and South America for tanning purposes; others yield dye stuffs. The slate-coloured seeds of *C. Bonducella* are largely made into bracelets, necklets, rosaries, &c. This species is a common climber on tropical shores, and in the Kew Museum are exhibited seeds that have been washed up on the shores of Kaffraria, Tristan d'Acunha, and St. Helena; they are also occasionally washed up on the Irish, Scotch, and Norwegian coasts.

The sub-order *Casalpinia*, with its seventy-six genera and about 500 species, is only represented in British arboreta by the genus *Casalpinia*, the Honey Locust (*Gleditschia*), St. John's Bread (*Ceratonia*), and the Judas tree (*Cercis*). *G. Nicholson*.

ROSES.

ROSES FOR WALLS AND PILLARS.

THERE is no more delightful purpose to which Roses can be put than that of covering walls and houses, or training them to pillars; and for this purpose Roses of a rampant habit of growth, which are most frequently called climbing Roses, are used. The term climbing is a misnomer, for they do not cling to anything unless by artificial means; they have no tendrils like the Vine, no small roots to fasten on the wall as they climb, like the Ivy or Ampelopsis, and must be carefully tended in order to get them to cover the required space; but if the Rose does so it is a joy—I do not say for ever, but for a long time. My own house has its north side covered with climbing *Devonensis*, which is made doubly lovely with the vigorous shoots of a *Wistaria*, *Belle Lyonnaise*, which, like its parent, *Gloire de Dijon*, is somewhat straggling; and *Longworth Rambler*, a dark red hybrid Tea, with close foliage completely covering the wall, and quite a brilliant object when in its full flush of flower; and on the east side I have *Madame Berard*, another straggling grower, and my grand plant of *Rêve d'Or* which was cut to the ground in 1880 and 1881, but is now fast re-occupying the place it was obliged to vacate. On the front of the house facing west I have a plant of *Madame Trifle*, and one of a white summer-flowering Rose which I found here twenty years ago; while I have a few as pillar Roses in the garden itself.

The Roses suitable for these purposes may be roughly divided into two classes—the summer and autumnal flowering ones; the latter are those—unless where there is an abundance of room to grow everything—that I should prefer, and advise others to grow. By autumnal flowering is simply meant that they will give blooms at intervals after the first great bloom is over, in the same way as the hybrid perpetuals and Teas do; in fact, many of them are, as we know, what are called climbing varieties of well known sorts: while the *Noisette* Roses seem peculiarly adapted for these purposes.

Amongst *Noisettes*, *Maréchal Niel* would hold a very high place, but for the habit of hanging its head down, and I have never yet seen it satisfactory in this position. The outside petals become discoloured, and the whole plant has a faded appearance. Of course, when you gather the flowers they are intensely beautiful—I only mean as a wall or pillar Rose. There was one on a cottage not far from this, and although it bloomed for some years most vigorously, yet at a distance it had the appearance of decay. The very first of the *Noisettes* for this purpose is one which, unfortunately, is too tender for general culture—I mean *Cloth of Gold* or *Chromatella*. I have often delighted in one which used to flourish on the front of a house in this parish where it held up its magnificent goblets, not so deep in colour as the *Maréchal Niel*, but with a short foot-stalk and with petals of great substance; while those who have seen it in the South of France or in warm

climes can never use superlatives enough in speaking of it. It will not, however, give much satisfaction out-of-doors in this country except in some very favoured spots.

The *Gloire de Dijon* race contributes some of the very best of the Roses suitable for this purpose. *Gloire* itself is a normal favourite, and since the day when it appeared as a stray seedling in *Jacotot's* garden walk at *Dijon*, has run a very successful course, and people who do not know any other Rose are safe when they talk of *Gloire de Dijon*. It will grow anywhere, and is an universal favourite, except in the exhibition box, where it generally manages to open too much, and spoil the appearance of the stand. *Madame Berard* is a beautiful daughter of this Rose, somewhat lighter in colour, but especially valuable for its autumnal blooming, in which respect it exceeds its parent. *Bouquet d'Or* is another Rose of this race, which differs somewhat from the two previously named in that its foliage is more dense and its growth not so straggling; *Belle Lyonnaise* has the straggling propensities of its parent, but is richer in colour, having, however, a very unfortunate propensity of coming into quatered or cleft flowers, which detracts from the beauty of their appearance. I think, however, as far as I have been able to judge, that the deepest-coloured, and freest autumnal bloomer of this race is *Madame Eugene Verdier*, good shape, very rich in colour, and a decided autumn bloomer. I gathered one the other day of the most intense yellow. *Madame Emile Dupuy* is another of this type which has been a good deal overlooked; it is of a pale fawn, the form good, and the foliage ample; it is, I think, one of the best of the pale-coloured Roses of this section.

There are two new flowers in this class, of which I have heard a good deal, but cannot say anything from personal knowledge; to one there attaches a melancholy interest, as it (*Henriette de Beauveau*) is the last Rose sent out by old *Lacharme*; it is said to be of a bright yellow colour, very free, of good form, and in all respects a desirable Rose; the other is, if its classification be correct—that is, if it is to be counted amongst the *Dijon* race—quite a new break as far as colour is concerned, for *Souvenir de Madame Metral* is described as bright cherry-red with darker shading, of good form, large size, distinct and good. This sounds well, but it will have to be seen whether it is really a pure *Noisette* of the *Dijon* race, or whether there is not some mixture of other races which would make it—like *Reine Marie Henriette* or *Cheshunt Hybrid*—a hybrid Tea. There is, indeed, amongst these so-called climbing Roses the same perplexity that exists in the non-climbers; for example, that most useful Rose, *Rêve d'Or*, to which class is it to be assigned? It is generally placed among the *Noisettes*; but it is very much *en rapport* with the Teas. The *Noisette* Roses are supposed to bloom in clusters, and so *Rêve d'Or* does at times; but it just as often sends out a single bloom, while it is oftentimes stated to be best designated a climbing *Madame Falcot*, and that Rose is unquestionably a pure Tea. Before leaving the class of *Dijon* Teas, I may say that in a favourable autumn all those mentioned are giving nice blooms, which would be better, but that we have very dense mist in the mornings, which, settling on the buds, prevents them from opening as they should do, especially as the air is perfectly still, without a breath of wind to blow the damp off. But *St. Luke* has been true to his word this year, and his "little summer" has been a great boon after the inclement season we have had. *Wild Rose*.

(To be continued.)

ROSE MARGUERITE DE ST. AMAND.

Let this be noted as a beautiful autumnal Rose. A piece of dwarf plants of this variety might have been seen recently in the Royal Nursery, at Slough, flowering freely; and with a very pleasant and soft shade of pink. The freedom with which it was blooming nearly at the close of September, was something remarkable. It is a delightful Rose, well worth planting for its autumn-blooming. *R. D.*

COLONIAL AND FOREIGN.

SAHARANPUR AND MUSSOORIE.

THE report of the Government Botanical Gardens for the year ending March, 1888, is before us, from which we see that the cultivation and distribution of Date Palms and Oranges, both matters of much importance to this part of India, is being vigorously prosecuted.

Mr. W. Gollan is now the Superintendent of the Government Botanical Gardens of the North-west Provinces, Mr. Duthie having been appointed to the superintendency of the Botanical Department for Northern India.

FRUIT IN NEW SOUTH WALES.

Last week we had the pleasure of tasting some deliciously flavoured Grapes and Apples from the famous *Calrossy* Garden at Tamworth. At this season of the year it is quite astonishing to see well-preserved Grapes, and Mr. J. Patterson is the only gentleman we know who takes the trouble to have Grapes almost all the year round. The Apples were of different varieties, and we must admit that at no time have we seen such a choice collection of Apples as those we saw last week from *Calrossy*. A nice, large, waxen-like Apple with blush cheeks was a seedling, which Mr. Patterson has named *Home Rule*, while the other varieties were what we feel sure would be profitable for exportation, and in England would bring high prices. Some Australian Apples lately sold in England brought from 2d. to 1s. 4d. each wholesale, and Pears brought as high as 2s. 6d. each, or £5 the case. What will any fruit growers say to these facts? The Hunter River can produce excellent fruits in abundance, and we think that our gardeners would do well to consider the advisableness of sending to England some of the productions of their gardens, in preference to selling all their produce here and then complaining of the low prices. We shall not be surprised to learn that Mr. Patterson is the first Northerner to try the experiment of exportation, and we hope that others will think the matter over, for we feel sure that a good trade could be established in sending fruits to the mother country. *Maitland Mercury*, July 17.

HOME CORRESPONDENCE.

PINK LORD LYONS.—I quite agree with "R. D." (p. 474) that this Pink deserves to be widely known, and also that it is the best of its colour. Having been successful in propagating this and other varieties of Pinks without bottom-heat, my method may be of use to others who may be desirous of increasing their stock. About the last week in June I put the cuttings in a bed of sandy soil; this I surround with a plain flat frame (four 6-inch boards nailed at the corners), then close down with an ordinary light, and keep it close and shaded with calico for about three weeks; and then inure the plants, now rooted, to air and light. About 80 per cent form roots, and make plants, which are strong enough for planting out early in October, or in April, as may be desired. *S. J. S.*

THE GREAT CHISWICK VINERY.—It was a very fortunate circumstance that the Apple-Exhibition at Chiswick, held in this really grand building, should have had overhead the accompaniment of literally thousands of bunches of fine and richly coloured Grapes. The Hampton Court and Cumberland Lodge Vines may be remarkable for the dimensions of each, but the houses they cover are insignificant, after all, as spectacles, compared with the lofty expanse of the Vine-covered roof the great house at Chiswick. Considering how old the Vines are which furnish this huge house, it is a matter for surprise that bunches and berries should be so large, and should so admirably colour and ripen. It is calculated that the house has produced this year some 2 tons of Grapes; that is, of course, an enormous bulk, although not at all excessive, for the wondrous roof area. Some considerable allowance also has to be made for the varieties planted in the

house, which are more choice than productive. To Fellows these excellent Grapes have been selling at 1s. per pound, a very low price indeed when compared with the different quality of the Grapes offered at such price in shops. The Fellows, therefore, have in return for their annual subscriptions some very material financial privileges in the matter of fruit and flower purchase, and can thus easily recoup themselves, plus their other privileges as Fellows, if they wish to do so. Putting the actual weight of the Grape crop at 4000 lb., however, that would give £200—not a bad result; although it is evident that, were the Grapes sold at shop-rates, the return would be much larger. The Grape corridor, planted its entire length with Alicante and Gros Colmar Grapes, shows just now a grand crop, which will certainly secure a much higher price per pound. With the fine show of Apples below, and the Grape crop above, the great vineyard at Chiswick was last week a noble sight indeed. X.

ASTER HYBRIDS.—I enclose you two seedling Asters; one, named John Loraine Baldwin, is 5 feet high, and has the largest flower of any of the *lavis* family. The parents are also enclosed, viz., *lavis* and *speciosus*. It takes the size of its bloom from the latter, and its habit from the former. There is also enclosed an improved seedling of *Novi Belgii* var. *densum*, having larger blooms. It is only 4 feet in height. As comparison both the forms are enclosed. E. J. Lowe, *Shirnewton Hall*. [In reference to the subject of the above note an Aster grower says:—"Aster *Novi Belgii* var. *densum* is correct. The seedling is a mere form, and corresponds with a variety of Aster N. Belgii, known in gardens as *versicolor maximus*. John Loraine Baldwin is no hybrid, but a seedling form of A. N. Belgii. The supposed parents are, first, an old well known variety of A. N. Belgii (not *lavis*, as stated). The other supposed parent is not an Aster at all, but *Erigeron speciosus*."] X.

PROLIFEROUS SPIKE OF PHALÆNOPSIS.—I was much interested on reading Mr. Watson's remarks in the *Gardeners' Chronicle* of October 13, p. 417, on young growth being developed from cut flower-spikes that had been placed in water instead of letting them remain on the plant, which is generally done, and which we here have been in the habit of doing without ever succeeding in obtaining a plant. We have a plant of *Angræcum Leonii*, which developed a young growth on the top of a flower-spike two years ago. The young plant has since grown very rapidly, and last spring bore a spike of three flowers. I have never heard of *Angræcum Leonii* having done so before, and I should be pleased to hear if Mr. Watson or any grower of Orchids has met with a similar occurrence. *Erin*. [We have before us, from Mr. Odell, an adventitious bud with roots, produced upon a flower stem of *Phaius grandifolius* after it been cut off and thrown under the stage. Ed.]

GISHURSTINE.—In your issue for the 13th ult. you speak of the efficacy of Gishurstine. There is no doubt but this is a good article for waterproofing and softening boots, and would probably be largely used by gardeners if it was sold at a reasonable price by the horticultural trade. This, however, seems to me to be far from the case. Gishurstine is supplied from Price's Patent Candle Company in tins of two sizes, mounted with the company's paper, with the prices 6d. and 1s. per tin printed on it, being what I consider too high a price for the said article. I think all readers of the *Gardeners' Chronicle* will agree with me when I say that a chemist's shop is not one's ideal of an establishment for cheap goods, yet I always buy my Gishurstine from a chemist, and though marked with the company's paper and prices as above stated, I can there procure either of the sizes at 25 per cent. below the stated price, viz., at 4½d. and 9d. per tin, being 3d. in the shilling less than the prices demanded by the horticultural trade. Undoubtedly the chemist referred to sells at a paying profit, and if so, what must be the profits of the horticultural trade? Looking fairly at the facts mentioned, I can hardly think the trade have so much pity for gardeners in general as one might suppose from reading reports of speeches published after such dinners as are held, say, for instance, in connection with the Gardeners' Benevolent Society. Let us hope the trade will take the hint, and not be above chemists' prices. *Hortus*.

HELIANTHUS LÆTIFLORUS.—In my note on p. 483, I wrote "*new authority*," not "*Kew authority*," it appears there was a misprint in the note from

which I copied the words. As now printed it might imply a disrespect for the Kew authority, which I did not intend. The case, however, is "*Asa Gray versus Kew*," and to settle it I propose to send dried specimens to Harvard to be compared with the authorised type preserved there. C. Walley Dod, *Edge Hall, Malpas*.

INSECT PREVENTIVES.—I notice that on p. 472 of your last issue soot, lime, and Hellebore powder are all recommended for the destruction of caterpillars, but perhaps it is not generally known that gas-tar is a first-rate preventive, which is better than cure. I have had whole plots of Gooseberry bushes devastated by them, and also Cabbage and Cauliflower. Since I commenced to use gas-tar the caterpillars have not made their appearance, and it is both a safe and a cheap remedy for the Gooseberry caterpillar and all others affecting green crops which are subject to attack. John McIntosh, *Glennachan*. [Please say how do you apply gas-tar? Ed.]

THE NATIONAL APPLE AND PEAR CONFERENCE.

—I was somewhat surprised to find that comparatively few market-growers put in an appearance, or appeared to take any part in the Conference, particularly as they are chiefly concerned in this very important matter. There are a number of large private establishments about the country managed by experienced gardeners, where the finest Grapes, Peaches, Nectarines, and hardy fruits of the best and improved varieties are grown, and in order to help defray the garden expenses, the surplus is sold to supply the best shops. We cannot look to these to supply our markets in sufficient quantities for the million, but must depend upon the market gardeners; therefore it is all-important to get at these gentlemen. I feel sure that had more market gardeners attended we should have heard from them many useful suggestions, and much information as to the effect of soil upon the different sorts of Apples and Pears grown for market in different parts of the country. Mr. Clark, a retired market gardener of Twickenham, however, attended, and entered into the discussion. He gave some useful information upon the destruction of the Apple and Gooseberry caterpillar, and mentioned two market Apples (Mank's Codlin and Early Julien) he used to grow in his neighbourhood with great success. He said "Mank's Codlin brought him more money from the market than any other sort," and strongly recommended it to be largely planted, observing also that Cellini Pippin Apple was planted in the same ground, but failed through canker. This points to the necessity of taking into consideration the nature of the soil, shelter, &c., before deciding upon the kinds of fruit to be planted. The soil in the neighbourhood of Kew, Chiswick, Twickenham, and many parts of Isleworth, where Mank's Codlin does so well, is of a light, warm, sandy loam, well suited to many kinds which fail to do well in heavier soils. In heavy soils I have found Mank's do very badly, being sometimes quite a failure. I can point at this moment to 1 acre of this sort in Ealing, planted twenty years ago in good but heavy loam, which has never borne a good crop; the trees are now rotten with canker. What a serious loss! In the same ground there are some Lord Suffield; they are not flourishing, as they would be in warmer soil, but even they have borne fairly well. There are also in the neighbourhood of Ealing Cellini bearing well, which clearly points out how necessary it is for planters to pay more attention to the nature of the soil and to the selection of suitable sorts. I would warn that gentleman who at the Congress asked for information as to what to grow in the heavy soils of Sussex not to take Mr. Clark's hint (grow Mank's), lest he should sustain a loss similar to that my friend at Ealing experienced. I may be told that had the ground upon which this unfortunate acre of Mank's been better drained and received more liberal dressing of manure failure would have been avoided; but you cannot alter the nature of a heavy soil to that of a light one without time and expense. It is all very well in private and small villa gardens, where suitable soil can be supplied or made up, but when the market gardener has to deal with broad acres, with a view to the maximum amount of return for the minimum amount of outlay, he must select the most suitable sorts of Apples and Pears for the natural soils of the place requiring but ordinary treatment in the preparation for planting. Now, had this been observed, and the best hardy strong growing sorts been selected for the orchard in question, such as Keswick Codlin, Ecklinville Seedling, Pott's Seedling, Stirling Castle,

or Blenheim Orange, instead of Mank's, success would have been certain, instead of failure and loss. I am writing with no prejudice against planting this excellent free-bearing market sort, but only to point out the source of danger in planting this or any other sort in unsuitable soil. I would conclude by saying, in the words of Mr. Bunyard, that when a good sort is found to be doing well and to suit the market, then go ahead and plant it, like the "one Apple" man at Woking, who grows only one sort Cox's Orange Pippin, finding it does well on the light sandy soil of that place. George Cannon, *Lee's Nursery, Ealing, October 23*.

BORDER CARNATIONS.—Your correspondent "A. D.'s" suggestion (p. 447) as to a Chiswick trial of border Carnations should be heartily entertained by all growers of these valuable and now popular flowers. Certain it is that many fine varieties exist which meantime are only known locally; and some of these, when judged from comparison with popularly known and advertised sorts, vastly superior as truly refined flowers, and at the same time free and vigorous in constitution. The popular Gloire de Nancy, for instance, is lacking in one of the first qualities of a commendable flower—the calyx almost always bursts (at least, with us); but may not other whites exist with all Nancy's glories and none of her defects? And if such is the case, what a wealth of joy and beauty is being hidden and withheld! Another defect in many of our now popular border Carnations is the waste of flowers consequent on cutting a bloom with a stalk long enough to conveniently place in water; the buds are crowded at the top, and cutting one open bloom often means the removal of four or five unexpanded buds. May there not be local varieties—one here and another there—in all the leading counties, which have not these defects? As to the grouping of colours suggested by "A. D.," this should be one of the prime factors in all comparative tests of florists' flowers. We have practised this for years in all our stock plantations of such popular flowers as Carnations, Dahlias, Pansies, Pyrethrums, Phloxes, &c. The results are that all synonymous and inferior forms are at once recognised, and any errors in nomenclature are quickly detected, as when a white form appears in a group of scarlets, and *vice versa*, S. & S., Dundee. [Some Carnation flowers sent with this note, on October 22, were fresh and sweet, and of charming tints, both selfs and others. They did not show at all that they had had to endure on two occasions 8° of frost. Ed.]

REMOVAL OF POTATO HAULM.—I can endorse what your correspondent, Mr. Wall, says at p. 483 respecting the removal of Potato haulm as being a means of preventing the tubers becoming diseased. I had here this season a patch of Myatt's Ashleaf so attacked with disease, and as the haulm was already showing signs of ripeness, I determined to try the experiment. Unlike your correspondent, I had the haulm cut (instead of pulled) close to the ground, cleared away, and burnt, leaving the tubers undisturbed for ten days, so as to allow their skins to set. When lifted there were from 37 bushels only 2 bushels diseased, and not more than half a bushel of tubers have since gone bad. Our other varieties, nine in number, including early and late kinds, were left to take their chance, and in each case numbers were diseased varying from one-quarter to two-thirds of the crop. In my opinion the removal of the haulm, either by pulling or cutting (I would prefer the latter, the tubers being less disturbed) as soon as spots of the disease are detected, would be a safe plan to adopt in all cases where the crops are approaching ripeness. *Tom Stone*.

MALVA MOSCHATA ALBA.—The typical form of *M. moschata* is by no means devoid of merit as a garden plant, and a well-grown plant, covered with bright pink flowers and beautifully dissected leaves, is infinitely preferable to many of the weedy occupants of the herbaceous border. The white form is a dangerous rival to the white flowers of the hardy plant-garden; there is a certain refinement about the exquisite satin-like petals that is very attractive and pleasing. This is a plant that should have a good soil and plenty of room; under these conditions it forms very handsome specimens. The best results are obtained from one year old plants; if left in the borders after the first year they are apt to become too leafy. When grown on rich heavy soil the seedlings should be transplanted before they form their long tap-roots; this tends to produce a floriferous growth and less foliage. On light soils the

seed should be sown where the plants are to remain. Autumn-sown plants make a fine display early the following summer. The photograph sent was taken from an autumn-sown plant this summer, growing in the gardens of Mr. Geo. Clarke, Pinner. *J. W. Odell.*

SCABIOSA SNOWBALL.—When this charming novelty first came under my notice last spring, I was rather doubtful as to its real merit, as it is quite a common occurrence to find white-flowering varieties amongst the mixed German Scabious, of which I grow a large quantity for cutting purposes. Young seedlings planted out in the beginning of May soon formed nice compact bushes about 2 feet high. The large pure white flowers are freely produced in unending succession from the beginning of August until October, and are not unlike a white pompon Dahlia. For cutting purposes the flowers are simply lovely; they not only come in most useful for ordinary flower-glasses, but are as well adapted for making up wreaths, crosses, and other choice designs. I often compared flowers of the new variety with white forms I had in a bed of selected mixed German Scabious, but the Snowball surpassed them by far in form and pureness of colour. I am sure this beautiful hardy annual is quite as deserving of popularity as its predecessors. *C. S.*

SOCIETIES.

HORTICULTURAL AND BOTANICAL OF MANCHESTER.

AN exhibition of fruit, flowers, and vegetables was opened on Friday, Oct. 26, at the Botanical Gardens, Old Trafford, and remained open till Saturday. The range of permanent glass is now extensive, immense additions having been made by retaining portions of the structure provided for the Jubilee Exhibition of 1887. The exhibits were set out partly in the annexe and partly in the Palm-house. Apples and Pears were the main features of the show. It has not been a particularly good season for these fruits, but except a general want of colour there was little to complain of in the quality of the exhibits. The Society's Gold Medal for the best collection of Apples was taken by Mr. J. Watkins, Whittington, Hereford, and the Gold Medal for Pears by Mr. A. J. Thomas, Sittingbourne. A collection of Apples and Pears, sent for exhibition by Messrs. J. Veitch & Sons, Chelsea, secured a First-class Certificate. The Messrs. Dickson (Limited), Chester, and Messrs. J. Cranston & Co., Hereford, also sent collections for exhibition. Next in interest to the Apples and Pears were the Potatos. The collection for which Messrs. Dickson & Robinson, Manchester, were awarded the Society's Gold Medal, included more than 100 varieties, and was in many respects a remarkable exhibit. Messrs. Dickson & Robinson also received a certificate for Onions. Another fine collection of Potatos, also comprising over a hundred varieties, was shown by Messrs. Dickson, Brown & Tait, Manchester, to whom was awarded a First-class Certificate. Messrs. Sutton & Sons, Reading, were also exhibitors in this section. A certificate for seedling Tomatos was taken by Messrs. Dickson, Brown & Tait.

The exhibits of flowers were not numerous. Except a few Cyclamens and Heaths, this department was represented solely by a collection of Gladioli, Roses, Dahlias, Chrysanthemums, and other hardy flowers, grown in the open air at Llandudno by Mr. S. Barlow. The collection spoke volumes for the climate of the popular watering-place. The following is a list of the awards:—

Nurserymen.—Collection of Apples.—1st (the Society's Gold Medal), Mr. J. Watkins, Hereford; 2nd (the Society's Silver Medal), Messrs. John Cheal & Sons, Crawley, Sussex; 3rd (the Society's Silver Medal), Messrs. J. Cranston & Co., Hereford.

Collection of Pears.—1st (the Society's Gold Medal), Mr. A. J. Thomas, Rodmersham, Sittingbourne; 2nd (the Society's Silver Medal), Messrs. J. Cheal & Sons.

Amateurs.—Twenty-four dishes of Apples.—1st, Earl of Harrington, Elvaston Castle Derby.

Twelve dishes of Apples, distinct varieties.—1st, Mr. R. H. C. Neville, Wellingore Hall; 2nd, Earl of Harrington.

Six dishes of dessert Apples.—1st, Earl of Harrington.

Six dishes of culinary Apples.—1st, Mr. R. H. C. Neville.

Twelve dishes of Pears.—1st, Mr. J. Butler, Sittingbourne; 2nd, Earl of Harrington.

Six dishes of Pears.—1st, Mr. J. Butler.

One dish of Apples.—1st, Earl of Harrington.

One dish of Pears.—1st, Mr. J. Butler.

Eighteen dishes of Apples.—1st, Mr. S. Barlow; Middleton; 2nd, Colonel Wingfield, Shrewsbury.

Nine dishes of Apples, distinct varieties.—1st, Mr. J. Such, Mount Pleasant; 2nd, Colonel Wingfield; 3rd, Mr. S. Barlow.

Four dishes of dessert Apples.—1st, Colonel Wingfield; 2nd, Mr. S. Barlow.

Fruits Grown within 20 miles of Manchester.—Twenty-four dishes Apples.—1st, Mr. A. Smith Barry, Marbury Hall; 2nd, Mr. R. P. Gill, Woodheys Hall; 3rd, Mr. S. Lord, Oakleigh.

Twelve dishes Apples, distinct varieties.—1st, Mr. A. Smith Barry; 2nd, Mrs. Grundy, Lymm; 3rd, Mr. S. Lord.

Six dishes Dessert Apples.—1st, Mr. R. P. Gill; 2nd, Mr. S. Lord.

Six dishes Culinary Apples.—1st, Mr. J. Watts, Abney Hall; 2nd, Mr. A. Smith Barry.

Six dishes Pears.—1st, Mr. A. Smith Barry; 2nd, Mr. J. Watts, Cheadle.

One dish Apples.—1st, Mr. R. P. Gill; 2nd, Mr. S. Lord.

One dish Pears.—1st, Mr. S. Lord.

Open Classes.—Collection of Potatos.—1st (the Society's Gold Medal), Messrs. Dickson & Robinson, Manchester.

DEVONSHIRE POMOLOGICAL.

OCTOBER 25 AND 26.—The fourth annual exhibition of Apples and Pears was held in Exeter on the above dates. The Lower Market, Fore Street, as on previous occasions was used for making the display of fruit, the long ranges of stalls being draped and festooned with bunting and evergreens, which so altered the appearance of the market, that those who frequent it daily would not have recognised it; this was the handiwork of a few energetic members of the committee. The Society until this season was without a title, so as their labours in the past had been recognised by patrons from all parts of the county, "The Devonshire Pomological Society" was adopted as a most appropriate name; a name calculated to draw support from the whole of the agricultural and horticultural element in the county. That good work has been done by these exhibitions was proved by the grand display held this past week composed of all the principal varieties, new and old, in cultivation, and which showed that since these exhibitions commenced, exhibitors have taken note of many varieties of superior merit and have added them to their collection, and are now able to compete with those of Kent and other favoured counties.

Sir T. Acland, in declaring the show open, said that he could not claim to be an active promoter of this show, although he was much honoured by the invitation to be its President. In former times he had endeavoured, with the help of his friend Mr. Belfield, to promote a knowledge of fruit growing through the *Journal of the Bath and West of England Society*, a Society which, at its meeting in Exeter in 1889, would gladly help on the good work. He (Sir T. Acland) had rather a preference for the early English title—Apple and Pear show. As to the word pomology, he had searched in vain for its origin in Greek. He could only find *poma*, which means drink; and he feared his temperance friends would not like that for one object, though the making of pure and good cider was not to be despised. He read a passage from Lord Carnarvon's pleasing translation of the *Odyssey*, book vii.:—

"Hard by the gates, without the courtyard, lies A goodly orchard, some four acres wide, Fenced in on either hand: within its pale The tall trees stand and blossom: thus the Pear, The bright hued Apple, and Pomegranate grow. The blooming Olive and the luscious Fig, Whose fruit, the livelong year, nor falls nor fades In winter's cold or summer heat; but age. The soft west wind ripens or brings to birth Each in due season. Pear to Pear succeeds, And Fig and Apple, and the clustering Grape Their harvest yield."

This showed that the poet who wrote or rather sang 1000 years before the Christian era was not ignorant of Apples and Pears. From Greek he

turned to Latin, and then referred to an article on Pomona in the *Edinburgh Review*, 1833, to which his attention had been directed by Mr. Josiah Godwin, a man with a cultivated mind, formerly a leading man in the Exeter press. Pomona was a coy goddess difficult to win. She was courted by Vertumnus, a versatile deity. An old classical authority said that he won his suit by appearing in the guise of an old woman. This might represent the old traditions of Exeter city, *semper fidelis*; but it did not represent the energy of the mayor, who, when Art, or Commerce, or Literature wanted his help was ever ready. A more recent classical authority said that Vertumnus won his suit as a handsome young man. Anyhow, they were much indebted to the Mayor for the present most useful and beautiful exhibition. Sir Stafford and Lady Northcote were present, whose hereditary interest in the trade of England and the welfare of her colonies were well known. To come to a more practical view of the exhibition, there could be no doubt that there was much need for encouraging the growth of fruit on small holdings as well as on farms. He had noticed in the *Gardeners' Chronicle* some speeches laying blame on the landlords for not encouraging fruit growing. To this even this exhibition might afford an answer. But he (Sir T.), was used to being told that all the evils of Society were caused by the wicked landlords. He thought the statements he referred to were somewhat exaggerated. However, there might be need for some alteration in the law as to compensation for the planting of fruit trees. His own gardener, Mr. Garland, had been doing a good deal to introduce better sorts of fruit for sale; he believed that his tenants and neighbours were becoming every year alive to the profit to be derived from this source. If he might venture to urge what he had been told by practical judges, it were better not to think too much about multiplying new sorts, but to find out the few which are most marketable, and to bring them forward, in the best condition, at the season when they were most marketable.

The display of fruit, good for the season, was not so large as usual, neither were size and quality so conspicuous as in former years; colour, more especially was absent to a very great extent, and this is due in a great measure to the sunless and rainless season, for at no time during the whole of last winter, spring, or summer did rain fall in sufficient quantity to reach the roots of the trees. Many varieties did not commence their last swelling until the middle of October. Mr. J. J. Pengelly, the Secretary, worked most indefatigably in carrying out the details and arrangements for the show.

Mr. W. Blackmore, Duryard, Exeter, exhibited a seedling Apple, which was submitted to the judges, who thought so highly of it that a Certificate was given, and named Queen of the Exe. The parents are Cox's Orange Pippin and Blenheim Orange; the fruit is characteristic of each, and said to be an excellent keeper, and of very good flavour.

A large assortment of foreign fruit, comprising magnificent Doyenné du Comice, Glou Morceau, Belle de Gany Pears, and Warner's King Apples, was exhibited by Mr. J. Stokes.

APPLES.

Open Classes.—Twenty-four dishes, distinct varieties.—1st, Messrs. Bunyard & Co., The Old Nurseries, Maidstone, with capital fruits of the following kinds:—Lord Derby, Kentish Filbasket, Belle Dubois, Gospatrick, Tippet's Incomparable, Loddington, very fine; Emperor Alexander, especially large; Queen, Cellini, Pott's Seedling, Queen Caroline, Cox's Pomona, Peasgood's Nonsuch, Ecklinville, Stirling Castle, Warner's King, Grenadier, Lord Suffield, Beauty of Kent, Small's Admirable, New Hawthornden, Tyler's Kernel, Tower of Glamis, and Bismarck, fine colour. 2nd, Mr. C. G. Slater, Heavitree Nurseries, who had especially fine Peasgood's Nonsuch, Warner's King, Loddington, Lady Henniker, and Lane's Prince Albert.

Twelve dishes dessert, distinct.—1st, Mr. Slater, who had clean and nicely coloured fruit, including Worcester Pearmain, Blenheim Orange, King of the Pippins, Braddick's Nonpareil, Beauty of Wilts, Cox's Orange Pippin, Autumn Pearmain, Ribston Pippin, Cornish Gilliflower, Court Pendu-Plat, and Gravenstein. 2nd, Mr. D. C. Powell, whose best were Worcester Pearmain, Baumann's Red Reinette, Gravenstein, and Claygate Pearmain.

Twelve dishes culinary, distinct.—1st, Mr. D. C. Powell, with a fine clean lot of fruit. His collection comprised Blenheim Orange, Mère de Ménéage, Alfriston, Small's Admirable, Peasgood's Nonsuch, Loddington, Gravenstein, Ecklinville, Warner's

King, Lord Derby, Golden Noble, and Brabant Bellefleur. 2nd, Messrs. Bunyard & Co.

Twelve dishes cider Apples, distinct.—This class was very interesting to the farming community, as several were of those varieties from which the best cider is made in the county; 1st.—Mr. W. Gibbings, Topsham; 2nd, Mr. W. Slater; 3rd, Mr. P. Slade.

Amateur Classes.—Twelve dishes of Apples, distinct.—1st, Mr. R. Yeo, gr. to R. B. James, Esq.; 2nd, Mr. Garland, gr. to Sir T. C. Acland.

Nine dishes, dessert, distinct.—1st, Mr. A. C. Williams, with nice fruit, the best being Gravenstein, Blenheim Orange, Ribston, Cornish Gilliflower, King of Pippins, Cox's Orange Pippin, Quarrenden, Margil, and Court Pendu-Plat.

Nine dishes, culinary, distinct.—Mr. R. Yeo was again 1st with good fruit of the following:—Pott's Seedling, Winter Hawthornden, Lord Suffield, Royal Pearman, New Hawthornden, Ecklinville, and Cellini.

Nine dishes, distinct.—1st, Mr. E. Prothero, who had very good fruit of Warner's King, Peasgood's, and Emperor Alexander.

One dish of Apples grown by Devonshire cottagers.—1st, Mr. C. Scadding, with Lord Suffield; 2nd, Mr. J. Hitchcock, with Warner's King; 3rd, J. Potter, with Warner's King.

Heaviest five of any one variety.—The dishes exhibited were not remarkable for their size this season, but were fairly good fruit. 1st, Mr. W. Blackmore, with Warner's King; 2nd, Messrs. Bunyard & Co., with Warner's King; 3rd, Mr. G. H. Mounsdon, gr. to F. Bradshaw, Esq., for Bedfordshire Foundling.

The exhibitors who took prizes in the smaller classes were chiefly those who won honours in the more important competitions.

PEARS.

Among Pears some exhibitors staged excellent fruit, but on the whole there was a falling off, as in the Apple classes, and from the same causes.

Twelve dishes of Pears, distinct.—1st, Messrs. Bunyard & Co., whose collection included General Todleben, Catillac, Calabasse Grosse, Beurré Clairgeau, B. Rance, B. Superfin, B. Hardy, Pitmaston Duchess, Doyenné du Comice, Durondeau, Conseiller de la Cour, and Louise Bonne of Jersey.

Six dishes, distinct.—1st, Mr. Powell, all dessert varieties, including Pitmaston Duchess, Marie Louise, Beurré Superfin, Louise Bonne of Jersey, Muirfowl's Egg, and Beurré Clairgeau.

Three dishes, distinct.—1st, Mr. Powell, with Pitmaston Duchess, Beurré Superfin, and Muirfowl's Egg. 2nd, Mr. Garland, who had Pitmaston Duchess, very fine.

NON-COMPETING FRUIT.

Messrs. R. T. Veitch & Son staged a hundred dishes of Apples, including all the best varieties in cultivation, and forty dishes of Pears. The collection of Apples included Bramley's Seedling, which received a Certificate of Merit at the late Chiswick Apple Congress, and fine fruits of other leading varieties. Pears: Glou Morceau (Certificate of Merit, Chiswick), Beurré Bachelier, Louise Bonne of Jersey, Beurré Rance, Muirfowl's Egg, Beurré Diel, Marie Louise, Flemish Beauty. The same firm kindly lent a splendid lot of Palms, Japanese Maples, Bonvardias, &c., for the decoration of the tables.

Messrs. Lucombe, Pince & Co. staged fifty dishes of Apples and eighteen dishes of Pears, including many of the best varieties. Mr. C. G. Slater put up fifty varieties of very fine fruit of Apples and baskets of various kinds of fruit, as usually sold in the markets, making a very pretty stand indeed, all well coloured fruit. Mr. D. C. Powell staged fifty varieties of Apples and eighteen varieties of Pears. Mr. Randall, Exebridge, had thirty varieties Apples and six of Pears, very nice fruit; with a variety of dinner-table plants. Messrs. Jarman & Co., Chard, put up forty-four varieties of Apples, capital fruit, and twenty-one varieties of Pears.

THE WEATHER.

MEAN TEMPERATURE OBSERVED AT CHISWICK DURING THE WEEK ENDING NOV. 10. (AVERAGE OF FORTY-FOUR YEARS.)

Nov. 4	45°·1	Nov. 8	43°·8
" 5	44°·8	" 9	43°·5
" 6	44°·8	" 10	43°·8
" 7	44°·1	Mean for the week ...	44°·2

[Accumulated temperature indicates the combined amount and duration of the excess or defect of temperature above or below 32° F. for the period named, and is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	Above or below the Mean for the week ending Oct. 29.	TEMPERATURE.			
		ACCUMULATED.			
		Above 42° for the Week.	Below 42° for the Week.	Above 42° difference from Mean since Jan. 3, 1888.	Below 42° difference from Mean since Jan. 3, 1888.
Principal Wheat-producing Districts.		Day-deg.	Day-deg.	Day-deg.	Day-deg.
0. SCOTLAND, N. ...	7 above	74	0	-247	+215
1. SCOTLAND, E. ...	10 above	67	0	-449	+155
2. ENGLAND, N.E. ...	7 above	76	0	-518	+89
3. ENGLAND, E. ...	4 above	67	0	-399	+205
4. MIDLAND COS. ...	5 above	67	0	-487	+201
5. ENGLAND, S. ...	5 above	78	0	-493	+233
Principal Grazing, &c., Districts.					
6. SCOTLAND, W. ...	7 above	74	0	-368	+102
7. ENGLAND, N.W. ...	5 above	73	0	-399	+124
8. ENGLAND, S.W. ...	5 above	83	0	-497	+268
9. IRELAND, N. ...	7 above	78	0	-281	+61
10. IRELAND, S. ...	7 above	83	0	-282	+119
— CHANNEL ISLANDS	4 above	97	0	-370	+154

DISTRICTS.	More or less than the Mean for the Week.	RAINFALL.		BRIGHT SUNSHINE.	
		No. of Rainy Days since Jan. 3, 1888.	Total Fall since Jan. 3, 1888.	Percentage of possible Duration for the Week.	Percentage of possible Duration since Jan. 3, 1888.
		Teaths of Inch.	Ins.		
Principal Wheat-producing Districts.					
0. SCOTLAND, N. ...	9 more	196	33.4	3	28
1. SCOTLAND, E. ...	2 more	165	23.1	21	30
2. ENGLAND, N.E. ...	5 less	151	20.9	13	26
3. ENGLAND, E. ...	2 less	55	20.2	22	30
4. MIDLAND COS. ...	4 less	138	19.2	19	28
5. ENGLAND, S. ...	3 more	144	21.6	23	30
Principal Grazing, &c., Districts.					
6. SCOTLAND, W. ...	2 more	156	32.7	7	31
7. ENGLAND, N.W. ...	2 more	157	23.1	7	20
8. ENGLAND, S.W. ...	1 more	163	26.9	12	35
9. IRELAND, N. ...	1 less	167	28.5	10	28
10. IRELAND, S. ...	7 more	149	28.6	10	33
— CHANNEL ISLANDS	3 less	177	23.7	47	41

THE PAST WEEK.

The following summary record of the weather for the week ending Oct. 29, is furnished from the Meteorological Office:—

"The weather was fair and dry at the commencement of the period, but in the north and west the conditions soon became unsettled and rainy. In the south and south-east, however, fair weather continued until towards the end of the week, when the sky became overcast, and considerable quantities of rain fell.

"The temperature has been much above the mean in all districts. Over 'England, E.' and the 'Channel Islands' the excess has been 4°, in most of the other English districts 5°, in Ireland, the greater part of Scotland, and in 'England, N.E.' 7°, and in 'Scotland, E.' as much as 10°. The highest of the maxima were registered on the 27th, when the thermometer rose to an unusually high level for the time of year. In 'England, S.' (in London) the maximum was as high as 70°, and in the 'Midland Counties' and 'England, E.' 69°, while in most other parts of the kingdom readings between 64° and 67° were

recorded. The minima were again low over England until the 25th, the sheltered thermometer falling to between 24° and 30°. During the early morning of the 23rd the gross minimum at Ingatestone was as low as 17°. The temperature subsequently rose with great rapidity, and the minimum readings were very high for the time of year. At Shields, York, and Loughborough the thermometer during the night of the 27th and 28th did not fall below 60°.

"The rainfall has been less than the mean in 'Ireland, N.' and the 'Channel Islands,' and over eastern, central, and north-eastern England, but more elsewhere, especially in the extreme west and north.

"Bright sunshine was very little prevalent except at a few of our extreme southern stations. The percentage of the possible amount of duration ranged from 47 in the 'Channel Islands' to 23 in 'Ireland, S.' and to 22 in 'England, E.' In Ireland, the north-west of England, and the north and west of Scotland the amount was extremely slight, the percentage of the possible number of hours ranging between three and ten."

MARKETS.

COVENT GARDEN, November 1.

[We cannot accept any editorial responsibility for the subjoined reports, which, however, are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list, and who are responsible for the quotations. It must be remembered that these quotations represent averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the supply in the market, and they fluctuate, not only from day to day, but often several times in one day, and therefore the prices quoted as averages for the past week must not be taken as indicating the particular prices at any particular date, and still less can they be taken as guides to the prices in the coming week. ED.]

BUSINESS quiet; supplies more than equal to the demand. Large consignments of Nova Scotia and Canada Apples to hand; quality better. Kent Cobs short. Prices steadily rising. *James Webber, Wholesale Apple Market.*

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Apples, half-sieve ...	2 0-4 6	Melons, each ...	1 0-3 0
— Canada and Nova		Peaches, dozen ...	2 0-6 0
Scotia, per barrel 10 0 14 0		Pine-apples, Eng., lb. 1 6 2 0	
Cobs, 100 lb. ...	100 0 5	Plums, half-sieve ...	2 6-4 6
Grapes, per lb. ...	0 6 2 6	— St. Michael, each 2 0-8 0	
Lemons, per case ...	12 0-21 0		

VEGETABLES.—AVERAGE RETAIL PRICES.

	s. d. s. d.		s. d. s. d.
Artichokes, p. doz. ...	4 0-...	Mustard and Cress, punnet ...	0 4-...
Beet, red, per dozen 1 0-2 0		Onions, per bunch ...	0 5-...
Carrots, per bunch ...	0 6-...	Parsley, per bunch ...	0 4-...
Cauliflowers, each ...	0 3-...	Potatoes, per cwt. ...	4 0-5 0
Celery, per bundle ...	1 6-2 0	— kidney, per cwt. 4 0-5 0	
Cucumbers, each ...	0 9-...	Shallots, per lb. ...	0 6-...
Endive, per dozen ...	3 0-...	Spinach, per bushel ...	2 6-...
Green Mint, bunch ...	0 6-...	Tomatoes, per lb. ...	1 0-...
Herbs, per bunch ...	0 6-...	Turnips, per bunch, new ...	0 5-...
Leeks, per bunch ...	0 4-...		
Lettuce, per dozen ...	2 0-...		
Mushrooms, punnet 2 6-...			

POTATOS.—Myatt's finished. Beauty of Hebron, 60s. to 81s.; Regents, 90s.; and Magnums, 65s. to 80s. per ton. Trade much worse.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Aralia Sieboldi, doz. ...	6 0-18 0	Ferns, in var., doz. 4 0-18 0	
Asters, per dozen ...	6 0-9 0	Foliage plants, various, each ...	2 0-10 0
Chrysanthemums, doz. 4 0-9 0		— Ficus elastica, each 1 6-7 0	
— large plants, each 2 0-4 0		Fuchsias, doz. ...	3 0-6 0
Cockscombs, per doz. 3 0-6 0		Heliotropes, dozen ...	3 0-6 0
Coleus, doz. ...	2 0-4 0	Hydrangeas, dozen ...	9 0-18 0
Cyperus, per dozen ...	4 0-12 0	Liliums, var., doz. ...	18 0-30 0
Dracena terminalis, per dozen ...	30 0-60 0	Marguerites, doz. ...	6 0-12 0
— viridis, per doz. 12 0-24 0		Mignonette, 12 pots 3 0-6 0	
Ericas in var., doz. ...	9 0-18 0	Palms in var., each 2 6-21 0	
Eucalyptus, in var., per dozen ...	6 0-18 0	Parganum, scarlet, per dozen ...	2 0-6 0
Evergreens, in var., per dozen ...	6 0-24 0	Primulas, per dozen 4 0-6 0	
		Solanums, dozen ...	9 0-15 0

OUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Abutilons, 12 bun. ...	3 0-6 0	Marguerites, 12 bun. 3 0-6 0	
— French, per bun. 1 6-2 6		Mignonette, 12 bun. 2 0-4 0	
Bouvardias, per bun. 0 6-1 0		Parganum, 12 spr. 1 0-1 6	
Camellias, 12 blms. 3 0-4 0		— scarlet, 12 spr. ...	4 0-8 0
Caranths, 12 blms. 2 0-3 0		Primulas, double, 12 sprays ...	1 0-1 6
Chrysanthemums, 12 blooms ...	0 6-3 0	Pyrethrums, 12 bun. 2 0-4 0	
— dozen bunches ...	9 0-18 0	Roses, Tea, per doz. 1 0-3 0	
Eucharis, per dozen 4 0-8 0		— coloured, dozen. 2 0-4 0	
Gardenias, 12 blooms 3 0-6 0		— red, per dozen ...	0 6-1 0
Glaudiolus, doz. sprays 1 6-3 0		— Safrano, dozen ...	1 0-2 0
Heliotropes, 12 spr. 0 6-1 0		Stephanotis, 12 spr. 4 0-6 0	
Lilium longiflorum, 12 blooms ...	4 0-6 0	Theroseas, 12 blms. ...	0 6-1 0
— lanceolatum, 12 bl. 1 0-3 0		Violets, 12 bunches ...	1 0-2 0
Lapageria, 12 blooms 1 0-2 0		— dark, Fr., bunch 1 6-2 0	
		— Parma, Fr., bun. 3 0-4 0	

SEEDS.

LONDON: Oct. 31.—Messrs. John Shaw & Sons, seed merchants, of 37, Mark Lane, E.C., write that the market for Clover seeds has this week assumed a somewhat quieter appearance. Mail advices just received speak badly of the American crop of red; France will, however, have some good seed to spare. Alsike, white, and Trefoil all keep steady. In Winter Tares the tendency is still downward, and the supply now exceeds the demand. Rye is also cheaper. More money is asked for blue Peas. Haricot Beans are likewise higher. For bird seeds the sale is slow.

CORN.

Averages.—Official statement showing the average price of British corn, imperial measure, in the week ended October 27:—Wheat, 32s. 2d.; Barley, 29s. 3d.; Oats, 16s. 5d. For the corresponding week in 1887:—Wheat, 30s. 1d.; Barley, 29s. 7d.; Oats, 15s. 5d.

FRUIT AND VEGETABLES.

SPIALFIELDS: Oct. 31.—Supplies not quite so plentiful owing to inclement weather. Trade moderately active at prices as under:—Fruit: Damsons, 3s. to 3s. 6d. per half-sieve; English Plums, 2s. 6d. to 3s. do.; Pears, 3s. to 4s. 6d. per bushel; Apples, 3s. to 6s. do.; 1s. 9d. to 2s. 9d. per half-bushel; English Tomatoes, 3s. 6d. to 5s. per peck. Vegetables: Savoy, 3s. 6d. to 5s. 6d. per tally; Cabbages, 1s. 9d. to 2s. 9d. do.; Cauliflowers, 3s. to 5s. 6d. do.; Brussels Sprouts, 2s. to 2s. 6d. per half-sieve; Greens, 1s. 6d. to 2s. 6d. per dozen bunches; Turnips, 1s. 9d. to 2s. 3d. do.; Carrots, 1s. 6d. to 2s. do.; Onions, 1s. 9d. to 2s. 3d. do.; Beetroots, 2s. to 2s. 6d. do.; Mint, 1s. to 1s. 6d. do.; Parsley, 1s. to 1s. 6d. do.; Celery, 4s. to 9s. per dozen bundles; Horseradish, 9d. to 1s. 2d. per bundle; Dutch Onions, 2s. 6d. to 3s. per bag; Belgian Onions, 2s. to 2s. 9d. do.; pickling Onions, 4s. to 4s. 6d. do.; frame Cucumbers, 4s. to 5s. per dozen; Endive, 1s. 3d. to 1s. 9d. do.; Cos Lettuces, 4d. to 8d. per score of 22; Carrots, 24s. to 35s. per ton.

STRATFORD, Oct. 30.—Both trade and supply have been good during the past week. Quotations:—Cabbages, 3s. to 4s. per tally; Turnips, 35s. to 40s. per ton; Carrots, household, 35s. to 40s. do.; Mangels, 15s. to 20s. do.; Swedes, 17s. to 22s. do.; Celery, 10d. to 1s. per roll; Apples, English, 2s. to 7s. per flat; American, 4s. 6d. to 8s. per hamper; Jersey, 3s. 6d. per half barrel; Pears, 2s. 6d. to 5s. per sieve; Carrots, 2s. to 3s. per dozen bunches; Turnips 3s. to 3s. 6d. do.; Walnuts, 5s. to 12s. per bag; do., 13s. to 15s. per sack.

POTATOS.

BOROUGH AND SPIALFIELDS: Oct. 30.—Adequate supplies and quiet trade, with very little variation in prices. Regents, 60s. to 80s.; Hebrons, 60s. to 90s.; Early Roses, 50s. to 80s.; Magnum Bonums, 50s. to 100s. per ton.

SPIALFIELDS: Oct. 31.—Quotations:—Beauty of Hebron, 85s. to 100s.; English Regents, 80s. to 90s.; Champions, 60s. to 65s.; Imperators, 70s. to 85s.; Magnums, 60s. to 80s. per ton.

STRATFORD: Oct. 31.—Quotations:—Best Yorks, 8s. to 90s.; Lincolns, 70s. to 75s.; dark Cambs, 60s. to 62s. 6d. per ton.

Imports.—The imports into London last week consisted of 10 bags from Harlingen, 8 from Ostend, 400 bags 207 cases from Hamburg, 5 bags 3 casks from Bremen, and 109 bags from Amsterdam.

HAY.

Averages.—The following are the averages of the prices obtained at the various metropolitan markets during the past week:—Clover, prime, 90s. to 144s.; inferior, 60s. to 80s.; hay, prime, 90s. to 130s.; inferior, 50s. to 60s.; and straw, 34s. to 48s. per load.

ENQUIRIES.

"He that questioneth much shall learn much."—BACON.

CARICA AURANTIACA.—In the year 1873 this plant was put into commerce by Mr. William Bull, who inserted a figure of it in his Catalogue for that year. Any reader who may have the plant in cultivation will confer a favour on the editor by communicating with him on the subject.

THE BLACK APRICOT (*PRUNUS DASTCARPA*).—Can any correspondent say where this is now cultivated? J. D. H.

VERONICA ERICIFOLIA.—Is there a variety of Veronica with the above name? If so, would you say where it is to be obtained. I cannot find it in any published list. J. C. B., Kelso.

NOTICES TO CORRESPONDENTS.

INTELLIGENT READERS, do PLEASE NOTE that letters relating to ADVERTISEMENTS, or to the supply of the Paper, should be addressed to the PUBLISHER, and that all communications intended for publication, as well as specimens and plants for naming, should be addressed to the EDITOR. Such communications should be written on one side only of the paper, and sent as early in the week as possible. Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

AMPELOPSIS VEITCHII: H. G. G. The plant is notoriously variable; under glass the leaves become as big as soup-plates. Another time send your question to the editor, not to the publisher.

BOOKS: Ilbert. The best for your purpose is Thomson's *Handy Book of the Flower Garden*. (W. Blackwood & Sons, Edinburgh; new and enlarged edition, 5s.).—R. A. Taylor. *Vines and Vine Culture*. By A. E. Barron, Chiswick. *The Garden Calendar*. By T. W. Sanders (Hamilton, Adams, & Co.), is a good general book.

CHRYSANTHEMUMS: X. The flowers are badly affected with a fungus (*Botrytis* or *Polyactis*). Burn the plants. In a dry season perhaps little harm would result, but such a summer as we have lately passed through made things very pleasant for these fungi.

CINDER PATH: J. W. S. The proportion is about a small bucketful of tar to one barrowful of dry coal-ashes, cleaned from the fine particles. The coal-ashes should be screened through a three-quarter-inch mesh, to take out the larger pieces. Cold tar will do. It should be laid on a hard bottom, and the walk should be bordered with roofing tiles or slates.

CORRECTIONS.—In our obituary notice last week of Mrs. Crabbe, we named Canon Meadows as one of her competitors; it should have been "Canon Beadon," who died at the age of 101, being at the time of his death the oldest clergyman.—Mr. Buchan informs us that it was to Mrs. Crabbe we are indebted for the introduction of Allamanda Schottii, from whom the original seed was obtained about forty years ago.

DECAYING FERNS: *Palmata*. Damp and want of air may have something to do with it. Do not sprinkle overhead, but water the pans by sinking them nearly to the brim in water. Apply a little powdered black sulphur and charcoal, and remove to a more airy place.

DENDROBIUM SUPERBIENS: G. W. R. Put the plant in a pot, giving it room. Keep much cooler and more airy than you have it, and give the heat you now give, with plenty of water when growing. If growing now, keep in heat; if not, remove until it starts.

INSECTS: J. Hamilton. The insects are the male and female of the South American grasshopper (*Copiphora cornuta*), very destructive to young shoots and buds. Eggs or the insects have come over with imported plants.—A *Constant Reader*. A larva of *Melolontha vulgaris* (the cockchafer).

MUSCAT OF ALEXANDRIA RIPE BY OCTOBER: Young Gardener. Start the house by shutting it up with sun-heat on April 1; in a fortnight apply a little fire-heat to keep up a night temperature of 45° to 50°, but keep as near as you can to the lesser warmth; the day temperature may be 10° to 15° higher. As the Vines near the blooming stage gradually raise the temperature until, when in flower, the night warmth may reach 65° to 68°. The whole method of growing Grapes cannot be described in a paragraph. You should get Mr. Barron's *Vines and Vine Culture*, price 5s. 3d., post-free, of Mr. Barron, Chiswick.

NAMES OF FRUIT: J. Barnett. 1, Early Nonpareil; 2, Brabant Bellefleur; 3, Warner's King; 5, Old Nonpareil.—J. S. 1, King of the Pippins; 3, Fearn's Pippin; 4, King of the Pippins; 5, Cox's

Orange Pippin; 6, Pear Flemish Beauty; 8, Beurré Sterckmans; 9, Beauty of Kent.—C. Cundy. 1, Pear Dr. Jules Guyot; 2, Apple Golden Reinette; 3, Pigeonette.—C. F. P. 2, Beurré Clairgeau; 3, Beurré Bosc; 4, Beurré d'Amanlis; 5, Beurré Hardy; 6, not known; 7, Marie Louise.—Whitton. Apple Scarlet Nonpareil.—J. E. Nelson. 1, Beurré d'Amanlis; 2, Spice Apple; 3, London Pippin; 4, Hambleton Deux ans; 5, Williams' Bon Chrétien; Plum Jefferson.—B. M. O. Pear Urbaniste.—W. Diddams. Landsberger Reinette.—John Prince. 1, Duchesse d'Angoulême; 2, Braddock's Nonpareil; 3, Brownlee's Russet; 4, Starmer Pippin; 5, Hambleton Deux ans; 6, Dumelow's Seedling.—W. Troughton. 1, Beurré Bosc; 2, Beurré d'Arenberg; 3, Beurré de Capiaumont; 4, Beurré d'Amanlis; 5, Madame Treyve; Apple Queen Caroline.—R. C. R. Pear Louise Bonne of Jersey; Apple next week.

NAMES OF PLANTS: J. Humphrey. 1, 2, and 3, varieties of *Epiphyllum truncatum*; 4, *Cereus Mallisoni*, a hybrid from *C. speciosissimus* and *C. flagelliformis*.—J. H. 5, *Oncidium prætexum*.—G. Martin. 1, imperfect unexpanded buds only sent—you must think we are wizards; 2, *Pleione* (*Cœlogyne*) *lagenaria*; 3, not recognised; 4, *Goodyera* sp.—leaf should have been sent with flower; 5, *Pleione* (*Cœlogyne*) *Wallichiana*.—G. N. *Hibiscus* sp., which we will endeavour to give you a name for next week.—F. G. 1, *Thuja occidentalis* var.; 7, *Retinospora obtusa*; 8, *Cupressus Lawsoniana*; 9, *Juniperus* sp.; 11, 12, forms of *Thuja occidentalis*; 13, *Biota orientalis*. We give the specific names, but to ascertain the variety you should apply to some nursery where they are grown.—Vesta. Probably the Sheep's Fescue, *Festuca ovina*.—F. T. Clarkia pulchella.—B. R. O. 1, Aster, specimen insufficient; 2, *Solidago nemoralis*.—W. S. C. P. 1, *Carduus defloratus*.—S. F. S. *Mesembryanthemum blandum*. Treat in the same way as for the other species of the genus; it needs no special culture.—H. J. C. 1, *Statice*, specimen insufficient; 2, *Balota acetabulosa*; 3, *Verbascum*, perhaps *V. sinaiticum*; specimen insufficient; 4, *Blepharis edulis*; 5, *Centaurea hyalolepis*; 6 we do not recognise from the scrap sent. Probably from the locality you name.—G. M. All varieties are forms of *Pleione* (*Cœlogyne*) *Wallichiana*.—Old Su'scriber. 1, *Adiantum Capillus-veneris*; 2, *A. macrophyllum*; 3, *Pteris cretica*.—A. Paterson. *Oncidium trulliferum*; *Dendrobium longicornu*; *Zygopetalum Mackayi* (small variety); *Rodriguesia planifolia*. Thanks for the monstrous bloom: it is *O. Forbesii*, not *O. crispum*.—Colonel Cooper. 2, *Cattleya bicolor*.

PEARS: G. Benington. Pitmaston Duchess is fine in appearance, and does best on the Pear stock. It should be grown on an east or west wall, or as an espalier, if the district be a warm one. Owing to its size, it is apt to get blown off free standing trees. The flavour is not first-rate, but it is a showy fruit, and looks well at table. Doyenné de Boussoch is a good-looking fruit, and does well on the Quince as a bush—not a pyramid—the habit being too diffuse. As regards flavour it is fairly good, but there are better ones. In cold soils it requires a wall to mature it properly. Coming in at the same time (October), *Conseiller de la Cour* and *Marie Louise* are better. The former on the Quince is very good. Glou Morceau is a very variable variety. The fruit is finest in deep, well-drained soils; in shallow and cold ones it comes malformed, cracks, and is often very gritty at the core, and is then best grown on a wall as an oblique cordon on the Quince, or as a fan or horizontal-trained tree on the Pear stock. The roots in cold soils must be kept near the surface by top-dressing with decayed manure, and being lifted at intervals of five or six years. The season has been very unfavourable for most varieties of Pears in any but the finest soils and situations.

PINE-APPLE: M. F. G. The accounts of Pine-apple culture by the old fathers of the craft are scattered through the garden literature of the past fifty or sixty years, and we may only indicate a few names of gardeners and the weights of the fruits shown by them. Mr. Hatch, an Enville, 7 lb. 8 oz., shown at the Royal Horticultural Society, November 3, 1841. Sir H. S. Clarke's gardener, showed the same variety the following year; it weighed 7 lb. 7 oz. Mr. Lumsden, the same year, showed Black Antigua, of 5 lb. 4 oz.; Mr. Foster, a Montserrat of 6 lb. 6 oz.; and Mr. Linwood, Green

Antigua, of 5 lb. 12 oz. In 1843, Mr. Murray showed a Queen, of 6 lb. 4 oz.; and the next year Mr. Mills showed a Providence, 14 lb. 4 oz. In 1845, the heaviest Queen of that year, a fruit of 6 lb. 11 oz., was shown by Mr. Hewitt; Mr. Barnes, of Bicton, showed two Queens in 1846, weighing 7 lb. 4 oz. and 7 lb. 2 oz. respectively; and M. Pelvillain, Meudon, one of 8 lb. Mr. Fleming, of Trentham, showed several Ripley Queens in 1849, of 7 lb. 7 lb., and 7 lb., 10 oz. In 1873 Mr. Sandford showed a Queen weighing 8 lb. 4 oz.; and in 1878, Mr. Miles, a new Pine-apple, Lord Carrington, weighing 7 lb. On September 25, this year, Mr. Richards, gardener, Somersley, showed at the Drill Hall, James Street, a Queen of 7 lb. 6 oz. in weight. Fish, Ingram, Ayres, Frost, Bailey, McEwen, Miller, Spencer, and Dods, were great men in Pine growing, and showed continually very large fruits.

PURPLE BEECH FROM SEED: *Young Nurseryman.* The seeds are sometimes employed—a certain proportion nearly always coming true.

VINES: *Foreman.* We do not see any Phylloxera, but some of the roots are in a bad state. Send some further specimens later on.

YEW TREE: *Hatter.* We cannot advise you. If the tree belongs to your neighbour, why not confer with him as to its removal in a legitimate way?

CATALOGUES RECEIVED.

M. V. LENOIRE, Rue du Montet, 134, Nancy, Meurthe et Moselle—Extracts from Price List, and Supplement to List of Novelties.

MESSRS. J. C. WHEELER & SONS, Kingsholm, Gloucester—Fruit and Forest Trees, Roses, Flower Roots, &c.

MARTIN GRASHOFF, Quedlinburg, Germany—Phloxes.

JAMES COCKER & SONS, Aberdeen—Perennials, Alpines, Bulbs, &c.; also Roses.

W. P. LAIRD & SINCLAIR, Dundee—Roses, also Forest Trees, Ornamental Trees, &c.

W. H. HUDSON, West Green Road, Tottenham, London—Dutch Bulbs.

GARLIES MITCHELL, Stranraer—Forest and Ornamental Trees.

GEO. COOLING & SONS, Bath—Roses, Fruit Trees, &c. DICKSONS (Limited), Chester—Roses, also Hardy Border Plants, &c.

W. DRUMMOND & SONS, Stirling and Dublin—Forest, Ornamental and Fruit Trees, &c.

STORRIE & STORRIE, Clarendon Park Nurseries, Perth Road, Dundee—Florists' Flowers.

LOUIS LEROY, Angers, France—Wholesale List of Roses, Fruit Trees, Conifers, Azaleas, &c.

R. J. LOOYMANS & SONS, Oudenbosch, Holland—Ornamental and Forest Trees, Conifers, &c.

WILLIAMS BROTHERS, Wilhelmshue, Heneratgoda, Ceylon—Seeds of Tropical Plants.

J. GALVIN, Mount Talbot Nurseries, Roscommon—Forest Trees, Roses, &c.

THOS. CRIPPS & SON, Tunbridge Wells, Kent—Nursery Stock (Wholesale).

F. REIMER, Quedlinburg—Novelties in Mimulus, Phlox Drummondii, and Viola.

V. DÖPPLEB, Erfurt—Own Novelties for 1888—9.

F. BURVENICH (PÈRE), Ghentbrugge, Belgium—Vegetable Seeds, Trees, Shrubs, and other Outdoor Plants.

ANTHONY WATERER, Knap Hill Nursery, Woking—Rhododendrons, Conifers, Roses, &c.

EDWARD STANFORD, 26 and 27, Cockspur Street, Charing Cross—Books, Maps, &c.

COMMUNICATIONS RECEIVED.—A. O. W. (next week).—E. M. H.—D. M.—Dr. B., Lyons.—C. N., Antibes.—L. W. G. (crammed).—J. T. B.—T. R. A. B.—Dr. Costerus, Amsterdam.—W. B.—Sir T. A.—Count Solms, Strasburg.—E. & Co.—Dr. U. D. Berlin.—W. R. McN.—G. R. D.—C. G. C.—W. S.—C. S. S. Brookline, Mass.—H. C. Geneva.—G. T. M.—Beckenham post mark, Couliers (no letter).—H. C. (with Willow foliage: next week).—E. J. L.—Ed. W. & Sons.—A. Outram (thanks): will have it engraved).—P. D. W. (no Grapes to hand).—G. M. (if you will send the photograph we can then decide).—G. B.—W. R.—S. J. S.—J. J. W.—T. L.—A. J. T.—W. H.—G. H.—Sir J. B. Lawes.—H. Corroven.—R. A. R.—C. T. & S.—H. W. W.—J. D.—M. T.—W. E.—G. H. R.—Hexham.—J. H. S.—W. & J. B.—Fruit from Wootton (no letter).—C. W. D.—Notts.—R. A. R.—R. W. A.—B. C. T.—J. C.

Correspondents sending plants or fruits to be named, or asking questions demanding time and research for their solution, must not expect to obtain an answer to their enquiries in the current week.

DIED.—On October 31, at his residence, Renton House, Brixton Road, HENRY LEE, F.L.S., F.G.S., F.Z.S., &c., aged sixty-two.

Palms, Foliage Plants, Heath, &c.
FRANCIS R. KINGHORN will be pleased to forward LIST of above with low prices. Leading decorative PALMS in all sizes, great quantities, and in finest health.
Richmond, Surrey; and 191 and 192, Flower Market, Covent Garden, W.C.

SPECIAL OFFER.—500,000 LARCH FIR, 1½ to 2 feet, and 15 to 18 inches; SCOTCH FIR, 1½ to 2 feet, and 15 to 18 inches; THORN QUICK, 4 and 5 inches, fine; Common and Portugal LAURELS, and other General Nursery Stock. For particulars and price apply to ISAAC MATTHEWS AND SON, Milton, Stoke-on-Trent.

GARDEN REQUISITES.

COCOA-NUT FIBRE REFUSE.
4d. per bushel; 100 for 25s.; truck (loose, about 2 tons), 40s.; 4-bushel bags, 4d. each.
LIGHT BROWN FIBROUS PEAT, 5s. 6d. per sack; 5 sacks, 25s.; sacks, 4d. each.
BLACK FIBROUS PEAT, 5s. per sack, 5 sacks, 22s.; sacks, 4d. each.
COARSE SILVER SAND, 1s. 9d. per bushel; 15s. per half ton; 28s. per ton, in 2-bushel bags, 4d. each.
YELLOW FIBROUS LOAM, PEAT-MOULD, and LEAF-MOULD, 1s. per bushel.
SPHAGNUM MOSS, 8s. 6d. per sack.
MANURES, GARDEN STICKS, VIRGIN CORK, TOBACCO CLOTH, RUSSIA MATS, &c. Write for Price LIST.—**H. G. SMYTH, F.R.H.S.**, 21, Goldsmith's Street, Drury Lane (lately called 17A, Coal Yard), W.C.

GARDEN REQUISITES,

of best quality, as supplied to the Royal Gardens, &c.
BEST COCOA-NUT FIBRE REFUSE, 10 sacks for 10s., 15 for 14s., 20 for 18s., 30 for 25s.; two-ton truck, 28s. Free on rail.
RUSSIA MATS, from 12s. to 18s. per dozen.
FINEST ORCHID PEAT, 7s. per sack.
BEST BROWN FIBROUS PEAT, 5s. per sack, 5 for 22s. 6d.
BEST BLACK FIBROUS PEAT, 4s. 6d. per sack, 5 for 20s.
COARSE SILVER SAND, 1s. 6d. per bushel; 14s. ½-ton; 25s. per ton.
PURE LEAF MOULD, 3s. per sack.
YELLOW FIBROUS LOAM, 3s. per sack.
BEST MUSHROOM SPAWN, 4s. per bushel.
RAFFIA, LABELS, STICKS, from 1 ft. to 5 ft., BAMBOO CANES, 3½ ft. to 12 ft., VIRGIN CORK, CHEMICAL MANURES, NETTING, &c.
SPHAGNUM MOSS, 6s. per sack. CHARCOAL, 8s. per sack.
SPECIALITÉ TOBACCO PAPER and CLOTH, 10d. per lb.; 28 lb. for 21s. Price List free by post.
W. HERBERT AND CO., Hop Exchange Warehouses, Southwark Street, London, S.E.

PEAT FOR ORCHIDS,

CHOICE PLANTS, FERNS, HEATHS, AZALEAS, &c.
EPPS & CO. are now prepared to offer PEAT, as above, of first-class quality, at lowest prices. Send for Samples, Price List and Testimonials. Depot for HORTICULTURAL SUNDRIES, LOAM, SAND, LEAF-MOULD, SPHAGNUM, COCOA-NUT FIBRE REFUSE.

PEAT MOSS LITTER.

EPPS & CO., Ringwood, Hants.

GARDEN REQUISITES.

TWO PRIZE MEDALS.
Quality. THE BEST in the Market. (All sacks included.)
PEAT, best brown fibrous ... 5s. per sack, 5 sacks for 22s. 6d.
PEAT, best black fibrous ... 4s. 6d. " 5 sacks for 20s.
PEAT, extra selected Orchard ... 7s. 6d. " 5 sacks for 35s.
LOAM, PREPARED COMPOST ... 15s. per bush., 3s. per sack.
LEAF MOULD ... 1s. per bush., 14s. half-ton, 24s. ton.
SILVER SAND, coarse, 1s. 6d. per bush., 14s. half-ton, 24s. ton.
RAFFIA FIBRE, best only ... 1s. per lb.
TOBACCO CLOTH, or PAPER ... 1s. lb.; 25 lb., 27s.
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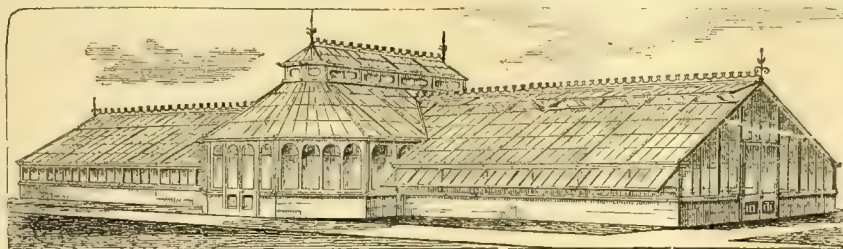
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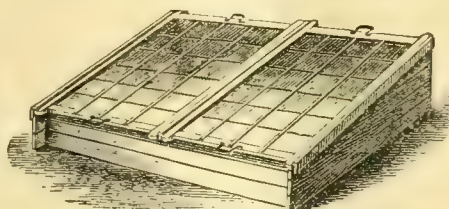
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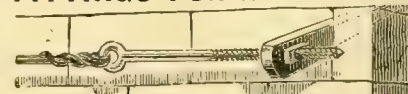
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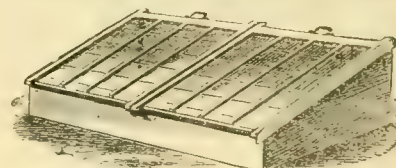
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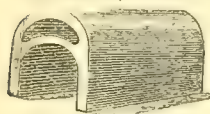
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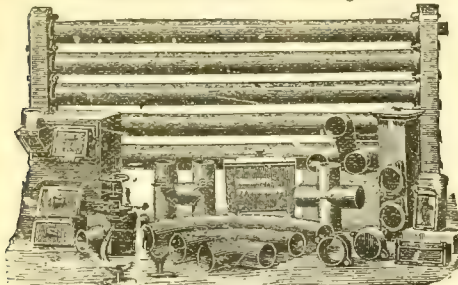


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GARDENER (HEAD WORKING).—Age 43, married; understands Vines, Cucumbers, Melons, &c.; Flower and Kitchen Gardens. Good Rose Grower. Twenty-two and a half years' excellent character. Near London preferred.—H. GODDARD, Berkswell, Coventry.

GARDENER (HEAD WORKING); age 29, Married; abstainer.—J. REEVES, Gardener to G. Livezey, Esq., Camden Park, Tunbridge Wells, is open to engage with any Lady or Gentleman requiring a Gardener with a good practical knowledge of the profession. Good personal character from present employer.—Garden Cottage, St. Peter's Street, Tunbridge Wells.

GARDENER (HEAD WORKING or good SINGLE-HANDED).—Age 33, married (children); seventeen years' experience indoors and out. Three years' character.—W. HOWARD, 11, Claremont Villas, Broomsleigh Street, Mui Lane, N.W.

GARDENER (HEAD or good SINGLE-HANDED).—Experienced in all branches. Highly recommended.—G. A., King-tanley, Stonehouse, Gloucester.

GARDENER.—Practical experience from early life in all branches; good testimonials. Abstainer.—G. HODGSON, 33, Casti gate, Grantham.

GARDENER; unmarried.—A GENTLEMAN wishes to recommend his Gardener, who has been with him four years. He is steady, honest, obliging, and sober. First-class Fruit, Plant, and Orchard Grower.—K. B. WHITE, Ardarauch, Gairloch Head, N.B.

GARDENER.—First-class Grower of Chrysanthemums, Cucumbers, Melons, Tomatoes, and Winter Flowers. Well up to stove, Greenhouse, Fruit, Flower, and Pleasure Gardens. A knowledge of Orchids. Where under one kept preferred.—GARDENER, 3, Red Cottage, Tilney Road, Wauvested, E.

GARDENER (SINGLE-HANDED).—Age 23, married; eight years' experience in Houses, Kitchen and Flower Gardens.—R. EARLEY, Woolton Hill, Newbury, Berks.

GARDENER (THIRD or FOURTH), where others are kept, or to Assist in a Garden; age 18.—A LADY strongly recommends a young man as above.—Mrs. CROXALL, Shustoke, Coleshill, Warwickshire.

GARDENER (UNDER); age 22.—H. LAW can recommend a young man as above. Seven years' experience.—H. LAW, Gardener, West Cliff Hotel, Folkestone, Kent.

Trade.
FOREMAN (WORKING).—Age 31, single; through experience in all branches. First-class Wroath, &c. Good Salesman. Excellent references.—M., 9, Grove Place, Acton, W.

To Nurserymen.

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AT

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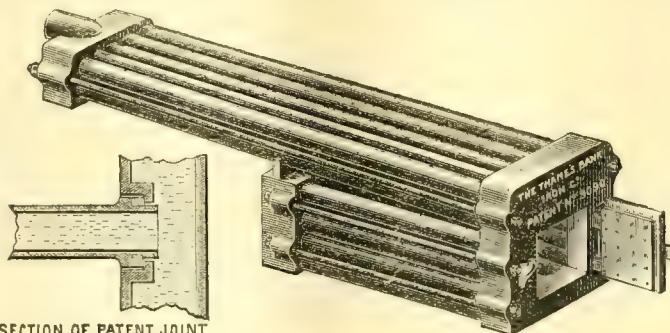
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W. HOCKIN, Sec., Taunton Cott'ge, South Road, Taunton.
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FIRST PROVINCIAL SHOW, Sheffield Corn Exchange, FRIDAY and SATURDAY, Nov. 16 and 17. Schedules (free) of
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WANTED, the following Numbers of the "GARDENERS' CHRONICLE"—Nos. 63 and 69, 1875; No. 209, 1877; No. 216, 1878; also Title and Index to vol. vi., 1876. Please state price to J. H. H. Gardeners' Chronicle Office, 41, Wellington Street, Strand, W.C.

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Must be in good condition, and with fruit. Please state full particulars as regards size, lowest price. Near London preferred.—C. JOHNSON and CO., Tangley Park Nursery, Hampton, Middlesex.

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See large Advertisement, November 3, page 499.

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MESSRS. PROTHEROE AND MORRIS will SELL BY AUCTION, at the Central Sale Rooms, 67 and 68, Cheapside, London, E.C., every MONDAY, THURSDAY, and SATURDAY, at half-past 11 o'clock precisely, extensive consignments of first-class HYACINTHS, TULIPS, CROCUS, NARCISSUS, and other BULBS, from Holland, lotted to suit the Trade and Private Buyers.

On view morning of Sale, and Catalogues had.

Tuesday, November 13.

The First Portion of the well-known Collection of ESTABLISHED ORCHIDS, formed by E. Wischhusen, Esq., of Wood Green, who is relinquishing their cultivation.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL BY AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on TUESDAY, November 13, at half-past 12 o'clock precisely, the First Portion of this well-known Collection, including the following—

Cattleya Skinneri alba	Lælia anceps alba
" Mandeli, six growths	" flammæ, eight growths
" Domimiana	" elegans alba
" Triana alba	" Wolstenholmei
" fausta delicata	" purpurata Lowiana, one-half of the only known plant
" exoniensis, twenty-one growths, believed to be the very finest variety in cultivation	Cypripedium selligerum
Cœlogyne cristata alba, ten leaves	" Schroderi
Lælia anceps alba	" latande
" Philbrickiana, 7 growths	" microchilum
	" decanum superbum
	" Sedeni

The plants are in excellent condition, and none will be sold privately prior to the Sale.

Catalogues may be had on application to the GARDENER, or of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Woking, Surrey.

Three days' UNRESERVED SALE of beautifully grown NURSERY STOCK.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL BY AUCTION, on the Premises, The Horrell Nurseries, Woking, situate about 15 minutes' walk from the Woking Railway Station, on TUESDAY, November 13, and two following days, at 12 o'clock precisely each day, by order of Messrs. H. & C. Cobbett several acres of well-grown NURSERY STOCK, which has been carefully prepared for removal, including a large quantity of Border Shrubs in great variety, adapted for immediate effect, 8000 Fruit Trees, 80,000 transplanted Forest Trees, 10,000 oval-leaved Privet, 2 to 4 feet; Green and Variegated Hollie, Ponticum Rhododendrons, 5000 Laurels of sorts, 2 to 4 feet, 5000 Standard Ornamental Trees, 3500 Standard, Half-standard, and Dwarf Roses, 1500 Climbing Plants, 75,000 Fruit Tree Stocks, &c.

May be viewed any day prior to the Sale. Catalogues obtained on the Premises, and of the Auctioneers, 67 and 68, Cheapside, E.C., and Leytonstone, E.

N.B.—Purchasers can arrange with Messrs. H. & C. Cobbett to have their lots conveyed to Woking Station at the mere cost of labour and material, whence they can be conveyed to all parts without change of truck.

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English-grown CAMELLIAS and AZALEAS, and a fine assortment of GREENHOUSE PLANTS, Standard and Dwarf ROSES, of the best sorts; selected FRUIT TREES, Hardy EVERGREENS, DUTCH BULBS, &c.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, at the City Auction Rooms, 38 and 39, Gracechurch Street, E.C., on TUESDAY NEXT, November 13, at half-past 12 o'clock precisely.

On view morning of Sale. Catalogues had at the Rooms; and of the Auctioneers, 67 and 68, Cheapside, London, E.C., and Leytonstone, E.

Wednesday Next.

8000 LILUM AURATUM, from Japan; splendid Bulbs, just received; 3000 LILY OF THE VALLEY; Barr's DAFFODILS, 500 AZALEAS and CAMELLIAS, Greenhouse Plants in variety, very fine EUCHARIS plants, English-grown LILIES, and other Hardy Bulbs.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, on WEDNESDAY NEXT, November 14, at half-past 12 o'clock precisely.

On view morning of Sale and Catalogues had.

Finchley Road, N.W.

Important to Florists and others engaged in the Nursery and Furnishing Trade.

The compact and old-established NURSERY and FLORIST'S BUSINESS FOR SALE, by Order of Mr. W. A. Clingo, who is leaving the neighbourhood.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL BY AUCTION, on the Premises, the Waverley Nursery, situate in the Finchley Road, London, N.W., a few minutes' walk from Marlborough Road Station, on THURSDAY, November 15, 1888, at 2 o'clock precisely, as going concerns, the compact Leasehold Property known as the WAVERLEY NURSERY, Finchley Road, with 11 Greenhouses, Pits, Stabling, and the whole of the Stock and Utensils in Trade, held for about 12 years unexpired at £50 per annum; also the Florist's Shop, No. 18, Finchley Road, occupying a prominent position, and held for 19 years unexpired at £50 per annum; 4 span-roof Greenhouses in Queen's Terrace, held for 15 years at £15 per annum; and a piece of Nursery ground at the corner of Alexandra Road, close to London Road Station, held at £20 per annum.

Particulars and conditions of Sale may be had on the Premises; of Messrs. GOWLING & CO., Solicitors, 40, Finsbury Pavement, E.C.; and of the Auctioneers, 67 and 68, Cheapside, London, E.C., and Leytonstone, E.

Friday Next.

Highly important SALE, by order of Messrs. F. Sander & Co.

The new and specially magnificent
CYPRIPIEDUM ELLIOTTIANUM.

The new
ODONTOGLOSSUM HUNNEWELLIANUM,
CATTLEYA SUPERBA,
from a hitherto unsearched district. This is apparently quite a new type.

SOPHRONITIS GRANDIFLORA ROSEA,

the new rose-coloured variety.

ZYGOPETALUM CRINITUM GRANDIFLORUM,

very splendid dwarf-flowered kind.

LÆLIA PUMILA (El Spirito Santo var.).

CATTLEYA SCHRODERE.

This grand Cattleya is very scarce in its native habitat.

CATTLEYA SCHOFIELDIANA,

the true, large, brilliantly coloured kind.

Grand importations of the above, and many other splendid ORCHIDS, for description of which see Catalogue.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions from Messrs. F. Sander & Co. to SELL the above valuable ORCHIDS by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on FRIDAY NEXT, November 16, at half-past 12 o'clock precisely.

On view morning of Sale, and Catalogues had.

Friday Next.—Cypripediums.

MESSRS. PROTHEROE AND MORRIS will include in their SALE, on FRIDAY NEXT, November 16, about 40 lots of choice CYPRIPIEDUMS from a well-known private collection, including C. Sedeni candidum, C. Mesuresianum, Læcanium, and others, many of them large plants.

On view morning of Sale, and Catalogues had.

Sales from Sample.—Tuesday, November 20.

MESSRS. PROTHEROE AND MORRIS desire to announce that their NEXT SAMPLE SALE will take place as above, for which they will be glad to RECEIVE NOTICE OF ENTRIES as early as possible.

Lee, S.E.

Adjoining the Lee Railway Station. Important Unreserved Sale of unusually well-grown NURSERY STOCK, carefully prepared for removal, and affording an excellent opportunity for procuring Shrubs and Trees for immediate effective planting.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. B. Maller & Sons to SELL by AUCTION, on the Premises, at the Burnt Ash Hill Nurseries, Lee, S.E., on WEDNESDAY and THURSDAY, November 21 and 22, at 12 o'clock precisely each day, a large quantity of remarkably well-grown NURSERY STOCK, including a splendid assortment of well-rooted Conifers and Evergreen Shrubs, 1500 Laurels, Privet, and Yews; 1000 Green Hollies, bushy plants; 5000 Standard and Ornamental Trees; 3000 Standard and Pyramid Fruit Trees, 5000 Red, White, and Black Currants; 1000 Standard and Dwarf Roses, and other Stock.

May be viewed any day prior to the Sale. Catalogues may be had on the Premises; and of the Auctioneers, 67 and 68, Cheapside, E.C., and Leytonstone, E.

N.B.—The Auctioneers desire to call special attention to this Sale, the Stock being in a particularly healthy condition.

Friday, November 23.

EXTENSIVE IMPORTATION OF ORCHIDS.

MESSRS. PROTHEROE AND MORRIS will SELL BY AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on FRIDAY, November 23, at half-past 12 o'clock precisely, extensive importations of ORCHIDS, received direct, being the contents of about 60 cases, and including a large consignment of Cattleya Percivaliana, C. lobata superba, C. labiata Warneri, and Oncidium Papilio.

On view morning of Sale, and Catalogues had.

Tuesday, Nov. 27.

ORCHIDS IN FLOWER.

MESSRS. PROTHEROE AND MORRIS desire to announce that their NEXT SALE OF ORCHIDS IN FLOWER, will take place as above, for which they will be glad to RECEIVE NOTICE OF ENTRIES as soon as possible.

Barnet, N.

By order of the Court of Chancery. Cornwall v. Cornwell. SALE of the old-established NURSERY BUSINESS as a going concern, and also about 6 acres of FREEHOLD and COPYHOLD LAND.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL BY AUCTION, at the Mart, Tokenhouse Yard, London, E.C., on FRIDAY, November 30, at 2 o'clock precisely, the following properties:—

Lot 1.—The old-established NURSERY, SEED, and FLORIST'S BUSINESS, known as the HADLEY NURSERY, Barnet, N., occupying a good position in the best part of the High Street, within eight minutes' walk of the High Barnet Railway Station. The Property comprises about 10 acres of ground, with eight Greenhouses, Dwelling-house, and Seed Shop, the whole held for an unexpired term of about fifteen years at the moderate rental of £85 per annum. The Goodwill of the Business carried on for so many years will be included in this lot.

Lot 2.—About 6 acres of valuable FREEHOLD and COPYHOLD BUILDING or NURSERY LAND, known as the COMMON NURSERY, Barnet Common, possessing long frontages to the main road, and to Union Lane in the rear.

Lot 3.—Two acres of LAND, opposite Lot 2, held at £7 per annum.

This Sale offers an unusual opportunity for any one desirous of embarking into the Nursery Business. The whole of the STOCK IN TRADE will be Sold by Auction, thus enabling purchasers to secure only such stock as may be required for carrying on the business at unreserved auction prices.

Particulars and Conditions of Sale may be had on the Premises of Messrs. HOUGHTONS and BYFIELD, Solicitors, 85, Gracechurch Street, E.C.; and at Barnet, Herts; of Messrs. MONTAGU SCOTT and BAKER, Solicitors, 10, Gray's Inn Square, W.C., and Hatfield; and of the Auctioneers, 67 and 68, Cheapside, London, E.C., and Leytonstone, E.

Bulbs from Holland.

Sales every MONDAY, WEDNESDAY, and SATURDAY, in Large and Small Lots, to suit all Buyers.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., every MONDAY, WEDNESDAY, and SATURDAY, at half-past 12 o'clock precisely each day, first-class consignments of HYACINTHS, TULIPS, CROCUSES, and other BULBS, arriving daily from well-known Farms in Holland.

On view morning of Sale, and Catalogues had.

Wednesday and Saturday Next.

Pyramid and Dwarf-trained FRUIT TREES; also several hundred choice named Standard and Dwarf ROSE TREES, from a well-known English grower.

MR. J. C. STEVENS will include the above in his SALES BY AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY and SATURDAY NEXT, November 14 and 17.

On view morning of Sale, and Catalogues had.

Thursday Next.—(Sale No. 7795.)

5000 GRAND BULBS of LILUM AURATUM, just received from Japan in the finest possible condition.

MR. J. C. STEVENS will include the above in his SALE BY AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, November 15.

On view morning of Sale, and Catalogues had.

Thursday Next.—(Sale No. 7795.)

SPECIAL SALE OF ORCHIDS IN FLOWER and BUD.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, November 15, at half-past 12 o'clock precisely, a fine COLLECTION OF ORCHIDS in Flower and Bud, comprising many choice species and rare varieties.

On view morning of Sale, and Catalogues had.

Cheap Bulb Sales.

MESSRS. SMAL AND CO. will SELL by AUCTION, at 123, Fenchurch Street, City, E.C., every MONDAY, WEDNESDAY, and FRIDAY, at 12 o'clock each day, large consignments of GLADIOLI, SPIRÆA, DIELYTRA, DUTCH BULBS, &c., lotted to suit all buyers.

Horticultural Auction Rooms, 123, Fenchurch Street, E.C.

The Hewlett Road Nursery, Cheltenham.

TO GENTLEMEN, PLANTERS, NURSERYMEN, AND OTHERS.

MESSRS. ENGALL, SANDERS AND CO. are instructed by the Executors of the late Mr. W. Hopwood, to SELL BY AUCTION, at their No. 2 Nursery, situate as above, on THURSDAY, November 15, 1888, commencing at 11 o'clock prompt, a quantity of well-grown NURSERY STOCK,

comprising the contents of 2 specimen Borders, which include a quantity of choice Evergreen and Flowering Shrubs; also a bed of about 1000 strong English Yews, 20,000 Evergreen Privet, Tree Box, healthy Laurels, a bed of extra large oval-leaf Privet, also beds of Thuja Lobbi, American Arbor-vitæ, Cupressus Lawsonii, strong Spruce Firs for Christmas Trees, Ivy in pots, Standard Ornamental Trees, dwarf and standard Roses, strong standard Fruit Trees, including Apple, Pear, Damson and Plum, Gooseberry and Currant Trees, and a quantity of other useful Nursery Stock.

The Lots may be viewed 3 days prior to sale on application at the Nursery, or at the Offices, 58, High Street.

The Auctioneers beg to call special attention to this sale, as it affords an unusual opportunity to persons in want of stock. The whole of the lots are well-grown, strong and healthy.

Further particulars and Catalogues may be had on application to Mr. HOPWOOD, at the Belle Vue Nursery, 58, High Street; or from the Auctioneers, No. 1, Promenade, Cheltenham.

Coombe Bank, Sundridge, Sevenoaks.

IMPORTANT SALE OF VALUABLE HUTHOUSE and other PLANTS.

MR. JOHN WHITE is instructed by W. H. Spottiswoode, Esq. (the Mansion and Grounds having been let for a term) to SELL BY AUCTION, on the Premises as above, on FRIDAY, November 23, 1888, at 12 o'clock precisely, the whole of the CONTENTS of the HOTHOUSES, VINERIES, FORCING PITS, FRAMES, &c., comprising choice Specimen Plants, Azaleas, Palms, Camellias, Rhododendrons, Aloes, Cacti, Orchids, Ferns, Begonias, Pelargoniums, Chrysanthemums, Bedding Geraniums, and other plants, Fuchsias, Primulas, Eucharis, Strawberry plants, &c.

May be viewed on the day prior to and morning of Sale; and Catalogues may be had at the Inns in the neighbourhood, and of the Auctioneer, 53, London Road, Sevenoaks.

WANTED TO RENT, a small FLORIST or MARKET GARDEN BUSINESS, with Glass, Dwelling-house, and a few acres of Land.—R. W. B., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

Headingley Nurseries, Leeds.

SALE by PRIVATE CONTRACT, one of the most valuable NURSERIES in the district, as a going concern, by order of the Executors of the late Mr. Samuel Hartley. The Nursery contains an area of 8 acres, and is well stocked with a general assortment of Nursery Stock, also the Greenhouses, with well grown Greenhouse and Stove Plants. The owner will grant a Lease of the House, Land, and Out-buildings. Application to be made to Mr. W. Y. FEARNSLEY, 16, Chapel Lane, Headingley, Leeds.

The Hornsey Nursery.

IMPORTANT TO THE TRADE AND OTHERS.

MESSRS. PROTHEROE AND MORRIS are instructed to LET, with early possession, the HORNSEY NURSERY, close to the Railway Station. The Tenant will have the option of purchasing the magnificent specimen Double White Camellias, in the finest health and profusely set with flower buds, and any other part of the Stock at Unreserved Auction Prices at the Clearance Sale of Greenhouse Plants, &c., which will take place on the Premises on WEDNESDAY, November 28th inst.

Particulars and Catalogues may be had of Messrs. PROTHEROE AND MORRIS, 67 and 68, Cheapside, London, E.C.

FOR DISPOSAL, a good SEED, FLOWER, and FRUIT BUSINESS. Terms mostly Cash. Near Manchester, Book-shed.

FLORIST, 41, Wellington Street, Strand, W.C.

TO BE SOLD, as a going concern, a valuable FREEHOLD NURSERY and BUSINESS, containing about 4 acres, 28 large and well built Greenhouses (all fully stocked), 2 Coach-houses, 2 Stables, Large Office, 4 Sheds, 3 Vans, Cart, and 2 Horses, and other requisites. Situate within 4 miles of West End. A first-class opportunity for the promotion of a company, there being every convenience for carrying on an extensive business. Further particulars of Messrs. W. EYDMANN AND SON, Auctioneers, &c., Acton, W.

Florists, Nurserymen, and Others.

Suit Growers, or admirable chance to start a good local business.

TO BE SOLD, most compact PREMISES, on the main road, about 5 miles from Marble Arch, containing 8-roomed Residence, large Greenhouses and Forcing Pits. The whole standing in about half an acre of ground. Lease 87 years, at a ground rent. Price £200. Mortgage can be had, which includes all stock and utensils.

HERBERT DRAKE, 343, Harrow Road, Paddington, W.

To Market Gardeners, Florists, Nurserymen, &c.
HAMPTON-ON-THAMES.

FOR SALE, choice FREEHOLD LAND, in Acre Plots, suitable for above. Rich Garden Soil with gravel and sand sub-soil. The land is considered by the Trade the finest near London for Grapes and all other Market Products. Apply, SECRETARY, Estates Investment and Villa Farm Company, Estate Office, Tangley Park, Hampton-on-Thames.

South of England.

LARGE GARDEN, 20 Acres, with Twenty Greenhouses and Vineries. £7000 has been spent on the property. Seven years' lease. Two Cottages inclusive. £150 a year. ELDRIDGE, Portsmouth.

ORCHIDS.

THE LIVERPOOL HORTICULTURAL CO.

(JOHN COWAN), Limited,

ARE CONSTANTLY RECEIVING

IMPORTATIONS OF ORCHIDS from various parts of the World,

AND THEY HAVE AN IMMENSE STOCK OF

Established and Semi-established

ORCHIDS.

Full particulars sent free on application.

THE VINEYARD AND NURSERIES,
GARSTON, LIVERPOOL.

30,000 DWARF ROSES.—Cheaper than ever! All the best leading varieties. Warranted true to name. The best money can buy. Sample dozen from 3s.; 22s. per 100, packing free, for Cash with order. Send for a List.

A. J. AND C. ALLEN, Stone Hills Nursery, Norwich.

FOR SALE, splendid ASPARAGUS ROOTS for forcing. Apply to ROBERT KIRK, Gardener, Acomb, York.

TO PURCHASERS OF BAYS.—Several thousand BAYS, from 1½ to 2 feet high, to be sold cheap.—Apply to H. GRIMES, 19, Upton Road, Ryde, Isle of Wight.

CŒLOGYNE CRISTATA, with bloom-spikes, well grown, at reduced prices. Trustees of the late J. STEVENSON, Timperley, Cheshire.

SPECIAL OFFER.—50,000 RHODODENDRONS, all the early varieties, White and Scarlet, well set with buds, fine plants for forcing. Low prices. Apply to ISAAC MATTHEWS AND SON, Milton Nurseries, Stoke-on-Trent.

The only complete Collection of Daffodils existing. **BARR'S NEW DAFFODIL CATALOGUE** for 1888. Now Ready. Free on application.

Containing a full Descriptive List of High-class and Distinct Daffodils only, and also a Descriptive List of Beautiful Hardy Daffodils, at greatly reduced prices. This Catalogue also contains Barr's Specialty Collections of Iris, Lilies, Pæonies, Michaelmas Daisies, Plantains, Lilies, Day-Lilies, and a select List of Showy Hardy Herbaceous Plants.

BARR AND SON, 12 and 13, King Street, Covent Garden, W.C.

SPECIMEN and HALF-SPECIMEN STEPHANOTIS, free-flowering variety, very fine stuff, 10 to 12 feet; also 25,000 AUCUBAS, all sizes. For particulars apply to G. SMITH, Dell Nursery, Rock Ferry, Cheshire.

SPECIAL OFFER.—500,000 LARCH FIR, 1½ to 2 feet, and 15 to 18 inches; SCOTCH FIR, 1½ to 2 feet, and 15 to 18 inches; THORN QUICK, 4 and 5 inches, fine; Common and Portugal LAURELS, and other General Nursery Stock. For particulars and price apply to ISAAC MATTHEWS AND SON, Milton, Stoke-on-Trent.

Palms, Foliage Plants, Heaths, &c.

FRANCIS R. KINGHORN will be pleased to forward LIST of above with low prices. Leading decorative PALMS in all sizes, great quantities, and in finest health. Richmond, Surrey; and 191 and 192, Flower Market, Covent Garden, W.C.

Special Cheap Offer.

WM. PAUL AND SON beg to call the attention of Planters to the following articles, of which they hold very large stocks, and are consequently able to offer at unusually low prices. The quality of the trees is in all respects first-rate, and all are in excellent condition for removal:—

STANDARD VICTORIA PLUMS, 3, 4, and 5 years old, stout and straight, £5 per 100, £15 per 1000.

PYRAMIDAL VICTORIA PLUMS, 5 to 6 feet, fine fruiting trees, £5 per 100.

STANDARD DAMSONS of sorts, clean, well-grown trees, £5 per 100.

PAUL'S DOUBLE CRIMSON THORN, nice standards, with heads, 75s. per 100; do., stronger, £5 per 100; do., extra strong, £5 per 100.

ACER NEGUNDO VARIEGATA, good standards, £5 per 100. **RHODODENDRON PONTICUM**, fine bushes (these are growing on loam near Uckfield, in Sussex), 1 to 1½ foot high, and as much through, 25s. per 100; 1½ to 2 feet, do., 30s. per 100; 2 to 3 feet, do., extra stout, 100s. per 100; 3 to 4 feet, do., extra stout, 120s. per 100.

Priced Descriptive LIST of Fruit Trees, Hardy Trees and Shrubs, Roses, &c., post-free on application.

PAUL'S Nurseries, Waltham Cross, Herts.

Bulbs of Finest Quality only.

BARR'S BULB CATALOGUE for 1888, Now Ready. Sent free on application.

Contains full Descriptive List of the best Hyacinths, Tulips, and other Dutch Bulbs in cultivation, also an interesting descriptive List of Cape and Californian Bulbs and Tubers, including many beautiful varieties.

BARR AND SON, 12 and 13, King Street, Covent Garden, W.C.

CREEPERS FOR WALLS.—By planting what is suitable, an ugly object may easily be made beautiful. Most being in pots, can be sent and put out at any time. Descriptive LIST and advice free.—RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

"PAUL ENGLEHEART".—

Rooted Layers of the above fine Crismon Bedding CLOVE CARNATION are now ready to lift. The variety can be confidently recommended as possessing all the good qualities of the "Old Glove," with much greater vigour of constitution, and a dwarf sturdy habit, which REQUIRES NO STICKS.

Price, 2s. each, 18s. per dozen, 9s. half-dozen.

GILBERT DAVIDSON, Ammanford, R.S.O., Carmarthenshire.

OLD-FASHIONED HEDGES.—English

Yews, bushy, and with a profusion of fibrous roots, 1½ to 2 feet, 6s. per dozen, 35s. per 100; 2 to 2½ feet, 8s. per dozen, 50s. per 100; 2½ to 3 feet, 9s. per dozen, 60s. per 100; 3 to 3½ feet, 12s. per dozen, 81s. per 100. Prices of larger sizes and other Evergreens, suitable for Hedges—e.g., Tree Box, Holly, Laurel, Privet, Cypress, Juniper, Thuia, &c., on application.—RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

W. GORDON, IMPORTER OF ORCHIDS.

An Immense Stock of recently-imported Plants compels a sale of the established plants to make room. They have not yet flowered, but are all flowering plants, and must be sold at a great sacrifice. Very valuable varieties are certainly to be obtained, and great bargains. See Flower Journals for high prices recently obtained. The Special Offer affords a paying investment to anyone with glass at command, which should not be overlooked. Such plants may never again be offered to the public and the Trade. LILIES, Silver Banksian Medal, Silver Medal National Chrysanthemum Society, September, 1888.

JAPANESE MAPLES, Silver Banksian Medal.

TREE PÆONIES, 7 Fir-t-class Certificates.

IRIS, most gorgeous, 4 Fir-t-class Certificates.

CATALOGUES of the above on application to The Nurseries, Amyand Park Road, Twickenham.

ROSES! ROSES!! ROSES!!!—The best and cheapest in the World. 40 choice Perpetuals for 21s. Purchaser's selection from 400 best varieties. CATALOGUES free on application. Ten acres of Roses, 100,000 grand plants to select from. Plant now.

JAMES WALTERS, Rose Grower, Exeter.

STRAWBERRY PLANTS, in small pots.

Splendid stuff of all best kinds, and true to name. Price List on application.

FRANCIS R. KINGHORN, Nurseryman, Richmond, Surrey.

TREES and SHRUBS for Game-covers and

Underwood. Intending planters should send for CATALOGUE, free on application.—RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

To those about to Plant.

A DESCRIPTIVE CATALOGUE, comprising fine Transplanted Fruit Trees, Roses, Hardy Climbers, Rhododendrons, Conifers, Ornamental and Flowering Trees and Shrubs, Forest Trees, &c., in large varieties and quantities, adapted to all soils and climates. Sent free on application to GEO. JACKMAN AND SON, Woking Nursery, Surrey.

Orchard Planting.

H. LANE AND SON have a large stock of fine healthy well-grown Standard PEARS, PLUMS, APPLES, DAMSONS, CHERRIES, WALNUTS, &c. An inspection is solicited. Special prices for quantities. Descriptive CATALOGUE free. Fruit Trees, Roses, Rhododendrons, Trees and Shrubs, &c.

The Nurseries, Berkhamsted, Herts.

TURF—TURF.—Finest, for Tennis Lawns, &c., at 10s. per 100. Superior Top-spit for Potting, also. J. KEEVIL, Merton Hall Road, Wimbledon.

100 HERBACEOUS and Alpine Plants for 25s.

RICHARD SMITH AND CO.'S Selection as above contains a most interesting and valuable assortment of beautiful and Hardy Plants for the Border or Rock-work, which produce flowers and render the garden attractive all through the year. Descriptive CATALOGUE post-free for 6 stamps.—RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

Huddersfield Chrysanthemum Society.

The FIFTH EXHIBITION will be held in the Town Hall, Huddersfield, on FRIDAY and SATURDAY, November 16 and 17, 1888. Entries Close on Friday, November 9. Schedules and Entry Forms may be obtained from

JOHN BELL, Sec., Marsh, Huddersfield.

BIRMINGHAM GREAT CHRYSANTHEMUM AND FRUIT SHOW, will be held in the Town Hall, on WEDNESDAY and THURSDAY, November 21 and 22, 1888, offered in Prizes, including £53 for Cut Blooms, and £28 for Grapes. Entries Close November 14. Schedules and all information can be had post-free on application to

J. HUGHES, Sec.

Northwood Villas, Metchley Lane, Herborne, Birmingham.

HULL and EAST RIDING CHRYSAETHMUM SOCIETY.

The ANNUAL GRAND EXHIBITION will be held in the Artillery Barracks, Hull, on THURSDAY and FRIDAY, November 22 and 23. Prizes £180 for CHRYSANTHEMUMS alone. CLASS 1.—48 Blooms, 1st Prize, £15; 2nd, £10; 3rd, £5; 4th, £2. CLASS 2.—24 Blooms, 1st Prize, Veitch Medal and £5.

The SILVER CHALLENGE VASE, value 15 Guineas, will be offered with the 1st Prize in Class 1. The 1st Prize in Class 2 is offered by the VEITCH MEMORIAL TRUSTEES. Entries Close November 15. Schedules from Hon. Secs.,

EDW. HARLAND, Manor Street, Hull.

JAMES DIXON, 2, County Buildings, Hull.

PONTEFRACHT CHRYSANTHEMUM and BIRD SHOW, NOVEMBER 23 and 24, 1888. £100 offered in Prizes. THOS. GLOVER, Sec.

THE GARDENERS' ORPHAN FUND.

DONATIONS and SUBSCRIPTIONS

WILL BE THANKFULLY RECEIVED BY

A. F. BARRON, Hon. Sec.,

Royal Horticultural Society's Gardens, Chiswick, London, W.

THE PARKS, &c., COMMITTEE of the

METROPOLITAN BOARD OF WORKS will meet at the Office of the Board, Spring Gardens, S.W., on WEDNESDAY, November 14, 1888, at Twelve o'clock at noon, and will then be prepared to OPEN TENDERS by persons who may be willing to contract for preparing for and GRAVELLING some of the FOOTPATHS in FINSBURY PARK, &c. Persons desirous to submit Tenders may inspect the Plan and obtain Specification, Form of Tender, and other particulars, on personal application at the Office of the Superintending Architect of the Board, at Spring Gardens, between the hours of 9 A.M. and 4 P.M. (or on Saturdays between the hours of 9 A.M. and 2 P.M.), until Tuesday, November 13, 1888. The Tenders, which must be in the form supplied from this Office, and be addressed to "The Clerk of the Board," and endorsed "Tender for Graveling Paths, Finsbury Park," are to be delivered at the Office before 4 o'clock on the last-mentioned day, and no Tender will be received after that hour. Any Tender which is not fully filled up in every particular will be rejected. The Committee do not bind themselves to accept the lowest or any Tender. J. E. WAKEFIELD, Clerk of the Board, Spring Gardens, S.W., November 5, 1888.

DRIED PALM LEAVES.—Immense importation of CHAMÉDOREAS and ARECAS.—For Prices, apply to WATSON AND SCULL, 90, Lower Thames Street, London, E.C., where samples can be seen; or direct to the Importers, PETER SMITH AND CO., Hamburg.

CLEARANCE SALE (at sacrifice) of PALMS, DRACENAS, &c. LATANIA BORBONICA and PHENIX RECLINATA, 12 inches high, 4s. per dozen, 30s. per 100. Package and carriage free.

LATANIA BORBONICA, SEAFORTHIA ELEGANS, CORYPHA AUSTRALIS, and PHENIX RECLINATA, 20 to 24 inches high, 1s. 6d. each, 16s. per dozen; same kinds, 2 feet 6 to 3 feet high, 3s. to 5s. each.

Handsome PALMS, 4 feet high, 18s. each.

6 feet high, 40s. each.

Twelve assorted PALMS and DRACENAS, averaging, with pots, 24 inches high, in wood case, free, 18s.; six do., 10s.

KENTIAS, 3s. to 21s. each.

DRACENAS, 24 inches to 5 feet high, 2s. to 40s. each.

Inspection invited.

GARDENER, Holly Lodge, Stamford Hill, N.

LIME and OTHER TREES.

The following Trees must be sold, to clear the ground:—

300 LIMES, 10 to 13 feet.

825 HORSE CHESTNUTS, 12 to 14 feet.

350 WALNUTS, 6 to 12, to 18 feet.

110 SYCAMORES, 6 to 10 feet.

Offers for a part or the whole to be sent to the

MANAGER, Calcot Gardens, Reading, Berks.

80,000 CLEMATIS, in Pots, of all the

finest Double and Single Varieties (some of the flowers of which become 10 inches across, and are of every shade, from pure white to the darkest purple), for climbing and bedding, from 12s. to 24s. per dozen, strong plants; extra strong plants, repotted into 5½ inch pots, 2s. 6d. each; Beauty of Worcester, a magnificent purple, excellent for bedding, recently sent out by us, reduced price 2s. 6d. each. Descriptive LIST on application.—RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

Roses, Fruit Trees, &c.
CHARLES TURNER'S Autumn CATALOGUE, containing full collections of Roses, Fruit Trees, Conifers, and all kinds of Hardy Trees and Shrubs, is now ready, and may be had free on application.
 The Royal Nurseries, Slough.

TO LARGE PLANTERS OF THORN QUICKS.—1 to 1½ foot, 9s. per 1000, £40 per 100,000; 1½ to 2 feet, 11s. per 1000, £50 per 100,000; 2 to 2½ feet, 13s. per 1000; 2½ to 3 feet, 15s. per 1000; 3 to 4 feet, 18s. per 1000.
GARLIES MITCHELL, Nurseryman, Stranraer.

Cape Bulbs—Cape Bulbs.
THE CAPETOWN BOTANIC GARDENS request their Trade Correspondents to forward their Orders for this season's Bulbs as early as possible. Delivery in Jan. & Feb.
 —A. F. BAXTER, Sales Depart., Botanic Gardens, Capetown.

TREES AND SHRUBS for the Sea Coast.
 CATALOGUE free on application.—**RICHARD SMITH AND CO.**, Nurserymen and Seed Merchants, Worcester.

SPECIAL OFFER OF FERNS.—*Pteris tremula*, *P. cretica*, *P. cretica cristata*, *P. serrulata cristata compacta*, in thumbs, fit for immediate potting. Also the same varieties, good stuff, in 48s., to offer in quantity.
 Prices per 100 or 1000 on application.
R. FENGELLY, Dyson's Lane, Upper Edmonton.

SEAKALE for Forcing.—Selected large Crowns, none better in the Trade, 75s. per 1000; under 500, 8s. per 100. A remittance with all orders.
ALFRED ATWOOD, Grower, 14, Lavender Terrace, Battersea, W., late of 51, Shillington Street, Battersea, S.W.

SPECIAL OFFER.—30 Acres of RHODODENDRONS, Seedling, Hybrids and ponticum, 4 to 6 in., 6 to 9 in., 9 to 12 in., 12 to 15 in., 15 to 18 in., 18 to 24 inches. All good plants, at exceptional low prices. Apply to
ISAAC MATTHEWS AND SON, The Nurseries, Milton, Stoke-on-Trent.

LILIUM AURATUM.—Good, plump, sound Bulbs, 6s., 9s., 12s., 18s., and 24s. per dozen. All other good LILIES at equally low prices.
Mr. WILLIAM BULL'S Establishment for New and Rare Plants, 536, King's Road, Chelsea, London, S.W.

EVERGREEN HEDGES.
EVERGREEN HEDGES.
YEW, English, 1½ to 2 feet, 30s. per 100; 2 to 2½ feet, 45s. per 100; 2½ to 3 feet, 65s. per 100.
HOLLIES, Green, 2 to 2½ feet, 40s. per 100; 2½ to 3 feet, 60s. per 100.

LAURELS, Common, 1½ to 2 feet, 12s. per 100; 2 to 3 feet, 15s. per 100; 2½ to 3½ feet, 20s. per 100.
THUJA LOBBII, 2½ to 3 feet, 30s. to 40s. per 100.
 We hold immense stocks of the above, all bushy and well rooted Plants.

Special offer for Covert Plants, &c., free on application.
JOHN PERKINS AND SON, The Old Established Nursery and Seed Business, 62, Market Square, Northampton.
 TELEGRAPHIC ADDRESS—"QUICK," NORTHAMPTON.

TREES AND SHRUBS suitable for Towns and Smoky Districts. CATALOGUE free on application.—**RICHARD SMITH AND CO.**, Nurserymen and Seed Merchants, Worcester.

To the Trade.
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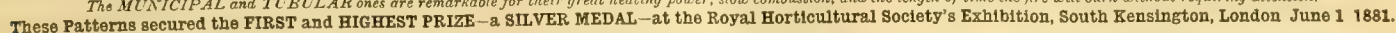
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12 feet. ELMS, English, 10 to 12 feet; Guernsey, 12 feet.
LIMES, 12 to 16 and 20 feet; Silver-leaved, 10 to 14 feet.
LIQUIDAMBAR, 8 to 10 feet. MAPLE, Norway, 14 to 16 feet.
OAK, English, 10 to 14 feet; Scarlet American, 12 to 14 feet;
PLANES, 12 to 16 feet. POPLAR BULLEANA, 10 to 16 feet;
P. CANADENSIS NOVA (the true variety), 12 to 16 feet;
SYCAMORE, Common, 14 to 16 feet; Purple, 14 to 16 feet.
THORNs, Double Scarlet, 8 to 10 feet; White, 8 to 10 feet.
WALNUTS, Common, 10 to 12 feet.

Weeping Trees.

BEECH, Weeping, Pyramids and Standards, 8 to 12 feet;
Weeping, Purple, Pyramids and Standards, 7 to 12 feet. BIRCH,
Young's Weeping, Pyramids and Standards, 8 to 14 ft. ELMS,
Weeping, Pyramids and Standards, 7 to 14 feet. LARCH,
Weeping, Pyramids, 8 to 10 feet. OAK, Weeping, English,
Standards, 10 to 12 feet. POPLAR, Weeping, Pyramids, and
Standards, 10 to 12 feet. SOPHORA JAPONICA PENDULA,
Standards, 8 to 9 feet.

KNAP HILL NURSERY,
WOKING, SURREY.

As a Supplement

TO THE

GARDENERS' CHRONICLE

FOR

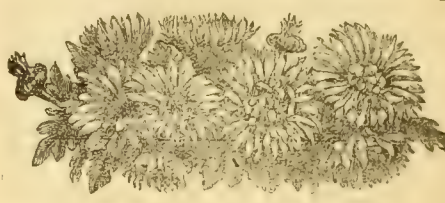
Next Week, November 17,

WILL BE

Published an Ink Photograph

OF A

GROUP of ORCHIDS.



THE

Gardeners' Chronicle.

SATURDAY, NOVEMBER 10, 1888.

THE DOUGLAS FIR IN SCOT- LAND.

AMONGST the exotic timber trees which have
been introduced into Europe during the
present century, the Douglas Fir has attracted
more notice than any other species, owing to its
remarkably quick growth during early youth.
Specimens growing in free positions are believed
to have laid on a mean annual increment of as
much as 3 cubic feet, while only 1 cubic foot, at
the outside, could be expected of a Larch tree; and
even in a few fully stocked woods the increment
appeared exceedingly great.

In the *Gardeners' Chronicle* of October 8,
1887, p. 427, an extract from the *Perthshire
Constitutional* was published, which drew atten-
tion to the oldest pure wood of Douglas Fir,
situated at Taymount in Perthshire, on the estate
of the Earl of Mansfield. The plantation in
question is spoken of in glowing terms, but only
a few scanty measurements are given, so that it is
difficult for the reader to arrive at any definite
idea on the progress of the plantation, whereby
he can compare it with that of our indigenous
timber trees. Besides being of very rapid growth,
it has been claimed for the Douglas Fir that it is
not liable to disease—an advantage, which, if it
really did exist, would be of great weight.

Such general statements are often misleading,
and I determined to take the first opportunity to
inquire somewhat more fully into this matter.
Accordingly during a short tour in Scotland in
July last, I measured a sample plot in the Tay-
mount Douglas Fir plantation, and I also mea-
sured, by way of comparison, a sample plot in an
adjoining Scotch Pine plantation. The results
of these measurements seem to me of sufficient
interest to deserve publication.

The plantation of Taymount is situated about
7 miles to the north of Perth, in 56½° northern
latitude, and at an elevation of about 200 feet
above the level of the sea. The ground slopes
very gently towards the south-east and the
soil consists of so-called "stiff till," which in this
case, may be described as a loamy clay, retaining

moisture well. The quality of the locality may safely be given as first or best quality for the growth of trees. The rainfall has been put down at 28 inches annually. The area of the plantation amounts to 8 acres, and this was planted by Mr. William McCorquodale, the senior wood manager in Scotland, in the spring of 1860, in the following manner:—Douglas Fir, four years old, 9 by 9 feet; Larch, four years old, one between every two Douglas Firs, and an additional line between every two lines of Fir, so that the plants stood $4\frac{1}{2}$ by $4\frac{1}{2}$ feet, each acre containing 2151 plants, of which 538 were Douglas Fir, and 1613 Larch. The plants of Douglas Fir were two years' seedlings, and two years' transplanted. The plantation took a good start, and the Firs are said to have taken the lead at once. The Larch were gradually thinned out, until the last disappeared before the year 1880, since which time the plantation was one of pure Douglas Fir. The first regular thinning of the Douglas Fir occurred in 1887. Before that thinning, about 277 trees remained per acre, the remaining 261 having gradually disappeared during the previous twenty-seven years. Of the 277 trees seventy-five per acre were thinned out in 1887, so that now, in 1888, the countings showed 202 trees per acre.

No accurate statistics are in my possession regarding the material removed by thinning up to date. At the present moment the area is well stocked, and any small interruption of the leaf canopy by the thinning of 1887 will disappear by the end of 1889, when the cover overhead will, barring accidents, be again perfect. Thus, the thinning of 1887, though fairly heavy, was by no means too heavy.

On a sample plot, measuring four-tenths of an acre of average appearance, all trees were carefully measured by myself personally on July 20, 1888, at height of chest, or 4 feet 6 inches from the ground; a selected sample tree was felled by the kind permission of Mr. McCorquodale, carefully measured, and thus the cubic contents or volume of the tree ascertained, separated according to solid wood and branches. The former includes all wood over 3 inches diameter at the small end. In the present case none of the branches measured as much as 3 inches in diameter, so that the solid wood represents the stem of the tree from the ground up to a diameter of 3 inches. The following table shows the growing stock per acre:—

Diameter of Tree at 4 feet 6 inches above the ground, in inches.	Number of Trees in each Diameter—Class.	Total Sectional Area at 4 feet 6 inches, in square feet.
4	3	26
5	12	164
6	3	59
7	7	187
8	10	349
9	17	751
10	15	818
11	33	2178
12	20	2356
13	35	3128
14	17	1817
15	20	2454
16	8	1117
17	2	315
Total ...	202	15817

From the above data it follows that the average sectional area per tree is = $\frac{15817}{202} = 783$ square feet, which corresponds to a diameter of 12 inches.

The sample tree, of average development, which was felled, showed the following dimensions:—

Diameter at 4 feet 6 inches above the ground	11.78 inches.
Sectional area	757 sq. ft.
Height	60 feet.

At 48 feet from the ground the stem showed a diameter of 3 inches, and here the top was cut off. These 48 feet were divided into eight sections of 6 feet length each, each section measured in the middle, and thus the following data obtained:—

Number of Section.	Length of Section in Feet.	Mean Diameter of Section in Inches.	Volume of Solid Wood in each Section in Cubic Feet.
1	6	12.5	5.11
2	6	10.0	3.27
3	6	9.5	2.05
4	6	8.5	2.36
5	6	7.0	1.60
6	6	6.5	1.38
7	6	5.0	.82
8	6	3.5	.40
Total ...	48	...	17.89

The top, 12 feet in length, and the branches, were stacked, and found to fill a space of 50 cubic feet, which may perhaps be put as equal to $50 \times 1.5 = 75$ cubic feet of woody matter. In the present paper this wood will not be taken into account.

From the contents of the sample tree, the volume of solid wood per acre was calculated according to the following equation:—Volume of sample tree: volume per acre = sectional area of sample tree: Sectional area of all trees per acre; or $17.89 : x = 757 : 15817$, and $x =$ volume per acre = $\frac{17.89 \times 15817}{757} = 3738$ cubic feet of solid wood

over 3 inches in diameter, exclusive of top and branches.

By dividing the volume by the age of the trees (32) the average annual production of wood is obtained:— $\frac{3738}{32} = 117$ cubic feet, exclusive of previous thinnings; or, if only the time since planting (28 years) is taken into account:—Average annual production of solid wood = $\frac{3738}{28} = 133$ cubic feet, exclusive of previous thinnings.

By way of comparing these results with the production of one of our indigenous trees, I measured the trees on a sample plot of one-tenth of an acre—in a very uniform plantation of Scotch Pine, situated at a short distance from the Douglas Fir plantation. This Scotch Pine plantation had been established in a somewhat elevated spot, which was formerly of a swampy description. The locality must be classed as of second quality only, compared with the locality in which the Taymount Douglas Firs grow. It was drained and planted in 1847—that is, forty-one years ago—with four years old plants of Scotch Pine; it has been thinned three times, and it will again be thinned in 1889. On July 20, 1888, the area was fully stocked. Omitting all suppressed trees, the survey yielded the following results:—

Diameter of Tree at 4 feet 6 inches above the ground in inches.	Number of Trees in each Diameter—class.	Sectional Area at 4 feet 6 inches in square feet.
5	40	545
6	70	1374
7	70	1871
8	90	3142
9	100	4418
10	70	3818
11	40	2640
12	10	785
Total ...	490	18593

It will be noticed that this plantation shows a

greater sectional area per acre than the Douglas Fir plantation.

The mean height of the wood was found to be 45 feet, and from the available data it was ascertained that the volume of solid wood (3 inches diameter and upwards) amounted to 5015 cubic feet per acre. By dividing this number by 45—the total age of the trees, I obtained:—Average annual production of

solid wood = $\frac{5015}{45} = 111$ cubic feet, exclusive of

previous thinnings; or, if only the time since planting is taken into account:—Average annual production of solid wood = $\frac{5015}{41} = 122$ cubic feet.

If now we compare the average annual production of Douglas Fir and Scotch Pine, we find—Douglas Fir = 117 resp: 133, against Scotch Pine = 111 resp: 122 cubic feet; here, then, is an almost inappreciable difference, especially if it is considered that the quality of the soil in the Scotch Pine wood is decidedly inferior to that of the soil in the Douglas Fir wood. Unfortunately I had no opportunity of measuring a Larch wood in the vicinity of Taymount, but it is well known to all foresters that, up to an age of forty-five years, at any rate, Larch produces a greater volume than Scotch Pine, so that I may safely say:—“If grown in a well stocked or crowded wood and in localities of equal quality, Douglas Fir is not likely to produce more solid wood during the first thirty or forty years than the Larch, and probably also not more than Scotch Pine.”

The explanation is, that, although the individual Douglas Fir develops more rapidly in diameter and in height than a Scotch Pine or Larch, it requires, at any rate in Scotland, much more space; and consequently an acre of land will hold only a much smaller number of trees. Moreover, I shall further on show that it is more tapering than the important European Conifers.

On the other hand, the growing stock of a Douglas Fir wood consists of much larger trees (though smaller in number) than an equally old Larch or Scotch Pine wood, and this is a great advantage where big timber fetches higher prices than moderate-sized timber. This advantage will, however, to a considerable extent, disappear with advancing age, when our indigenous timber trees reach the size usually demanded in the market. *W. Schlich, Cooper's Hill.*

(To be continued.)

NEW OR NOTEWORTHY PLANTS.

CYPRIPEDIUM ELLIOTTIANUM, n. sp.

THIS species [to which reference was made by Mr. O'Brien last week], is the nearest ally of *Cypripedium Rothschildianum*. Its leaves are broader, apparently stiffer. The spikes at hand are two-flowered. Mr. G. Godseff, however, has seen them with five flowers. The primary peduncle appears to be much stronger than in the species named; it is reddish, covered with very short hairs. The fine bracts are those of *Cypripedium Rothschildianum*, but white with dark red-purple longitudinal stripes. Ovaries white with red ribs. Both sepals white with dark red longitudinal stripes. Petals longer by one-third, with dense, short, blackish cilia, undulate at the base, white, with numerous Indian-purple stripes and freckles, except at the apex. The shape of the lip is like that of *Cypripedium Stonei*, colour reddish-brown. Staminate angulate, both shanks ultimately contiguous, markedly bifid at the apex, hairy.

The best mark of distinction is the sharp bifid apical part of the staminate. I have the impression that the colours are much richer, the flowers larger, and the peduncle stronger, the leaves broader and stiffer.

This exceedingly elegant and surprising species is dedicated to Mr. Elliott, of the firm of Messrs. Young & Elliott of New York, at the suggestion of Mr. G. Godseff, who knows Mr. Sander's wishes. What a success for the firm to have imported in so short

time *Cypripedium Sanderianum*, *C. Rothschildianum*, and *C. Elliottianum*! *H. G. Rehb. f.*

CATTLEYA LABIATA WARSCEWICZII ROCHELLENSIS, *n. var.*; or, shorter, *CATTLEYA ROCHELLENSIS*.

When my good friend, the late Joseph von Warscewicz, returned from his second voyage to tropical America in November, 1853, he told me his best plant was a new *Cattleya*, bearing 5—10 flowers on one raceme, with very tall bulbs. I have in my herbarium my friend's original treasure. He complains of the impossibility of doing justice to the colours, alluding to the poorness of his colour-box. The plant was discovered in the province of Medellín, at the height of 6000—8000 feet. My forty-seven typical flowers are so well preserved that they even now show the superior disc of the lip to have a broad yellow area. The specimen introduced into the trade latterly by Director Linden, gathered by the late Benito Roezl, is, in my opinion, a sub-variety of this, having two distinct spots on the disc in lieu of the confluent ones.

My friend, Joseph von Warscewicz, declared *Cattleyas* to be the greatest treasures of his razzias. During the first journey he discovered *Cattleya Dowiana* (his *Cattleya Lawrenceana*, dedicated to his well-wisher, Mrs. Lawrence, of Ealing), and on his second journey *Cattleya Warscewiczii*. We cannot understand now-a-days, how it was possible that his imported *Cattleyas* did not flower. As to *Cattleya Lawrenceana*, I saw small plants at Berlin. Mr. Mathieu and Mr. Naner (then having his excellent head gardener, Mr. Gireoud, now of Sagon), had little pieces which, by the way, died after six or ten years. As to *Cattleya Warscewiczii*, I never heard of a living plant imported by J. de Warscewicz: hence I suppose it was lost in the Magdalena River, with so many other fine plants, the steamer having been wrecked. And now I have before me a glorious specimen from Messrs. Liebrecht & Wadley, florists and nurserymen, 409, Fifth Avenue, Rose Hill Nurseries, New Rochelle, New York, through the hands of my countryman, Professor Demcker, of Hoboken, who is so enthusiastic in spreading the love for natural history in the United States. It resembles *Cattleya Warscewiczii*, as there is a light yellow confluent hue (not two eyes) on the upper part of the disc. There is also an exceedingly light, evanescent purplish hue on the anterior disc of the lip; with these exceptions all the flower before me is snow-white. This beautiful plant attracted the admiration of all the specialists; but it disappeared from the botanical world to make a fresh *debut* in the celebrated collection of Mr. Frederick L. Ames, of North Easton, Massachusetts, where Mr. Joseph Godseff, of the Sanderian firm, was so fortunate as to see it in full flower. It is to be hoped that the stock of *Cattleya Warscewiczii* of Messrs. Liebrecht & Wadley may contain more such vestal beauties, though from a remark in one of their letters, I conclude they are not very hopeful as to this; all the better, then, for Mr. Frederick Ames, as, most probably, no collector is free from the worthy ambition of possessing some unique treasure—and this is one! *H. G. Rehb. f.*

LÆLIA EUTERPE ×, *n. hybr.*

This is a new and very beautiful hybrid, raised by Mr. Seden, and which has just flowered in the establishment of Messrs. Veitch & Sons, Chelsea, from whom I received it. It was raised from *Lælia pumila Dayana*, fertilised with the pollen of *L. crispata*, the seed having been sown in 1881. The following note has been supplied to me by Mr. Kent as to the present strength of the plant:—"Six somewhat slender stems, 2—4 inches long, monophyllous. Leaves leathery, rigid, narrow, oblong-obtuse, 6—7 inches long." The flower measures 3½ inches in expanse, the sepals narrowly lanceolate, acute; petals twice as broad, and more obtuse, somewhat crisped; all the segments of a bright rosy-lilac. Lip somewhat three-lobed, the front lobe beautifully crisped, crimson-purple, with a little white variegation, and the veins of a deeper colour than the rest, giving a brilliant effect. The side-

lobes are also deep crimson-purple at their apex, while a band of the same colour extends down the centre of the lip to the base, the rest of the lip being white, with light yellow veins. The front of the column below the stigma is crimson-purple, but the remainder of the column white. The pollen masses are eight in number, and quite equal, as would be expected from both the parents being typical *Lælias*. It is a beautiful addition to the autumn-flowering group, the very decided colouring of the lip forming a decided contrast with the lighter-coloured sepals and petals. *R. A. Rolfe.*

DENDROPHYLAX FAWCETTII, Rolfe, n. sp.

This remarkable and not less beautiful Orchid is now flowering in the Kew collection, and for the first time. Imagine a tuft of roots, long, flexuose, cylindrical, and greenish in colour, spreading in all directions from a very short tuft-like caudex, no leaves whatever, flowers 2 inches in diameter, the large bilobed lip pure white, the lanceolate acute segments of a most delicate greenish-white, and a slender pendulous spur 7 inches long, and you have the new plant; almost a counterpart of *D. funalis*, Benth. (the old *Angraecum funale*, Lindl., *Bot. Mag.*, t. 4295), except some slight differences, and the



FIG. 74.—*BEGONIA DAVISII*.

gigantic spur, three times at least as long. It was found by Mr. W. Fawcett, F.L.S., Director of the Jamaica Botanic Garden, in the Cayman Islands, West Indies, during his recent trip to investigate the disease which is destroying the Cocoa-nut Palm there. Both living and dried specimens were transmitted to Kew during the past summer. Notwithstanding its leafless condition—for the green roots do the work of assimilating nutriment—the plant has thoroughly established itself on a block, and young roots are pushing in all directions. The peduncle is but 2 inches long on this plant, but on a dried one sent home is at least 23 inches, or over ten times as long. It is hardly necessary to say that the plant is dedicated to its discoverer, with the hope that if other such novelties should be lurking in the West Indies, he will let us hear of them. Respecting this small genus there are, beside our novelty, *D. hymenantha*, Rehb. f., the original species, a native of Cuba, with flowers, including the spur, but half an inch long; *D. Lindenii*, Benth., with spur nearly as long as in our present species, but remarkably attenuated, acute lobes to the lip, a native of Cuba and Florida, in the latter locality said to grow on the stem of the Royal Palm; *D. Sallei*, Benth., a native of San Domingo; and *D. funalis*, Benth., a native of Jamaica. This latter rejoices in the following *aliases*—quite sufficient in

all conscience—*Limodorum funale*, Sw.; *Epidendrum funale*, Sw.; *Ceoclades funalis*, Lindl.; *Trichocentrum funale*, Lindl.; and *Aëranthus funalis*, Rehb. f. *R. A. Rolfe.*

TUBEROUS BEGONIAS.*

There are a good many florists' flowers cultivated in our gardens of which we do not know the origin. We may know the wild species or be able to give more or less exact "guesses at truth" in the matter, but, the exact method pursued by the earliest growers is, but too often, lost in the obscurity of the past. This is more or less true of some of the most popular garden flowers of to-day. The Tulip, the Auricula, the races of double Primroses, the Pink, the Carnation, the double, or Turban *Ranunculus*, and even double Pæonies, and double Roses, seem like Topsey, to "have grown" up into the horticultural horizon, and no one can say to-day how, why or wherefore they sprang into existence. As we have said we can put our fingers pretty correctly on their wild prototypes in some cases, but, even the wisest of us could not stand a very severe cross-examination as to when, where, and why the developments we now admire came into existence. Even among fruits, and vegetables we have in many cases quite lost sight of the original species or prototype, and the common Onion, the most cosmopolitan of all vegetables, may be cited as a case in point. Again as, in some sort analogous to the seemingly accidental or spontaneous cropping up of double flowers, we have those fruits which, like the Zante or Corinth Grape, the Sultana Raisin Grape, the Banana, and in a lesser degree the Pine-apple, and the Mangosteen are most often seedless, and so are and have for many centuries been propagated by vegetative methods, *i.e.*, by cuttings, suckers, or other methods of division rather than by seeds.

Nowadays, thanks to a more awakened interest and to improved facilities for recording newly accomplished facts, there are some flowers in our gardens, the origin of which is tolerably well known. The hybrid *Nepenthes* and Orchids, and the greenhouse *Rhododendrons* of Veitch stand out clear and definite in this connection. The florists' Pansy slipped into existence years ago in a surreptitious sort of way, and the history of its more modern race or offshoot—the tufted or bedding *Viola*—might be a great deal clearer than it really is; but it is quite a relief to think of one of the latest of all the gardener's creations, *viz.*, the tuberous *Begonia*, since we can confidently trace its origin and development during the past twenty years or more, that is, from the introduction of *B. boliviensis*, *B. Pearcei*, *B. Veitchii*, and one or two other wild species of South America, until we come down to the most recent seedling varieties of Laing and Cannell, or of Lemoine and Crousse. In a word, the tuberous *Begonias* must be numbered amongst the most remarkable products of our time, so beautiful, so variable in form, and in colour, so easily raised from seeds, and so readily to be grown to perfection without much if any artificial heat, that we do not wonder that nurserymen and amateurs alike home made a specialty of such a bright and pleasing race of florist's flowers, nor can we wonder that the proprietors of the *Gardening World* should have so promptly and so well fulfilled a public want in publishing the neat and reliable handbook now before us entitled *The Tuberous Begonia, its History and Cultivation*—a book that is likely to lend an impetus to the more extended and better cultivation of the flowers, of which it treats in detail and at considerable length. As well pointed out in its pages, these flowers possess a twofold chord of interest for amateurs, and for practical purposes may be divided into two sections, *viz.*, those best adapted for greenhouse or con-

* *The Tuberous Begonia, its History and Cultivation*, Illustrated. Edited by B. Wynne, F.R.H.S. London: Gardening World Office, 17, Catherine Street, Strand, W.C. Pp. 104 and Index. Price 1s.

servatory culture in pots, and those of bushy and floriferous habit, which lend themselves perfectly to various phases of open-air culture as planted out in beds and borders.

The work really begins with a well written introductory chapter, followed by one containing a brief sketch of the order or family to which these plants naturally belong, in which, however, we find no reference to the investigation of the nature of the tuber by M. Duchartre, nor to the monograph of the late M. Fournier in the *Journal of the National Horticultural Society of France*, and which contains much the fullest and best account of the botany of the subject. The history and morphology of the plants was also treated at length in these columns, with illustrations, on August 26, 1882. The history of the tuberous Begonia is sketched, and chapters provided dealing with propagation from seed or cuttings, cultivation in pots; on double-flowered kinds, and on Begonias for exhibition and for late autumnal flowering. The chapter on the new race of winter flowering Begonias will be read with interest, and as being both suggestive and prophetic of better things to come. Then we have a dissertation on Begonias for beds during the summer season, and valuable chapters on hybridisation and seed saving; the best form of Begonia-house, and, finally, a select list or catalogue of the very finest varieties at present in cultivation, both single and double-flowered.

The book is tolerably well illustrated with woodcuts of some of the species and varieties described, and there are good portraits of Mr. Laing, Mr. Cannell, and last, but by no means least, one of the late Mr. Richard Pearce, the Veitchian traveller and collector in Bolivia and Peru, to whose courage and ability the introduction of most of the original types was due, and whose name will be ever green in the memory of all who grow such other of his introductions *Lapageria alba*, *Hippeastrum Leopoldi*, and *H. pardinum*. The sudden death of Mr. Pearce was a loss to British horticulture, and one more addition to that army of martyrs to science and duty, who have sprung from the ranks of the gardening fraternity. It is most interesting to know that all these varieties of hybrid and cross-bred Begonias, now so numerous, so varied and so beautiful, are the descendants of six wild species, all introduced in the following order from Peru and Bolivia, where they grow at a considerable elevation above the sea.

1. *B. boliviensis* was the first of the whole group discovered by the late Richard Pearce in Bolivia, and sent to Chelsea by him in 1864. In 1867 it was figured and described in the *Botanical Magazine*, t. 5657, as "a tuberous-rooted deciduous kind, attaining an average height of 2 feet." Its stems were fleshy, but rather slender, the leaves rather small and deflected, with serrate margins, and its vermilion-red flowers were pendulous from the axils of the ascending stem. Our illustration (fig. 75, p. 536), shows the natural size of leaf and flowers. Curiously enough the plant seems to have disappeared from cultivation.

2. *B. Pearcei* was introduced in 1865, having previously been collected at La Paz in Bolivia by its discoverer, after whom it is most appropriately named. It is a plant of dwarf habit, having dark blotched leaves of a rich velvet-like green tint, and pure yellow flowers about an inch or more across. It is figured in the *Botanical Magazine*, t. 5643, and its marked characters of leafage and colour of flower are as a rule very easily detected in its progeny of to-day.

3. *B. Veitchii*, a bold and distinct plant, also found by Mr. Pearce, was introduced in 1867, and it was figured in the *Botanical Magazine*, t. 5663, where its habit is said to be that of "*Saxifraga ciliata*, and immense flowers of a vivid cinnabar-red that no colourist can produce." This plant was found growing near Cuzco in Peru, at an elevation of 12,500 feet. It is a bold and effective plant, even in its original state, being moreover quite hardy in many localities in England and Ireland, and although now surpassed by some of its seminal descendants one can

never forget that it is to this species that most of their superior qualities are due. Our illustration (fig. 76, p. 536), shows a male and a female flowers of *B. Veitchii* of the natural size.

4. *B. roseiflora*.—Another Andean species, found at an altitude of 12,000 feet, introduced by Messrs. Veitch to Chelsea, where it bloomed in 1867. It has orbicular fleshy leaves, similar to those of *B. Veitchii*, and two to three-flowered scapes of pale rosy flowers about 2 inches in diameter. It has been of far less moment than its ally, *B. Veitchii*, as a parent, but to its paler flowered varieties we are indebted for the Queen of Whites of 1878, and for *rosea superba*, a variety sent out in 1880. *B. roseiflora* is figured in the *Botanical Magazine*, t. 5680.

5. *B. Davisii* (fig. 74).—Another remarkable Veitchian introduction from Peru discovered by Mr. Walter Davis, near Chupe, at an elevation of 10,000 feet. It first flowered at Chelsea in 1876, and was distributed in 1879. This is a distinct species of dwarf and compact habit, its leaves being tufted, and from among them its erect scapes rise to a height of 6 to 9 inches, each bearing three flowers of a brilliant orange-scarlet colour. By crossing the progeny of *B. Veitchii* and *B. boliviensis* with *B. Davisii*, some remarkably brilliant tinted forms have been derived of both the single and the double blossomed types. *B. Davisii* is figured in the *Botanical Magazine*, at t. 6252.

6. *B. Clarkei*.—This plant somewhat resembles *B. Veitchii*, and, like it, is supposed to have come from Peru, but it is very much less hardy—a fact which suggests the possibility of its naturally growing at a lower altitude. It first flowered with Colonel Trevor Clarke, at Welton Place, Daventry, he having previously received it from Messrs. E. G. Henderson & Sons. Growing 2 feet in height, it bears flowers of a bright rosy-red colour 2 inches or more in diameter, and its leaves are 6 or 8 inches across, and of a dull green colour. Like *B. roseiflora* it has been but very slightly employed by the hybridisers. It is figured in the *Botanical Magazine*, t. 5675. There are two other species, both with great potentialities as winter bloomers, viz., *B. Frœbelii* and *B. socotrana*, and as such deserving of notice. Messrs. Veitch have a series of hybrids from *B. Frœbelii*, whilst Mr. John Heal has succeeded in rearing a variety of considerable merit which bears his name, by crossing the female flowers of *B. socotrana* (a species introduced from Socotra by Professor Balfour), see fig. 77, with the pollen of a hybrid named Viscountess Doneraile. This (John Heal) is one of the most remarkable of all the hybrids produced since Mr. Seden raised the original hybrid *B. Sedeni* in 1869 or 1870. Viscountess Doneraile was raised between *B. Monarch* (= *B. Sedeni* × *B. intermedia*) and *B. Sedeni* (= *B. boliviensis* × species?) so that John Heal contains within itself the characteristic of *B. socotrana* (section *Augustia*), *B. Sedeni* (section *Barya*), and *Monarch* (section *Huszia*). It is a dwarf habit plant, and botanically interesting as its paniculate inflorescence produces rosy crimson male flowers only. Since John Heal was raised Messrs. Veitch have brought forward two other hybrids, viz., *Adonis* with rose-coloured flowers, and *Winter Gem*, and as these begin blooming in October and November, and continue during a great part of the winter it is now possible to enjoy the flowers of one or other of the sections of the tuberous Begonia all the year round.

One might say much more as to the peculiar merits, and especially as to the botanical peculiarities of these flowers, as developed by their prime introducers, Messrs. Veitch, and by such noted raisers as Messrs. Laing and Cannell, but for the present we must refer our readers to the book itself, as the most complete and reliable epitome of all that is practically known to-day of the now popular tuberous-rooted section of the genus *Begonia*.

MELONS.—Alphonse Karr owns to a weakness for Melons, but has not yet experienced the fate of Pope Paul, who died one morning after having eaten two large Melons for supper the night before. The Emperor Albert of Austria in 1459, according to the same authority, died from eating too freely of Melon.

ORCHID NOTES AND GLEANINGS.

ORCHIDS AT GHYLLBANK, ST. HELENS.

WHETHER the ecclesiastical looking edifice devoted to the manufacture of Beecham's pills has a benign influence on and acts as an antidote to the poison ejected into the air of St. Helens from hundreds of tall chimnies of copper, glass, and other factories which abound in the neighbourhood is not yet proved, but certain is it that the collection of Orchids which W. J. Thomson, Esq., has got together in that smoke-laden district does not seem in the least to resent the unpleasant state of things in the atmosphere around them. Assiduous care on the part of the enthusiastic owner and his careful gardener may have doubtless much to do with the good condition of the plants, but still no more pointed instance could be found anywhere of the adaptability of these plants for growing in unwholesome surroundings, such as are found at St. Helens. Good showy things are appreciated at Ghyllbank, and in its houses handsome representatives of the showy *Cattleyas*, *Lælias*, *Odontoglossums*, &c., are to be found, but here also find a home a large number of interesting things, such as *Cirrhopetalums*, *Sarcanthus*, *Epidendrum*, and others usually denominated botanical curiosities, but which somehow or other never fail to attract a large amount of attention when in bloom. A glance at the plants now in bloom will serve as a sample of the constantly changing display to be found here. We may notice, first, a giant plant of the graceful *Cymbidium elegans*, with ten flower-spikes; then a *C. Lowianum* to match, sending up its spikes beside it; beside these were some pans of *Pleione lagenaria* and *P. maculata*, with over fifty expanded flowers on each; some fine *Lælia præstans*, a magnificent Swan Orchid (*Cynoches chlorochilon*), the pretty *Catastium roseo-album*, and overhead the pretty *Ionopsis utricularioides*, with its graceful sprays of lilac and white flowers; and the neat little *Leptotes bicolor*. Some rare and curious *Polystachyas*, too, were in bloom, some well flowered *Oncidium unguiculatum*, a noble example of *Odontoglossum Uro-Skinneri*, and the singular *Epidendrum umbellatum*, with its large greenish-white flowers and fleshy leaves arranged like a large green *Nanodes*.

The collection contains many rare *Angræcums*, and in the East Indian-house a plant of the handsome ivory-white *A. Chailluianum* had three fine sprays of ten flowers each; and the pretty *A. pestusum*, and the curious *A. ichneumonum* were in bloom. In the same house were *Phalænopsis Sanderiana*, *P. Lowi*, *P. cornu-cervi*, and *P. Schroderiana*, and a magnificently bloomed lot of *Eucharis amazonica*, which arranged well with the Orchids.

The *Cattleyas* and *Lælias* are very stout, healthy, and well sheathed for bloom. Some nice plants of the pretty and fragrant *C. luteola* were in flower, and also good examples of *C. Eldorado*, a species which when grown well forms a handsome plant.

The *Odontoglossum*-house contained representatives of most of the good things called cold-house plants, and some were in bloom; while in flower in other houses were the true *Paphinia grandis* with disproportionately large crimson and white flowers, considering the small size of the plant; *Vanda cœrulea*, *Galeandra Baueri*, *Dendrobium sanguinolentum*, *Restrepia antennifera*, *Miltonia Moreliana*, *M. candida*, *Epidendrum vitellinum*, &c.

Among the collection of choice *Cypripediums* in flower were large plants of *C. Sedeni*, *C. S. candidulum*, *C. Spicerianum*, *C. Leeannum*, *C. calurum*, *C. Argus*, *C. Pearcei*, &c.

In a district devoted almost solely to business, Ghyllbank and its Orchids make a bright spot, the pleasure of which can only be known to their genial owner and his friends.

CATTELEYA BOWRINGIANA.

This lovely Orchid will no doubt in the near future be extensively grown, flowering as it does when

Cattleya flowers are scarcest. Several plants of it have been in great beauty in our collection for the past three weeks; and among them are three distinct varieties, varying from light rose to a deep rosy-purple, not unlike a good dark form of Cattleya Skinneri. It is a very free-flowering species, and we have at the present time as many as sixteen flowers on a spike. *Erin.*

LÆLIA ANCEPS.

"The range of *Lælia anceps* extends in the State of Vera Cruz on the Atlantic coast from Jalapa, its northern limit, to Orizaba southwards. It grows on the eastern side of the Cordilleras, and is most abundant in the neighbourhood of Cordova. Leaving these districts it is not found again until, in a southerly direction, the Pacific coast is reached. The original localities for this *Lælia* are on the Atlantic coast, and in those the typical form prevails. It is from the Pacific side that the numerous white varieties recently discovered and imported have come.

Generally this *Lælia* is found growing on trees on the outskirts of virgin forests, but occasionally on rocks fully exposed to sun and air. The plants cling to the rocks by means of their roots, and these are nourished by decayed moss and detritus. Wherever the plants grow fully exposed their bulbs and leaves assume a ruddy tinge, while those in partial shade are green, and do not flower so abundantly. The climate of this part of Mexico is peculiar. There is a distinct rainy season extending from May to October. During this period the plants are drenched daily with rains for several hours, and throughout the night are thoroughly saturated. Early in the morning a cold, drying wind blows and dries the plants, which afterwards are fully exposed to the fierce sun, until the daily storm drenches them afresh. After the rainy season has ceased (in November) the plants flower, and the new growths formed during the rainy season are fully developed, and become firm or ripened. Now the plants owing to the dryness, are at rest, but about the end of February the new bulbs begin to show signs of activity by sending out roots, and these are encouraged by the "short rainy season" which occurs about that time. But the rain then is only like fine mist, and does not saturate the plants; and this goes on until the return of the long rainy season. The new bulbs begin to form about March, and are well advanced before the heavy rains come. These are the main points in the observations gathered from collectors, and from them growers may glean hints as to the treatment of *Lælia anceps*, though, of course, due allowance must always be made for the artificial conditions under which Orchids are cultivated in Europe, and the wide difference in the power of a Mexican sun and clear atmosphere. It would be difficult to imitate closely the natural conditions, but the main principles of cultural treatment may be founded upon the climatic peculiarities of their native habitats." *Sander's "Reichenbachia."*

WALL FRUIT-TREE BORDERS.

THESE, when skirting the fruit-walls, are almost invariably made far too narrow. The object of a specially made border for our fruit trees is that it should be a better place for the growth of the trees, and the ripening of wood and fruit, than could be found in the unsheltered border away from the wall. For this purpose it should be made from 1½ to 2 feet higher next to the wall than the rest of the surrounding ground; this admits not only of an increase in the depth of soil, but it renders the border warmer, and if the drainage of the garden generally is good, such a border is also drier than the rest of the soil. I should always advocate the laying in of rubble drains, V-shaped at the bottom, at a depth from the surface of 4 feet, in lines 25 feet apart, running crosswise of the border, and emptying into a pipe-drain under the walk. The draining of fruit borders should not end with the south border, but should extend to all

aspects; the northern one especially should be well done, as here the evaporation is less than elsewhere, and this border, as a place for late Cherries, Plums and Pears, bush fruits, Strawberries, salads and other vegetables, renders it almost as important as the south border, but in a retarding in contradistinction to a hastening sense.

Where space allows of its being done, the whole of the fruit borders should measure from front to back 20 feet, and the south border might be advantageously of 36 feet, with a rise of 2 feet from the walk; and to give sufficient space to train the trees this wall should be built so much higher than the others. The space reserved for the trees on any border should not be less than 7 feet, and for Pear trees on the Pear stock it should be more than that. This part of the border should be level, not sloping, like the rest, otherwise, owing to the trampling of the soil in attending to the trees the rain would run off and the trees suffer from want of water at the root especially near the wall itself, thereby entailing much labour in watering if the trees are to be kept in health.

To prevent the encroachment of the cropped part of the border on the tree portion of it, it is always best to plant a line of Violets, alpine Strawberries, Hepaticas, Polyanthus, or any low-growing perennial plant. This line serves as a hint to the most ignorant gardener-labourer that digging ended there. All roots found outside of this fence should be cut off annually, for if allowed to get into the richly manured cropping ground, strong growth and its usual concomitant unfruitfulness are certain to result. The trampling of the soil of the fruit tree border above alluded to, which occasions a hard and usually an impervious crust, could be averted in great measure by placing a line of close trellis—say, 1½ foot wide—or else broad rough hard-wood slabs on the soil on which to walk, and then with slight mulching of horse-dung (on the south border only), and a very slight pricking up of the soil in the month of April, and one again in July or August, a border made as described would be so genial a medium for the roots of fruit trees, that in only the worst of subsoils would it be thought necessary to put in impervious bottoms of concrete, rubble, coal-ashes, or stone slabs, beneath the trees, and there would be, moreover, not any fear that the soil would become either waterlogged or too dry. As a site for pushing forward early crops there is no better place than a warm, deep border, facing south, and having a slope that increases the angle at which the sun's rays impinge upon it. *F. M.*

FRUIT REGISTER.

P E A R S.

I NOTICE that Doyenné Boussoch is favourably spoken of by Mr. Ward, but its good looks are about its only recommendation, and it is to be hoped that sorts having real quality and high flavour will take their proper place at exhibitions, and be placed before such as have mere size and showy appearance to gain the awards. Beurré d'Amanlis is more passable than the one just referred to, but that is not first-rate, and as it comes in at the same time as Beurré Superfin and Fondante d'Automne, it is far better to grow these in its place. What is wanted is a much abridged list of varieties, and no garden, however large, need have more than twelve or fifteen sorts; and if these are judiciously selected they will give more satisfaction than any collection. My selection would be as follows, taking them in the order of ripening:—First, Williams' Bon Chrétien, Fondante d'Automne, Beurré Superfin, Marie Louise, Doyenné du Comice, Glou Morceau, Winter Nellis, Josephine de Malines, Bergamot Esperen, Beurré Rance. Glou Morceau requires a good situation to grow it really well, but in favourable soils or districts it succeeds admirably on the Quince, coming quite clear in the skin without any cracking. Bergamot Esperen and Beurré Rance also need warm aspects, and should

be left on the trees as long as they will hang, as that makes a great difference to their finish and keeping. *J. Sheppard, Ipswich.*

PEAR MADAME TREVE.

At Mereworth Castle, Kent, this deliciously-flavoured free-bearing Pear generally ripens from the middle to the end of September. The fruits when ripe are not, however, as handsome in colour as many other things, being of a somewhat greenish yellow on the shaded side, but on the side next the sun frequently the fruit becomes a bright crimson colour, marked with numerous russet dots. It is one of the most reliable kinds we grow, and bears annually marvellous crops of good-sized fruits, clean in the skin and of good shape. In its slightly perfumed flavour there is something extremely pleasant to the taste, which differs considerably from that found in other Pears. The flesh is almost white, free of grit, full of juice, and with but very small core, and in its season keeps as well as any other Pear which ripens about the same time.

PEAR TRIOMPHÉ DE VIENNE.

This is another fine prolific variety, and of remarkably good quality, ripening about the same time as the above sort. Mr. Bunyard, in his Fruit Catalogue, mentions that this is a new variety. It is of great excellence, and our standard trees have borne good crops for three years running. The fruit is of a russetty brown, large, and handsome in colour. The flesh is rather gritty, but it is very rich and melting, I do not find the flavour of any Pear or Peach this season equal to what it was in the last. *H. Markham, Mereworth Castle.*

GOLDEN EAGLE PEACH.

In many establishments where Peaches are in demand late ones are as much appreciated as early ones. As this is the case here I have been to some trouble and expense to find the best varieties, and enclose you samples gathered this day from a tree carrying seven dozen handsome fruit. Your impartial opinion as to quality will afford the best guarantee. It will be sufficient for me to say that we have fruited Golden Eagle for three years, and it has been highly satisfactory. Grown in a late Peach-house and started naturally it makes a good succession to Walburton Admirable, and Princess of Wales. I am not much in favour of yellow-flesh Peaches, but as this is so useful I cannot despise it. Owing to the severe weather we have used a little fire-heat this year. The tree is not a gross growing variety, but medium, rather Willow-like shoots, quite free from mildew or fly. I enclose samples of Apricots also, as a novelty; we have been gathering a long time. When put in a warm place for a few days they make an uncommon dish of dessert of fair quality. *J. H. Goodacre.* [The Golden Eagle is a fine showy fruit, but of indifferent flavour. The matter of flavour is doubtless due to want of sun-heat and light and free ventilation—all unprocurable things during an English October. Ed.]

ROSES.

TEA AND NOISETTE ROSES.

"WILD ROSE" does good service in combating the mischievous superstition that the Tea-scented Roses are too tender for general cultivation in this country. There may be some few bleak situations in the Midlands where the plants require considerable protection in winter, but there is abundant proof that north, south, east, and west these most beautiful of all Roses may be successfully grown upon the native Brier seedling or cutting stock, and in all probability their culture on their own roots is destined to become considerably extended.

Whether "Wild Rose" has got the true reason for the failure of the Tea-scented Roses upon the Manetti stock seems doubtful, because *Rosa multiflora*, which grows just as early in the season as Manetti, and is even more vigorous, makes an

excellent stock for Teas. At any rate, another possible explanation might be, that the Manetti as a stock is short-lived, and unquestionably in many soils and situations perishes after two or three years; many hybrid perpetuals budded on it appear to thrive continuously because in that time they are able to establish themselves upon their own roots and are independent of the stock; but the Tea-scented Roses, not so readily converting themselves into own-root plants, must needs perish with the stock.

Perhaps, however, the difficulty arises from some inherent lack of sympathy between stock and scion, just as some fruit trees will grow on certain stocks for a year or two, and then fail altogether, although it is not at all apparent outwardly in what way the stock on which failure ensues is less well adapted to the scion than the stock, which eventually becomes the supporter of a continuously fertile tree. The point is one which, in all probability, must remain a matter of speculation, since nobody any longer grows Teas on Manetti, and therefore direct observation is impracticable.

The importance of keeping the essential qualities of vigour and a good constitution prominently in view in making a selection of varieties for a small collection cannot well be over-estimated, but considering that Jean Ducher possesses these qualities in a marked degree, that it is a most free and perpetual bloomer, large and constant in form, and that for the last half-dozen years it has always been one of the most prominent and magnificent of its class; until, in fact, the past season, when practically none of the Teas except Madame Lambard were seen to conspicuous advantage—it might have been thought that "Wild Rose" would have found it in his heart to include it even in the most select list, especially when it is seen that he recommends so difficult an opener as Etoile de Lyon, such a victim to mildew as Madame Cusin, and two such moderate growers as Souvenir de Paul Neron and Sunset.

Etoile de Lyon is a very beautiful Rose when at its best, and the habit and striking red foliage of the plant render it attractive even when not in flower, until mildew, to which the variety unluckily is prone, appears; and there is little question that it is also the finest yellow Rose next to Maréchal Niel for cultivation under glass. But out-of-doors, although a careful cultivator will get a fair number of good blooms during the season, he will find that they take a considerable amount of "getting"; and many are the complaints of growers as to the number of unopened buds that are liable to disfigure the plants. The petals are very numerous and very thin, so that in case of wet they stick together, and it is probably the fact that the variety is one of those for which our climate is not sufficiently hot and dry. If a poll could be taken of growers who have cultivated both Jean Ducher and Etoile de Lyon, say for three years, as to which of the two they would discard if it were necessary to give-up either, it would probably be a very safe prophecy to make, that it would not be Jean Ducher that would be dismissed.

"Wild Rose" says he writes for beginners, but as many people begin Rose-growing with a view to exhibiting, it will at all events be as well to point out that for many years Jean Ducher has never failed to be among the twelve Teas most frequently exhibited with success (in several seasons being almost at the top of the list), a distinction attained but once by Etoile de Lyon, which, as a general rule, is exhibited successfully just about half as often as Jean Ducher.

The flowers of Madame Cusin are very beautiful when grown under glass, but out-of-doors the colour is not always so pleasing, the foliage is small and insignificant, and the plant, not over-vigorous or free at any time, gets smothered with mildew. It might well be replaced in a small collection by Ethel Brownlow, a flower somewhat similar in form, but more pleasing in colour, a handsome plant, resisting mildew, and an exceedingly free and perpetual bloomer.

Etoile de Lyon might be replaced by the strangely neglected Amazone, which is invaluable either for

exhibition or for cutting in all seasons; some cultivators have called it thin, but when it is generously grown it is certainly not so, and it is one of the richest of all the yellows, giving exceptionally fine flowers in autumn.

Souvenir de Paul Neron, one of the loveliest of all Roses, is certainly not a good furnishing plant, the leaves being small, and set at long intervals upon the stem, while it is the experience of many rosarians that it is a slender grower, and very difficult to get the blooms of any size. There is no Rose exactly of its colour or character to take its place, but for freedom and constancy a useful substitute might be found in the charming Souvenir de Gabrielle Drevet, which is quite ever-blooming and always attractive in form and colour.

If "Wild Rose's" beginner be an intending exhibitor he will do well to avoid Sunset, and instead to plant Francisca Krüger, a beautiful Rose, somewhat analogous in its shades of orange and coppery-yellow, most constant in form, and a vigorous grower, flowering freely early and late. If only buds for

is vigorous and most handsome, clothed with abundant foliage which is almost evergreen, and it is a most reliable autumnal; the flowers, produced in the utmost profusion, are unique in form and colour, approaching more nearly than any other Rose to that of burnished copper, lighted with touches of nankeen-yellow and apricot. In fact, Ophirie is almost an ideal pillar Rose, the growth not being inordinately long, being always a dense mass of foliage, which, resisting mildew, continues green and bright, while the plant produces its trusses of charming flowers until cut off by winter frosts.

Whatever varieties may be planted, however, there is no question that Tea-scented Roses should be cultivated everywhere. They are essentially the universal Roses; they will grow on hot gravelly soils where other Roses will scarcely live through a year; magnificent plants may be seen in the deep sandy peat where Rhododendrons luxuriate, but where the most careful cultivation of hybrid perpetuals results only in comparative failure; and yet all they want to thrive in perfection on strong heavy



FIG. 75.—*BEGONIA BOLIVIENSIS*: FLOWERS SCARLET.



FIG. 76.—*BEGONIA VEITCHII*: FLOWERS RED.

(THE PROGENITORS OF THE TUBEROUS BEGONIA. SEE P. 534.)

bouquets or cutting be wanted Madame Charles is more beautiful in colour than Sunset, whose chief value is as an early forcing Rose to supply abundant buds for buttonhole bouquets soon after Christmas.

There is one other Tea which may confidently be recommended as a good grower, producing both in summer and autumn consistently fine flowers of pleasing flesh-colour with yellow and rosy tints: it is called Comtesse de Panisse, and is not nearly so much grown as it deserves.

That in his selection of the six best climbers, "Wild Rose" should include Madame Eugène Verdier is a cause of surprise, for beautiful and distinct as is the rich chamois-yellow colour of this Rose, yet the growth is not particularly free or vigorous for its class; it gets badly cut back in the winter by frost; the few flowers do not open until extraordinarily late in the season; and, in spite of the cultivation of about a dozen plants ever since the variety was sent out—that is to say, for five or six years—I have not yet obtained a first-rate bloom, nor seen one at an exhibition, nor in anyone else's garden. As far as my experience of it goes, this variety has one recommendation only—that of distinctness of colour. On the other hand, why should not the beautiful Ophirie be recommended for universal cultivation? The plant

land is to have it well drained, in order that their roots may not lie wet in winter. Under these circumstances let everyone be enjoined to plant Teas—the best varieties if possible, on seedling Brier stocks if possible (at any rate, to begin with), in a good situation and soil if possible—but, any way, "plant Teas!" *Thetis*.

CHISWICK.

The latter part of your leading article last week brings under the attention of the horticultural world a question of vital moment to the Royal Horticultural Society, the solution of which cannot be for a moment deferred—I mean the future destiny of the Chiswick garden.

It is impossible, however, to plunge into the discussion of this matter without ascertaining, by a reference to the past, the present actual position of affairs. For many years past the primary element in the work of the Chiswick garden has been the supply of decorative plants for the conservatory and grounds at South Kensington. I do not mean to say that its proper functions have been altogether neglected, and it is to the credit of Mr. Barron that every year much useful work has

actually been done. But it has been in great measure subsidiary to the decorative work, which, of course, has been neither useful nor interesting to horticulturists generally. All this has, however, come to an end, and there is now no administrative obstacle in the way of devoting Chiswick to any purpose by which the interests proper of horticulture may be served.

The present is undoubtedly the proper time to approach the question. The past year has been in every way a critical one in the fortunes of the Society. It had to start in new quarters, and on lines which were necessarily largely experimental and tentative. It had to face a large defection of its members, and it was sorely hampered with debt. By the self-sacrificing exertions of a number of gen-

into, but the problem, as a whole, has not been faced.

But the time has now arrived when this must be done, if it is ever to be done at all. My object, then is to raise a discussion of the whole subject. I dare say it will be thought that I ought in the first place to communicate my views to my fellow-members of Council rather than to your columns. But this is a matter in which the Council can only act as our executive. It must look to the general body of Fellows and to the horticultural world to decide the policy which in the future is to be pursued in the management of the Chiswick garden.

What that policy should be I myself have very little doubt. Probably, however, my own views will

tions, should be treated as the natural complement of Kew. Very likely this suggestion will at once provoke an outcry. Very well; but let us examine it a little more in detail.

I do not know how it is with other people, but I myself always feel, when I visit Chiswick, impressed with its extreme dulness. There is the great vinery, of course, and when the Grapes are ripe in the autumn this is a beautiful spectacle. Then there are the pyramid fruit trees, and the trials which happen to be going on. But all these are very soon inspected, and the eye searches in vain in going round the garden for anything to excite and stimulate interest.

How is this to be remedied? It seems to me that if, instead of the botanical collections which we have at Kew, an attempt were made to get up horticultural collections, a great deal that would be extremely novel and interesting to visitors might be shown in a very small space. For example, two years ago we grew a collection of Gourds at Kew, from seeds obligingly given us by Mr. Barr. It was quite remarkable how much interest they excited. At Berlin, I am told, there is a Gourd garden which is very much admired. Why, then, should not a standard collection of every distinct kind of Gourd be grown every year at Chiswick? And if Gourds, why not other kinds of vegetables? My plan would involve their growing in a scientific way with proper labels all the distinct sorts of vegetables described in Vilmorin-Andrieux's *Les Plantes Potagères*. And I would go farther; with the horticultural resources of Chiswick there should be no difficulty in growing all the odd plants in Pailleux and Bois' *Le Potager d'un curieux*. This is what I mean by making Chiswick a horticultural Kew. I would make it the home of every sort of vegetable to be found in European gardens. I am sure if intelligently carried out that the plan would be found both interesting and useful. I should like to see it carried out at Kew, if it were possible; but then it is not possible.

The annual trials of vegetables [and flowers] should of course be continued; and nothing could be better than the astonishing collection of Tomatos which Mr. Barron has so successfully cultivated this year. But the results of these trials should be promptly published in the *Journal* of the Society.

Another department which I would develop at Chiswick is that of herbaceous plants. We grow at Kew an enormous collection arranged in systematic order for convenient access. We are often told that the general effect is unsatisfactory. I cannot help that. It is not contemplated that it should be otherwise. At Chiswick this might, however, be managed. The best herbaceous plants might be grown, so as to show them to the greatest possible advantage. Again, in the case of those which have been long known in gardens and have broken away into numerous varieties, it is impossible for us at Kew to grow more than a few select kinds. But at Chiswick from time to time collections might be got together—say, one year of Pæonies, another of Irises, a third of Larkspurs, and so on. At Kew, moreover, although we take great pains with our herbaceous department, we do not always find it either practicable or desirable to represent every given species by its best horticultural form. This need, however, present no difficulty at Chiswick. The division of labour between the two establishments is obvious; taking the same subject, one would represent its botanical, its other the horticultural aspect.

Chiswick has not now sufficient space to do much in the way of hardy shrubs; still it might do something with the best. And with its large area of glass it might show in the way of greenhouse plants everything that was new and fresh of purely horticultural interest. The Fellows ought to be able to see from time to time what is valuable, interesting and novel; they should have, in fact, a standard permanently put before them on which they could rely.

As to fruit, I have little to suggest, except to maintain and expand the existing collection. All



FIG. 77.—*BEGONIA SOCOTRANA*; FLOWERS PINK, (SEE P. 534.)

tlemen, some on the Council and some off it, the Society has been pulled through. Its work has been kept going in the new quarters, its debt has been paid off, and it has received a large accession of new members. I do not pretend that all its arrangements are still everything that can be desired—no doubt they are not so; but I challenge any fair-minded man, looking at the retrospect of the year's work, to say how any better result could have been attained in the time.

With the continuous work in the virtual reconstruction of the Society which the Council has had before it, its meetings often lasting three hours at a stretch, it was practically impossible that the Chiswick problem could be radically dealt with. It has not been neglected; on the contrary, a vast amount of detailed administration has been gone

not command universal consent—in horticulture, I observe, that the views of any one person very seldom do. Still, I propose to state them in order that they may, if possible, elicit something better. For be it observed what is wanted at the present moment is a policy; and if one can be framed, which will command the general assent of horticulturists, and be in its essential features horticultural, I for my part am quite prepared to accept it.

My own policy, then, is for the Society to make Chiswick a horticultural Kew. The latter establishment is, by virtue of the conditions enforced by the House of Commons when the Royal Gardens became national, treated throughout from a botanical point of view. There are large branches of horticulture which are, therefore, altogether excluded from its scope. Chiswick, in my view, in position and func-

odd and out-of-the-way fruits should be got together and grown, so that the Fellows might know of some one place where they may certainly count upon seeing all that they may happen to hear of.

The old orchard-house collection seems to have disappeared. I rather regret this. It was always a very pretty sight, and the recent Conference showed that in a year like the past it is only under glass that many of our hardy fruits show the utmost they are capable of.

But besides growing a standard named collection, there should be illustrations of every kind of experimental treatment. The advantage of different kinds of stocks should be shown to the eye as well as the merits of different methods of training and grafting.

I am afraid this letter has run to an inordinate length, and yet I have by no means exhausted all the suggestions that occur to me. Throughout the summer I would have "Chiswick days"—not shows, but days when particular features of the garden work were in their most interesting stage, and at their best. To these the Fellows should be summoned by post-card, so that they might have the opportunity of having their attention pointedly called to the work that was going on. Eventually, I should like to see a handy Guidebook, giving a brief account of the most interesting features of the garden.

If Chiswick were energetically worked in the spirit which I have indicated in these remarks, and made a really living thing, I cannot doubt that it would become an extremely interesting place, in its way as attractive as Kew. When I say make it a horticultural Kew, I mean make it a place where there is something to see which would give a definite impression of intelligible work being carried on. *W. T. Thiselton Dyer.*

THE WHEAT CROP OF 1888.

IN estimating the produce of the Wheat crop of the United Kingdom last year, I adopted without modification the indication of the usual selected plots in the experimental field at Rothamsted; observing, however, that the figure so arrived at probably under rather than over-estimated the crop of the country. The yield so indicated was 28½ bushels per acre, at the standard weight of 61 lb. per bushel; and as compared with the requirements estimated on that basis, the actual nett imports within the harvest-year showed a deficiency which is too great to be explained by the reduction of stocks in the granaries, and, in the hands of farmers, there can be little doubt that the yield of the country was in fact higher than was assumed according to the estimate adopted.

The Wheat crop of the present year, which has hardly yet been secured over the whole of the British Islands, was at one time supposed by some to promise to be one of the worst of the present century, and probably as bad as that of 1879. Very little consideration of the characters of the two seasons is, however, sufficient to show that the year just past was much more favourable to the Wheat crop than that of 1878–9.

First, as to the rainfall. Taking the records of Greenwich in illustration, there was, during the harvest-year, September 1, 1878, to August 31, 1879, an excess of rain in every month, excepting October, December, and March, and there was also an excess in September, 1879; the total excess for the harvest-year amounting to about 10 inches, and compared with the season just past there was a considerable excess in January, February, April, May and again in the harvest months of August and September. Further, whilst the harvest-year 1878–9 commenced with a wet soil, that of 1887–8 commenced with the soil in a very dry condition, owing to the drought of the previous summer; and notwithstanding there was an excess of rain in March, 1888—when, indeed, it was much wanted—there was, taking the whole period up to nearly the end of June, so great a deficiency compared with the average that fears were entertained that there would be a deficient supply of water both in the country districts and in some of our large towns. In June, July, and August, there was, however, a considerable excess of rain, and it was during this period that so much

anxiety as to our cereal crops prevailed. At Rothamsted there was a very heavy thunderstorm on June 26, which gave more than 3 inches of rain in a few hours; and there were heavy thunder-showers about the same time in other localities. In July there was more or less fall almost every day of the month; whilst in August there was again a considerable excess. As to temperature, both seasons were below the average almost throughout the harvest year. The winter months of November, December, and January showed much lower mean temperatures in 1878–9 than in 1887–8; but February and March were upon the whole colder in 1888 than in 1879. April, May, and June were, however, on the average warmer in 1888 than in 1879. Whilst, therefore, the mean temperature was below the average in both seasons, both in the winter and the summer, not only was it not so low during the growing months of 1888 as in those of 1879; but there was a very great difference in the rainfall of the two seasons; for whilst in 1878–9 there was a great excess of rain throughout the winter, spring, summer, and autumn, there was in the season just past a considerable deficiency throughout the winter and spring, and only an excess in June, July, and part of August, September again being upon the whole a dry month. The great influence on the subsequent growth of Wheat, of the weather before the period of active aboveground growth, was clearly illustrated in our paper on "Our Climate and our Wheat Crops" in the case of the season of 1854. The summer of that year was comparatively cold and sunless, yet the Wheat crop was one of the best of the present century. The early winter had been unusually cold, but the remainder and the early spring were warmer than the average, and the season was extremely dry from seed time to harvest, the mild spring and the dryness obviously compensating for the deficiency of temperature during the summer months.

The following table gives the produce of Wheat in 1888 on selected plots in the experimental field at Rothamsted, which has now grown the crop for forty-five years in succession. The plots are the same as to description and quantities of manure applied as have been adopted in the estimates of the yield of the country at large from 1852 up to the present time.

Harvest.	Unmanured, Plot 3.	Farmyard Manure Plot 2.	Artificial Manures.		Mean of Plots 7, 8, and 9 (or 16).	Mean of Plots 3, 2, and 1, 8, 9 (or 16).
			Plot 7.	Plot 8.		
				(9, 18, or 16).		
Bushels of Dressed Grain per Acre.						
Present year, 1888	10	38	35½	35½	35	27½
Average 10 years, 1878–87	12	32½	31½	36	34½	26½
Average 26 years, 1852–77	13½	31½	33½	36½	35½	27½
Average 36 years, 1852–87	13	33½	32½	36½	35½	27½
Weight per Bushel of Dressed Grain in Pounds.						
Present year, 1888	58½	60	59½	59½	59	59½
Average 10 years, 1878–87	58½	60½	60½	60½	60½	60½
Average 26 years, 1852–77	57½	60½	59½	59½	59	59
Average 36 years, 1852–87	58½	60½	59½	59½	59½	59½
Total Straw, Chaff, &c., per Acre, Cwt.						
Present year, 1888	8	36	32½	37½	35½	26
Average 10 years, 1878–87	8½	29½	32½	41½	42½	26½
Average 26 years, 1852–77	11½	3½	33½	39½	41½	27½
Average 36 years, 1852–87	11	31½	33½	41½	38½	27

* Equal to 26½ bushels, at 61 lb. per bushel.

† Equal to 26 bushels, at 61 lb. per bushel.

‡ Equal to 26½ bushels, at 61 lb. per bushel.

§ Equal to 26½ bushels, at 61 lb. per bushel.

An examination of the figures shows that, again this year, there is marked deviation from the average produce on the different plots, and that the variation is in different directions, according to the conditions of manuring; and, perhaps, there has seldom been a harvest in respect to the results of which the reports have been more conflicting than of that of the present year.

The general character of the experimental results is that, both where the condition of the soil was defective, and where there was an excess of artificial nitrogenous manure, there was less than the average produce; but that where the manurial conditions were more favourable, there was more than average produce. Thus the continuously unmanured plot yields only 10 bushels per acre, instead of about 12 bushels, the average of the preceding ten years, or 13 bushels, the average of the preceding thirty-six years. The farmyard manure plot, on the other hand, yields 38 bushels, of 60 lb. per bushel, against an average of only 32½, but of nearly 61 lb. per bushel, over the preceding ten years, and of 33½ bushels, at 60½ lb. per bushel, over the preceding thirty-six years. That is to say, whilst the unmanured produce is about 3 bushels below its average of 13 bushels, the farmyard manure produce is more than 4 bushels above its average of 33½ bushels. Again, plot 7, which receives, besides mineral manures, a liberal but not excessive amount of salts of ammonia, yields nearly 36 bushels, at 59½ lb. per bushel, against an average of only 33½ bushels at the same weight, over the preceding thirty-six years; that is, it gives an excess this year of rather over 3 bushels. Plot 8, on the other hand, with the same mineral manures but 1½ time as much salts of ammonia as plot 7, yields only 35½ bushels against its average of 36½ bushels; that is, with the excess of ammonia-salts, there is this year 1½ bushel less than its average, and even less than with the smaller amount of salts of ammonia. The mineral and nitrate plot again (9 or 16), yields only 33½ bushels, against its average of 36½ bushels, showing, therefore a deficiency of 3 bushels this year.

Were we to go beyond the list of the usually selected plots, more striking illustrations still could be given of the fact that in the present season the produce was below (and sometimes very much below) the average, where the conditions were unfavourable or abnormal, but that where the conditions were favourable or normal it has been over average. The produce of straw shows a very similar result. Thus, without manure, and with excessive nitrogenous manuring, the amount of straw is considerably below the average; but with farmyard manure it is considerably over average, and on plot 7, with comparatively moderate artificial manuring, it is very nearly the average.

We have then, in the experimental field, great irregularity in the amount of produce compared with the average of seasons, accordingly as the conditions of manuring were favourable or unfavourable; but the irregularities are generally in an opposite direction to those of last year. As already said, the published reports from different parts of the country also show very great irregularity of result. Indeed, it would appear that the season has pretty generally been unfavourable both for low and for excessively high condition, but favourable for less extreme conditions. So far as quality is concerned, as indicated by weight per bushel, the experimental crops are generally somewhat below their average.

It will be obvious that with a season showing such irregularities it must be difficult to form an accurate estimate of the average yield of the country at large. The average, calculated in the usual manner, from the results of the selected experimental plots, amounts to 26½ bushels per acre, at the standard weight of 61 lb. per bushel—that is, only about 1½ bushel below the standard average of 28 bushels. As already said, in adopting the average of the experimental results last year as indicating the average of the country at large, it was supposed that the crop was under rather than over estimated, and it is possible that the figure for the present year may err somewhat in the contrary direction and rather over-rate the crop of the

country. There can, at any rate, be no doubt that the average produce of the harvest of 1888 is inferior to that of 1887 both in quantity and in quality. But notwithstanding the irregularities and deficiencies which have been referred to, it is certain that in many cases much more than average crops have been obtained. I propose therefore to base my estimate of the produce of the United Kingdom this year on the experimental results without modification, leaving it to others, and to the future, to determine whether any deduction from the estimate so arrived at should be made.

Taking the average population of the United Kingdom for the harvest year, 1888-9, at rather over 37½ millions (37,771,175), the estimated requirement for consumption, at 5·65 bushels per head would be about 26½ million quarters (26,675,892). The area under wheat is reported to have been 2,663,436 acres, or nearly 300,000 acres more than last year. This area at 26½ bushels per acre would yield nearly 9 million quarters (8,947,480), and deducting 2 bushels per acre for seed, there would remain rather over 8½ million quarters (8,281,621) available for consumption, and there would accordingly be required about 18½ million quarters (18,394,271) to be provided from stocks and import. It is admitted that the Wheat crop not only of America, but of some other countries whence we derive supplies, will be below the average. But during the last two months of the past harvest year our imports were at the rate of about 21 million quarters per annum, whilst, with our late harvest, and the rise in prices, the supplies have been very liberal since, and there seems no reason to fear that there will be any difficulty in obtaining sufficient supplies to meet such requirements as the foregoing estimates show to be probable. *J. B. Lawes, Rothamsted, October 24.*

PLANTS AND THEIR CULTURE.

LIBONIAS.—Although these do fairly well when kept in an ordinary greenhouse at a temperature of from 40°–50°, yet they are much improved, and young stock in particular, by being kept in a temperature not exceeding 55°. Here, with due attention to watering and full exposure to light a genial buoyant air about them, they do not so readily shed their leaves—a fatality occurring under lower temperature without fail. Kept too warm, the plant makes soft growth and rarely flowers. Sturdy well matured growth is the sort to flower well. Large old plants of *L. floribunda* are very useful during the early spring months, but *penrhosiensis* is already showing flower. It is a rather neater subject, and, flowering as it does, so much in advance of *floribunda*, renders it a very desirable plant.

Solanum capsicastrum.—Outdoor plants have not done so well this year, and the few which have set well are late, but they will still colour well. A few may be hastened by placing them along with the Libonias, guarding against their getting dry at the roots, as they are very impatient and much injured if the soil be kept too dry.

Cold Pits and Frames.—All plants intended to be wintered in these structures should now be systematically arranged for the winter, in all cases keeping those requiring similar treatment together, as far as practicable. In this way those which require more warmth may be properly protected without having to cover others which are more hardy. It is also good practice to completely plunge the pots, as by doing so there is less fear of breakage, the roots keep uninjured, and watering is much reduced. An important point in the management of this class of structures during winter is to maintain a sweet, dryish atmosphere in them, as in the majority of cases the losses which occur are due more to dampness than to cold; therefore, whenever the days are fine, ventilate freely and early when there is no frost, but in dull or rainy weather give little or no air, specially guarding against opening during fogs. These concluding remarks are very applicable to Violets and Auriculas.

Poinsettias.—These like a position somewhat drier than most winter-flowering subjects, and a good brisk stove temperature is beneficial, care being taken to afford them all the light possible. Under these conditions the bracts develop with a firmer texture, and are rendered more lasting when removed to cooler positions. Late struck and successional plants may

be repotted as they require it, taking care not to over-pot, for large heads may be produced in very small pots, and 5 or 6-inch pots are convenient sizes. A free, loamy compost suits the Poinsettia; but in peat the plants are difficult to keep in good condition.

Euphorbia Jaquiniaeflora.—This pretty winter bloomer flourishes similar to Poinsettia pulcherrima, but there is this important difference, that *E. Jaquiniaeflora* gives, when growth is rapid, a succession of flowers, breaking back as the points are removed, but it requires to be kept in a light place, and in a warmth of 60° as a minimum. *F. Ross, Bletchingley.*

THE FLOWER GARDEN.

BEDDING PLANTS: INDOORS.—It will be advisable to look over autumn rooted Pelargoniums where they are being wintered in badly heated and ventilated structures, or there will be a large number of the plants die from damping off. Pick off all decaying flowers and leaves, but not the leaf-stalks, and in watering keep the soil rather dry than otherwise, affording plenty of ventilation on every favourable occasion. Old plants of Pelargoniums and various other bedding subjects should be cleaned and the soil in the pots slightly stirred with a stick. Fumigate to keep down aphids. The above plants should be placed as near the glass as is practicable, and a night temperature of from 45° to 50° in severe weather may be kept up. Iresines, Coleus, Alternantheras, and other tender subjects should have 10° more warmth. Should mildew make its appearance, dust the leaves over slightly with sulphur.

Frame Ground.—Although comparatively little work will require to be done here for some time nothing must be left to chance, *i.e.*, in the way of covering the frames with mats at night; it is hardly safe at this time of the year to trust to the favourable appearance of the weather, even for a single occasion, and it is as well to bear that fact in mind in regard to such half-hardy plants as some Echeverias, and the shrubby Calceolarias.

Autumn rooted cuttings in pots of Phlox, Pentstemon, and young stock of hardy perennials, should be plunged in sifted cinder ashes or cocoa-fibre refuse. Take off the lights on bright days and be careful with the water-can, as over-watering is sure to be productive of a sour soil, clogged-drainage, and consequently sickly-looking plants. Examine the pots occasionally for earthworms, and keep the surface soil free from moss.

Miscellaneous.—Such work as filling certain beds in the winter garden with Conifers, Aucubas, Berberis aquifolia, &c., should be pushed forward without delay. Some very effective arrangements of these subjects may be made with the various tints and forms of the foliage of these plants. If not already done, take up Tigridias and Gladiolus, and store away in a cool place safe from frost, neither too damp nor too dry. *J. Horsfield Heytesbury.*

FRUITS UNDER GLASS.

VINES. The Vines in the early house must now be pruned, dressed, and cleaned, the ventilators being closed at night, and everything got in readiness for a start about the middle of the month: the night temperature may be kept steadily at 50° on cold nights, but on mild ones it may run up to 55°. On dull days raise the heat to 60°, syringe the Vines frequently with tepid water, and if a bed of warm tree leaves be placed within the Vinery, and a portion be forked over every morning, it will aid in maintaining an atmosphere genial to the breaking the Vines. The best mode of securing the earliest supply of Grapes without weakening the permanent Vines is, unquestionably, from well-ripened pot Vines. If these be plunged in a bed of leaves having a temperature of 75° to 85°, and be frequently syringed with tepid water, they will break much easier than Vines with their roots in the soil of a border; and if these pot Vines be not cropped too heavily, they will produce a respectable crop of good fruit. Let the temperature for starting be 50°, gradually increasing it to 55° by the end of the month. It is November when the leaves fall from the Vine, and it is perhaps the worst month in the year for keeping hanging Grapes; therefore, where the leaves are falling it is better to cut the bunches, leaving 7 or 8 inches of shoot to the bunch, and insert them in bottles of

water in the Grape-room. This room should be on the north side of the garden wall or other buildings, should be quite dark, with heat at command, so that a steady temperature of 45° may be ensured. With this degree of warmth, and well-finished fruit, there will be scarcely a bad berry visible during the next three months. Look over all Grapes hanging on the Vines twice or thrice a week, and remove all decaying berries.

Proceed with the preparation of succession-houses, and cover the outside borders with dry leaves as they are collected—this will retain much of the solar heat. Especial care must be taken to cover securely any borders the soil of which has been renewed during the past twelve months, and is full of young roots. It may be accepted as a fact that if the temperature in these borders declines below a certain point every young root will assuredly perish. Proceed with the collection of materials and the formation of new borders or renovation of old ones during the coming winter and spring. Keep all the materials in as dry a condition as possible, thereby preserving all the fertilising properties and securing a more workable state of the material.

Young Vines which were planted during the past season will require an extra amount of fire-heat to properly ripen the canes, therefore continue to apply artificial heat and ventilation until the foliage has fallen naturally, when the Vines should be cut back to the first wire, and the house thrown open, except during frost. *Wm. M. Baillie, Luton Hoo.*

THE KITCHEN GARDEN.

PROTECTION OF BROCCOLI.—Protecting material's will be necessary, the luxuriant growth of the plants this season making them very susceptible to frost. As the most tender part of the plant is the soft portion of the stem, from whence the leaves spring, and this gets much exposed when snow or severe frost causes the leaves to droop; the aim should be to protect this part. In places that are well sheltered or naturally warm, a covering of dry bracken put over the plant in frosty weather will often prove effectual in averting loss; and if the heads are formed, as will be the case with some early varieties, tying the leaves together at the top with matting will help to save the heads; or, better still, such plants may be lifted and placed in a shed or greenhouse with a little damp soil around their roots. This practice of lifting reduces the size of the heads to a certain extent, but that does not matter much, small heads being required as well as large ones. If any Autumn Giant Cauliflowers remain until now, and Veitch's Self-protecting Autumn Broccoliis coming in, these should both be lifted, and in the case of the latter as soon as the heads are formed. It will be advisable this year to lay all the late Broccoliis, taking out a portion of soil behind, and some in front of each plant, and then pressing the latter down, cover the stem with the soil taken from the next plant, as the work proceeds. When treated in this way, the heads of the plants should lie towards the south, as when laid the other way the sun is apt to draw the leaves of the later varieties up again before the winter is over, and expose the head. Broccoli treated in this way are, comparatively speaking, safe from frost, as the leaves cannot drop down and expose the stem; but to make them as secure as possible, they can easily be covered over with bracken or dry litter when severe frost is expected.

Asparagus beds should now be cleared of weeds and rubbish, and advantage taken of the first hard frost to get a quantity of decomposed manure spread over them; and where beds are old, and produce only weak shoots, the roots may be lifted in a fortnight's time, and afterwards as required for forcing.

Endive and Chicory, &c., will be useful for salads now that Lettuces are scarcer; a very quick and clean way of blanching them for use is to take up the roots as required about a fortnight before they are wanted, and put them in a Mushroom-house or a similarly dark and warm place. Endive may also be well blanched by being covered with pieces of slate or tiles, just leaving beyond the cover a fringe of leaves, litter being placed over the plants in frosty weather.

White Turnips should be stored now before they get damaged by severe frost, and be placed in a cool cellar after the tops are removed; but the roots are best when placed in small heaps and covered with soil. The variety, Chirk Castle, keeps plump and firm longer than any other. *W. H. Divers, Kelton Hall, Stamford.*

APPOINTMENTS FOR THE ENSUING WEEK.

MEETINGS.

MONDAY,	Nov. 12—"Chambre Syndicale" of Ghent.
TUESDAY,	Nov. 13—Royal Horticultural Society: Scientific, Fruit and Floral Committees, and Special General Meeting of Fellows.

SHOWS.

TUESDAY,	Nov. 13—Brighton, Winchester, Cardiff, Watford, Twickenham (two days each), and West Kent, Hammersmith, and Leazes (one day each).
WEDNESDAY,	Nov. 14—Ancient Society of York Florists and Royal Cornwall Polytechnic (three days); and Market Harborough, Bradford, and Bromley (two days).
THURSDAY,	Nov. 15—Wilts (two days), and Royal Horticultural of Ireland, Pembroke, Aylesbury, Reading, Wimbledon, and Taunton.
FRIDAY,	Nov. 16—Sheffield (Provincial Show of the National Chrysanthemum Society), and Huddersfield (two days), and Devon and Chiswick.
SATURDAY,	Nov. 17—Ramsbottom and Derby.

SALES.

MONDAY,	Nov. 12—Dutch Bulbs, at Stevens' Rooms. Dutch Bulbs, at Protheroe & Morris' Rooms. Plants and Bulbs, at Small's Rooms.
TUESDAY,	Nov. 13—First Portion of the Collection of Orchids formed by E. Wischhausen, Esq., Wood Green, at Protheroe & Morris' Rooms. Greenhouse Plants, Roses, Fruit Trees, &c., at the City Auction Rooms, by Protheroe & Morris. Nursery Stock at Cobett's Nursery, Woking, by Protheroe & Morris (three days).
WEDNESDAY,	Nov. 14—Dutch Bulbs, Roses, and Fruit Trees, at Stevens' Rooms. Lilium auratum from Japan, Camellias, Azaleas, &c., at Protheroe & Morris' Rooms. Dutch Bulbs and Plants, at Small's Rooms.
THURSDAY,	Nov. 15—Orchids in Flower, and 5000 Lilium auratum, at Stevens' Rooms. Dutch Bulbs, at Protheroe & Morris' Rooms. Leasehold Nursery and Shop at the Waverley Nursery, Finchley Road, by Protheroe & Morris.
FRIDAY,	Nov. 16—Imported Orchids, at Protheroe & Morris' Rooms. Dutch Bulbs and Plants, at Small's Rooms.
SATURDAY,	Nov. 17—Roses, Fruit Trees, Dutch Bulbs, &c., at Stevens' Rooms. Dutch Bulbs, at Protheroe & Morris' Rooms.

The Future of
Chiswick.

THE meeting on Tuesday next at the rooms of the Royal Horticultural Society, 111, Victoria Street, is likely to be one of great importance as regards the future operations of the Society, and in particular as to the destiny of Chiswick. On this account we earnestly hope that those who have the interest of the Society at heart will be present, or respond to the invitation of the Council, and communicate their views as to what should be done. The Council deserve, and will receive, the warmest thanks for what they have done during the past year to resuscitate the Society. Their labours, as we know, have been very heavy, but they have their reward in the fact that the Society is, by their exertions, free from debt, and that it is altogether in a more healthy state than it has been for years past. One sign of the spirit that animates the Council is shown in the tendency they manifest of confiding in the Fellows and calling them into consultation when circumstances render it desirable. To discuss the whole subject either in these columns or at the meeting would take up far too much space and time. There are, however, a few points that are of urgent importance at this present moment, and these may be, nay, must be, treated of at once, leaving the other matters for subsequent discussion. The main points, we take it, are these—

What shall be done at Chiswick? Shall all the fortnightly meetings be held there during the summer, or shall those meetings be confined, as they were with one or two exceptions this year, to the Drill Hall?

Our own notions as to what should be done at Chiswick are, briefly, that it should be made more fully and completely an experimental garden and trial ground than it already is. There is no need to grow there what may be seen in any nursery, in any florist's shop, or on any green-grocer's stall; but there is need to grow there novelties for trial, or old things for comparison. Selections of subjects in all departments chosen with a view of testing their applicability to various horticultural purposes should be cultivated. Standard collections of the best flowers, fruits, and vegetables should be maintained for the purpose of reference, and the establishment of correct nomenclature.

Scientific experiments, too, as far as can be done, should be carried out—not such experiments as bear wholly on abstract science—the laboratory and grounds at Kew are the fit places for such investigation—but experiments that have a direct bearing on practical horticulture. Among these may be mentioned, by way of illustration, hybridisation, and cross-breeding; methods of pruning, the use of manures, the selection of stocks for grafting. These and like matters should be carried on at Chiswick as far as means will allow, as systematically as so many experiments in the laboratory, and recorded as accurately.

Before leaving the subject of what should be done at Chiswick, we desire especially to call attention to the important letter of Mr. DYER in another column. We do not wish to make any comment on his letter further than to express our substantial agreement with his views, and to point out that, although the letter is written by the Director of the Royal Gardens, Kew, and although he speaks of Chiswick as the Kew of Horticulture, we do not understand him to mean that Chiswick is to be made a department of Kew. Mr. DYER merely asserts that Chiswick should be to horticulture what Kew is to botany. We may indeed look forward to the establishment of a training school at Chiswick, which might be worked in conjunction with Kew, Chiswick students having the privilege of attending the lectures, &c., at Kew, and Kew *employés* being allowed to pass a certain time in the fruit-houses and vegetable-quarters at Chiswick; thus each might supply what the other lacks. The consideration of this project, however, must be deferred. Sufficient for the moment is the work we have in hand.

Having stated in outline what, in our opinion, should be done at Chiswick, we have next to consider whether any, or all, or none, of the fortnightly meetings shall be held at Chiswick during the next summer. And here it is necessary for a moment to recall the circumstances of the case. In the early part of this year the Committee appointed by the Fellows selected as an appropriate meeting-place for the Society in its then urgent need, the offices in Victoria Street as a fit place for the Lindley Library, for the Council meetings, and for the transaction of the ordinary business of the Society. Of the fitness of the choice made by the Fellows' Committee, and recommended by them for adoption, we have heard no two opinions. The room is well situated, convenient, and the library is housed as it has never been before—it is arranged, catalogued, and available for use.

As to the Drill Hall, that also was selected by the Committee, and there is no doubt that in

many respects it is eminently suitable and convenient; but it has some disadvantages, and the Fellows and general public have not hitherto taken to it very kindly. Under these circumstances it has become a question whether the Drill Hall shall be abandoned, as it can readily be, and the fortnightly meetings held at Chiswick, in accordance with the spirit of the resolution so warmly supported at the Apple Conference. To this latter course objections are raised: it is said that the exhibitors would not come, the committees would not come, the public would not come. Of course there is some force in all these objections, but none of them is fatal, for none is absolute. We believe, on the contrary, that if it could be arranged for some (not all) meetings to be held in the course of the summer at Chiswick, that exhibitors would come, that the committees would come, and that the public would come. This latter contingency of course depends on the adequacy of the announcements made. Meanwhile it must not be forgotten that Chiswick is the centre of a vast garden-loving population. Such meetings might be held alternately with similar gatherings in the Drill Hall, while the Temple Gardens, the Crystal Palace, and other places, might be made available for the "big shows," where the requirements of exhibitors would be specially considered. During the three or four winter months, the room in Victoria Street would probably suffice for the committee meetings.

These are the matters to be discussed on Tuesday next, and with Chiswick trembling in the balance, we repeat the expression of our hopes that the Fellows will consider it a duty to attend. If they vote straight for the proper development and utilisation of Chiswick, all the better—according to our thinking—otherwise the Society will be more than ever a certificate factory, and a society for the holding of flower-shows—both things desirable in their way, but both together totally inadequate, as fulfilments of what are set forth as the aims and duties of the Society.

The Chrysanthemums.

At this season what should we do without the Chrysanthemum?

This is a question that any one who visited the great show at the Aquarium at Westminster may well ask? The display was indeed, remarkable, and having seen it, there is no room for surprise at the great popularity the flower enjoys. From this point of view, indeed, it runs the Rose hard. And when we consider that the Rose comes in the full tide of the flower-season, while the "mum" comes at a time when it has, of necessity, the field to itself there is the less reason to wonder at the enthusiasm the flower excites. In form and in colour it has something to satisfy all tastes, and this at the very duldest season of the year. Another question we feel disposed to ask is—Where should we be without the "Japs"? The formal meaningless globes and incurved varieties, as inelegant in shape, but as brilliant in colour, as show Dahlias, are more than balanced by the tassels, and rays, and quills, and fringes of other sections; so that if one object to the formality and want of significance of the one, there is plenty in the *abandon* and suggestiveness of the other to satisfy the veriest stickler for Nature *versus* Art in the floral world.

The Anemone-flowered section holds the mean between the two; and while their form satisfies the demands of the most exacting there is enough to supply the requirements of those who, consciously or un-



FIG. 78.—NEPENTHES DICESONIANA X : FITCHER APPLE-GREEN, SPOTTED WITH CRIMSON, (SEE P. 543.)

consciously, love to see in a flower some manifestation of its origin and history, some expression of its adaptation to circumstances and to the purposes it is adapted to fulfill. Abstract beauty is one thing, and men will differ very materially as to what it is, and of what elements it is constituted, but beauty of appropriateness and adaptation is another matter, and one that all can appreciate. To those who know what a flower is, what it has been, why it is as we now see it, and what may fairly be expected of it in the future, the interest is enhanced tenfold. A flower that may be successfully imitated in wax or paper is not much of a flower after all. It has the same relation to other flowers as the wax models at Madame Tussaud's to the living men. But all this, as we have said, is very much a matter of taste and individual appreciation, and the National Chrysanthemum Society shows its wisdom in catering for all.

The details of this great show are given in another column; here we can only express our general impression that the cut flowers were superb, while the groups were not so fine as we have seen them on former occasions. The season, no doubt, has much to answer for in this particular. Many growers were surprised by the sudden severe frosts in the early part of October, and the effects of this are visible in the bare leafless stalks, and in some cases by the crippled flowers. These latter were, of course, not noticeable in the exhibition room, but they are evident enough in the collections of the growers, and they go far to emphasise the fact that the Chrysanthemum is not quite hardy, and that the cultivator must be wary and get his plants under cover in due season.

As far as novelties are concerned the French are inundating us with flowers, which differ from what we have already as tweedle-dum from tweedle-dee, but our American cousins are sending us plants of a distinct and valuable character so far as regards robustness of habit and dwarf stature. These are desirable qualities, for, however beautiful and extraordinary cut blooms may be, the like flowers seen like mops at the top of a long stem are not quite so attractive. Another point is worth notice, and that is the foliage. The leaves of a Chrysanthemum are distinct and handsome in appearance; moreover, they are exceedingly variable, and this is the more interesting, in that it is a natural variation, which has not been (consciously at least) selected by the florist. The philosophers should take heed of this, they attribute the variation in the flowers to the processes of selection and protection exercised by the gardener, or, in Nature by insects or otherwise, but there is nearly as much variation, though no one has observed it systematically, in the foliage; and this, as we have said, has not been selected by the florist. To what, then, is this variation attributable? Verily there are many things not dreamt of in our philosophy!

ROYAL HORTICULTURAL SOCIETY.—"A special meeting of the Council was held on Wednesday, October 31, at 1 p.m., when it was resolved that a cordial vote of thanks be sent to all those who were kind enough to read papers, or to exhibit fruit, or in any other way to assist in making the late Apple and Pear Conference at Chiswick a success. It was resolved that a report of the Conference be forthwith prepared with a view to its publication as a number of the *Journal* of the Society. The two resolutions passed at the Chiswick Conference were then read and considered, and with reference to the suggested Sub-Committee on Law and Parliamentary Matters, it was resolved, "That the Government having, at the suggestion of the Council of the Royal Horticultural Society and others, expressly

included horticulture in the bill for the establishment of a ministry of agriculture, it would be inadvisable to appoint a separate Law and Parliamentary Committee, the Council considering itself to be in a position to fulfil the duties of such proposed committee more advantageously than a subsidiary body." With reference to the second Conference resolution, relating to the Society's garden at Chiswick, the following resolution was passed, viz.:—"That the Council of the Royal Horticultural Society fully appreciate the value attaching to Chiswick Garden, and are anxious to extend and develop its resources to the greatest possible extent in every direction for the advancement of horticulture, as far as the means placed in their hands will allow." It was resolved to invite the members of the present Fruit and Floral Committees, and, also the principal exhibitors, to attend a meeting in the Council-room on Tuesday, November 13, at 11:30 a.m., to discuss as to the best place in which to hold the fortnightly meetings for 1889. It was further resolved to hold a general meeting of the Fellows of the Society in the Council-room on Tuesday, November 13, at 2 p.m., in order to submit to them the draft of new bye-laws with a view to their adoption. It was determined that at the two next meetings of the Society on November 13 and December 11, any tender plant may be placed in the Council-room where they will be free from exposure to cold. By kind permission of the Treasurer and Benchers, a grand flower show will be held by the Royal Horticultural Society, in the Inner Temple Gardens, on May 30 and 31, 1889. It was resolved to contribute £10 to the funds of both the Auricula and Carnation Societies, if their exhibitions are held under the auspice of the Royal Horticultural Society in the year 1889."

NATIONAL AURICULA SOCIETY (SOUTHERN SECTION), NATIONAL CARNATION AND PICOTEE SOCIETY (SOUTHERN SECTION).—We have received the following disclaimer from Mr. J. DOUGLAS, Barkingside, Ilford, for publication:—"The annual general meetings of the above Societies were held on October 23, and inaccurate reports of these meetings were sent to the gardening papers. In certain papers articles have been written founded upon these erroneous paragraphs, and I, as Honorary Secretary of the above Societies, beg to say that not a line was either written or prompted by me concerning the meeting. The inaccuracies I complain of are—first, the statement that it had been decided to hold the annual displays at the Crystal Palace; whereas nothing of the kind was decided at the meetings. The Societies are also termed 'national societies,' but, to be correct, the meetings were of the 'southern sections' only. As some of the criticisms are adverse, it is only fair to the Northern Sections to say that they are not included. I decidedly object to the publications of the proceedings of any societies such as have appeared in the gardening papers, even when they are not inaccurate. It was decided at the meeting this year, as it was also last year, to communicate with the Directors of the Crystal Palace to ascertain on what terms they would receive the Societies, and at the same time it was decided that a similar application should be made to the Council of the Royal Horticultural Society. I thought it best while negotiations were pending to make no public statement, but other persons evidently differed from me in this respect; but when it had been finally decided where the exhibitions would be held, I should have sent the usual report to the gardening Press."

MINA LOBATA, or, more properly, according to Benthams and Hooker, *Ipomoea versicolor*. The specific name of this beautiful climbing plant is very applicable to shades of colour that the flowers pass through. It is considered by some to be rather tender, but it stands in the open at Cambridge, growing and flowering profusely. Seeds should be sown in February or March in heat, and grown on singly in pots with a small stake, hardening them off, and finally planting them out into the border or elsewhere. When

planted in the open a few twiggy branches are very suitable for them to trail over.

BERTOLONIA COMTE DE KERCHOVE.—This is one of Mr. BLEU's seedlings, with cordate ovate acute leaves, with an olive-green velvety ground traversed by brilliant rose-coloured nerves. It was exhibited with others at the last Ghent Quinquennial, where they naturally excited great admiration. The plant is now figured in the November number of the *Revue de l'Horticulture Belge*.

BOTANICAL DEPARTMENT, NATURAL HISTORY MUSEUM. Mr. ALFRED RENDLE has been appointed Assistant in the Department of Botany in place of Mr. RIDLEY, who has been chosen as Superintendent of the Botanical Department, Singapore.

"FAMILIAR TREES."—This work, published by Messrs. Cassell, continues to merit praise, both for the information it contains and the way in which the numbers are got up. The paper, print, &c., are good, and there are pretty and numerous illustrations. The value of the coloured plates (which are issued every month), is enhanced by the fact that the German and French synonyms of the trees figured are given, in addition to the English names. Mr. BOULGER, the Editor, knows how to combine accuracy of statement with facility of exposition.

MANCHESTER HORTICULTURAL IMPROVEMENT SOCIETY.—The first meeting of the present winter session of the Manchester Horticultural Improvement Society was held on Thursday evening, October 31, at the Prince's Café, Oxford Street, Mr. BRUCE FINDLAY, the retiring President, in the chair. Mr. R. TAIT, Treasurer, submitted his annual statement of accounts, which showed a balance in hand of about £5. The balance was, he said, not a large one, but they must remember that the subscription fee was only a small one. The President addressed a few words of encouragement, and the Honorary Secretary (Mr. W. B. UPJOHN) congratulated the members on the prospect of a pleasant session. Papers had been promised by Mr. Gleeson on the Pine-apple, Mr. McKeller on vegetables, Mr. R. Plant on the Horse-radish, Mr. J. Booth on "Modern Gardeners and Gardening," Mr. Birkenhead on "The Functions of Leaves under the Influence of Sun-light," Mr. R. Tait, jun., on "Liliums and Cyclamens," Mr. W. Elkin on "Floral Decorative Work," Mr. Wallace Adams on "The Mixed Border," and Mr. Samuel Barlow on "Garden Gossip." The following were elected officers for the ensuing year:—President, Mr. Bruce Findlay; Vice-President, Mr. A. Stansfield; Treasurer, Mr. R. Tait; and Honorary Secretary, Mr. W. B. Upjohn. Messrs. J. Briddon, W. Elkin, G. Lunt, W. Plant, and F. Robinson, were elected members of the committee.

Mr. D. T. FISH has been elected member of the Town Council of the town of Bury St. Edmunds.

ROYAL HORTICULTURAL SOCIETY OF ABERDEEN.—At a recent meeting of the acting directors of this Society Mr. JAMES MURRAY GARDEN, Advocate, Aberdeen, was appointed chairman, and Mr. ALEXANDER ROBSON (of Messrs. W. SMITH & SON Vice-Chairman. The annual supper was fixed for Friday, December 14. It was unanimously agreed that an illuminated address be presented to Councillor Lyon, late Chairman of the Society, thanking him for the warm interest he has taken in the welfare of the Society. It was resolved to have another meeting soon to prepare a prize schedule for 1889.

FRINGED CYCLAMEN.—Mr. COOPER sends us from the garden of the Right Hon. J. CHAMBERLAIN the finest specimen we have yet seen of this curious and beautiful anomaly already figured by us. From the inner surface of each petal arises, not one single petalline lobe, but a whole tuft of them. The five stamens are opposite to the petals. The whole

flower is bell-shaped, the individual petals not being reflexed as usual. It was raised from seed of a flower like that figured, and is a distinct advance on it.

ROYAL MICROSCOPICAL SOCIETY.—The next meeting of the Society will be held on Wednesday, the 14th inst., at 8 o'clock precisely, when the following paper will be read by Mr. W. WEST: "List of Desmids from Massachusetts, U.S.A."

PHOENIX DACTYLIFERA. A large female specimen of this, the Date Palm, has been sent to the Royal Garden, Kew, from the Cambridge Botanic Garden. The plant has been growing in a box in the Palm-house, and when packed in its case measured 35 feet in length, weighing upwards of $4\frac{1}{2}$ tons. It arrived safely at its new home by rail, and has been planted out in that fine and large conservatory in the pleasure-grounds known as the Temperate-house.

LARGE ORCHID SALE IN AMERICA.—The largest and finest collection of Orchids ever offered at a public sale in America by a nurseryman or dealer was (we quote from *Garden and Forest*, of New York), disposed of by auction, at the rooms of YOUNG & ELLIOTT, of that city, on Tuesday of last week. The sale included the entire stock which Messrs. F. SANDER & Co., of St. Albans, England, had collected at their establishment in Jersey City, and consisted of more than 1000 lots. The total amount realised was about 7000 dols., and it would have been considerably more if the sale had been concluded. The day was too short, however, and some 200 of the lots catalogued were not reached. As a rule satisfactory prices were obtained, but some of the very finest Orchids sold for less than their real value. This was true of the superb specimen of *Vanda Sanderiana*, which brought only 230 dols. The original plant of *Cypripedium Boxalli atratum*, which was certificated by the Royal Horticultural Society of England, sold for 160 dols.; *Cypripedium Chantinii*, Philbrick's variety, brought 160 dols.; and a wonderful specimen of *Cattleya Mossiae* sold for 145 dols. Perhaps the *Cypripediums*, all things considered, were sold to the best advantage. It was noted that the bidding was quite as brisk when darkness put an end to the sale as it was at the beginning. It was noted, too, that a larger proportion of plants than is usually the case went to the trade about New York and Philadelphia, showing a confidence on the part of alert dealers that the demand for Orchids, and the best Orchids, is steadily growing in this country.

MUSSAENDA BORBONICA.—An interesting communication has recently been to the Société d'Acclimatation of Paris by M. LAPEYRÈRE, a health officer of the French Navy, concerning a shrub, previously undescribed, belonging to the order Rubiacæ, and found on the island of Reunion. It forms a bush of 9 feet in height, with a short stem, and numerous branches. The berries are round, slightly pressed together at the points, of the size of a Cherry, and of a blue-green colour, changing to violet when ripe. They contain two seeds, in form resembling those of Coffee, and showing still closer resemblance in chemical composition. According to the analyses made, *Mussaenda* seed contains caffeine, an aromatic essence, ether, oil, and the other substances in greater or lesser proportions which are found in Coffee. They offer, therefore, a good substitute for the latter, or of Chicory, sweet Acorns, and other substances generally mixed with Coffee. It is stated that of *Mussaenda* seeds 3,000,000 kilogrammes can be obtained annually. It will be remembered that *Mussaenda* is a near ally of the Coffee.

CASSELL'S "POPULAR EDUCATOR."—We have received the first part of the new edition of CASSELL'S *Popular Educator*. The monthly numbers of this useful work are issued in a more convenient size than before, and contain much new matter; the old articles have been revised and brought up to date. The subjects treated of include science, art, and

languages, and there are besides instructive and interesting essays on more general subjects. To the practical utility of this work we can ourselves testify, having found the first edition a valuable aid when as an amateur teaching languages and certain sciences to a class of artizan students; hence we can strongly recommend its use in garden libraries. The botanical portion, however, in the former editions was inferior and much behind the age. We trust this may be rectified in the new edition.

THE APPLE AUDIT. Some results of the late Chiswick Conference will be specially interesting. The object was to ascertain not how many sorts are in cultivation, but which are the best suited commercially for special purposes in different localities. The double audit taken shows, first, by the number of dishes exhibited, what is the popular verdict; and the second, by the number of certificates awarded, the merits of the particular variety as shown on that occasion from various localities. Thus, Warner's King was exhibited by seventy-eight exhibitors, and received ten certificates, a percentage considerably less than Peasgood's Nonsuch. Here are a few figures relating to the most important kinds:—

	Dishes exhibited.	Certificates awarded.	Percent.
<i>Apples.</i>			
Warner's King	78	10	12
Cox's Orange	61	8	12
Lord Suffield	73	6	11
Stirling Castle	71	6	11
Cellini	52	5	10
Peasgood's Nonsuch	32	5	15
Rib-ton	51	5	9
Worcester Pearmain	41	5	12
<i>Pears.</i>			
Louise Bonne d'Enfer	75	13	15
Beurré d'Amour	41	9	25
"Diel	50	5	10
"Harly	23	5	25
Doyenné du Commerce	29	7	25
Marie Louise	59	5	9
Pitmaston Duchess	47	7	16

LINNEAN SOCIETY.—A meeting will be held on Thursday, November 15, at 8 P.M., when the following papers will be read:—1. "On the Mountain Range of Flowering Plants, and Ferns, in Ireland." By Mr. H. C. HART, F.L.S. 2. "On the Mammals collected by Mr. H. N. RIDLEY in Fernando Noronha." By Mr. OLDFELD THOMAS. 3. "On the Birds collected by Mr. H. N. RIDLEY in Fernando Noronha." By Mr. R. BOWDLER SHARPE, F.L.S.

"DIE NATURLICHEN PFLANZENFAMILIEN."—The last number of this useful publication contains the commencement of Dr. PRITZER'S Monograph of Orchids.

DAHLIAS FROM ROTHESAY, N.B.—We have received from Messrs. DORRIS & Co., of Rothesay, blooms of Dahlias, show, Cactus, and pompon, gathered in their nursery on November 5. They show the extreme mildness of the weather there during the past month. The flowers were gathered from their Dahlia grounds, which they tell us are still gay and brilliant, and the plants showing hardly a trace of injury from frost. The lighter coloured varieties seem to have lasted best. Queen of the Belgians and Mrs. Gladstone, are but little inferior to the best blooms of the season. Mrs. Hawkins (Cactus), J. Green, and Ethel Britton are also very good.

M. DE CANNAERT D'HAMALE.—The death of this veteran Belgian horticulturist, so well known to many of our fraternity, is announced. M. DE CANNAERT was indeed a familiar figure at all the principal horticultural meetings. He was a member of the Belgian Senate, learned, genial, and enthusiastic, and died full of years at Malines on the 2nd ult., having been born in 1803. Together with our much-lamented friend MORREN, and in asso-

ciation with some still left to us, M. DE CANNAERT was a leading spirit in the management of the Federation of the Belgian horticultural societies. He was the author of a monograph on Lilies, and his collections of living plants at Malines were well known.

SIR JOSEPH HOOKER. The portrait of Sir Joseph Hooker, intended for presentation to the Linnean Society, is to be painted by Mr. HERKOMER, the death of Mr. FRANK HOLL having prevented the realisation of the original plan.

JUGLANS MANCHURICA, which was recently figured in our columns (see p. 384), is a most promising nut tree from Japan. A tree in the Arnold Arboretum, from seed planted in the fall of 1879, has this year, says *Garden and Forest*, borne two bushels of nuts. The fruit is larger, more nearly spherical and less rough than our common Butternut and is of very good flavour. The nuts are borne in clusters with from six to thirteen together. The tree has borne now for five years, and, besides the valuable crop it yields, it gives good promise as an ornamental tree.

RHEUM NOBILE.—A fine crop of seedlings has been raised from seed saved from the plant that flowered in the Royal Botanic Gardens, Edinburgh, this summer.

NEPENTHES DICKSONIANA ×.

THIS is a very distinct, and, as our illustration will show, a very beautiful variety. Its origin is curious. Whether it would ever have originated in Borneo, Sumatra, Singapore, or adjacent islands, we do not know. Possibly it might do. But in this country, at least, without the aid of railways and post-offices, it could hardly have done so. Stage-coaches might have been rendered available, perhaps, but at the date of stage-coaches one, at least, of the parents was unknown in this country. In fact, the plant before us is the offspring of *Nepenthes Rafflesiana* as flowering in the Edinburgh Botanic Garden by the pollen of *N. Veitchii*, as supplied from the nurseries of Messrs. Veitch at Chelsea. Mr. Lindsay, the Curator of the Royal Botanic Garden, effected the cross, raised the seedlings, and desired that they might bear the name of Professor Dickson, the late Professor of Botany in the University, who took much interest in this class of plants. The hybrid in question is now some three or four years old, and at first it gave so little promise of the beauty it has since evolved, that there were, we believe, serious doubts as to whether it was worth preserving. Some one (may his name be blessed!) pleaded for it, and the result is now before us in the shape of the handsome pitcher plant illustrated from Messrs. Veitch's specimen, at fig. 78.

N. Rafflesiana is known as one of the earliest introductions of the kind, and is still one of the handsomest of its race. *N. Veitchii* is remarkable as one of the most distinct of the genus in the yellowish colour of its pitchers, and in the very broad flattish frill which surrounds the mouth. In the hybrid we have the characters of both species curiously intermingled. We were about to give these points in detail, but perhaps few of our readers would thank us for so doing. Suffice it to refer to our illustration, adding, what is not there shown, that the leathery deep green leaves are about 20 inches long, tapering at the base into a channelled stalk, 4–5 inches long. There are three parallel nerves between the midrib and the margin, which are not shown in our illustration, but which should be noted because that way lies the means of discrimination between many of the species. The colour of the pitcher is a pale green, thickly mottled with crimson blotches; the rim is very broad (1 inch), not so flat as in *Veitchii*, but more so than in *Rafflesiana*, finely ribbed, and some of the ribs striped with purple. The lid is oblong, pilose on the outer surface, purple-spotted within, markedly two-ribbed, and with a long horn-like spur at its base. The wings of the pitcher

are deep, with long fringe-like cilia at the edges, and they reach from end to end of the pitcher.

The plant is evidently of vigorous habit, "free," and likely to increase in beauty with age. For the rest, see our figure, or, better still, pay a visit to Messrs. Veitch's Nepenthes-house, preparing yourself beforehand (if you have not been there before) for a startling surprise, and a sight as full of interest as it is of beauty.

CHRYSANTHEMUMS.

THERE will probably be observable in the shows just commenced a great range in the quality of the blooms staged, and close round London the quality of the blooms will have been affected by the frosts on October 3 and succeeding nights, although closer in again the damage is not so apparent. Then the cold damp sunless season has had the effect in many cases of causing damping in the blooms. Nevertheless, we can confidently look for some first-rate flowers, and the exhibits will be generally either very good or bad, and only in a few cases of medium quality.

MR. OWEN'S, MAIDENHEAD.

At Mr. Owen's nurseries, Maidenhead, the effects of the frosts are very distressing, whole rows containing hundreds of plants being rendered useless, and there are included in these several of the very latest varieties, and therefore a distinct public loss is occasioned, for Mr. Owen procures almost every new variety each season, and gives opportunities for comparing their merits. There are, however, some few plants which have fared better, and besides the very well known varieties we may single out G. Daniels (new this season), a reflexed Japanese, almost white above, with rose-pink reverse; it is of large size, and in all probability will be a favourite when better known; the petals are large, about half an inch wide, but are rather sappy, which may be attributed to the season. Another Japanese is Fimbriatum, blush, with white lacerated tips—a pretty flower, which is now two years old; it bears very large blooms, one measuring 10 inches across. Miss Gordon, reflexed Japanese, is a rich pale pink, and has good-sized petals. Gorgeous, a fine solid chrome-yellow flower, after the style of Thunberg. Avalanche shows up well as a pure white Japanese; it is a light looking flower, rather short in the petal. Elsie is creamy-white when fully expanded, but lemon coloured on opening; the petals are very drooping, and it is a good reflexed Japanese variety, of medium size. Alcyon, another of the same section, rose-coloured, has recurved tips, which display a lighter tint of the same colour. Florence Percy (Japanese) has tubular and spatulated long white petals, giving an appearance of lightness and airiness which is very pleasing. Duke of Berwick, a Japanese, cream-coloured, with faint rose traces, is to be noticed as a dwarf and early variety.

One of last year's varieties, which is striking, is Marie Ouvray, a deep red maroon, fluted and twisted; it is a free flowerer, but is too small for exhibition purposes. Jules Barigny, a rosy-coloured Japanese flower, white reverse, has no centre, but is a pretty colour and a good decorative variety. Holborn Beauty is a Japanese, with petals of good breadth, yellow, and a strong grower. M. Duboul is bright rose with a paler centre; the petals have an irregular twist, and are drawn in to narrow points, making a very conspicuous bloom. Sarah Owen, W. Holmes, and Lincoln's Inn are well grown, and also Capucine for decorative purposes.

Among the incurved, M. le Baron d'Avene must be named; it is quite new, and in colour is rosy-lilac, tipped with white; also George Anderson, rosy-lilac, and white striations—a pretty combination; and an American novelty, E. S. Renwick, soft pink on both surfaces—a promising flower. There is also Jubilee, a pale pink, stated to be a sport from Princess of Teck. A deep rich and bright yellow show Anemone is J. Thorpe, Jun., which has a good-sized flower with a good number of ray petals.

Before leaving the nursery reference should be

made to the Chrysanthemum coronarium Cloth of Gold, a strong variety, with flowers of bright yellow, measuring 3 inches in diameter.

THE ROYAL NURSERIES, SLOUGH.

Mr. C. Turner was also unfortunate in feeling the frost, but not to such an extent as at Maidenhead. Large quantities of Boule de Neige, Princess of Teck, and Mrs. N. Davis, suffered most, and after being frosted the plants were taken inside, being previously cut-back till the pith became white; they are breaking away now, but what will follow? There was a fine lot of bright blooms in the house, the best varieties in each section being represented by large and clean blooms—these included such varieties as Madame Blanche Pigny, W. Holmes, J. Mahood, Lord Alcester, Cullingford, Comte de Germigny, Madame de Sévin, Mlle. Lacroix, Val d'Andorre, &c. Besides these, there were novelties worthy of special mention, such were:—Madame Barez (Japanese), short petals of rosy-purple, very closely lined on a whitish-yellow ground, the colouring being more intense at the tips of the petals, it is a promising variety, and is stated to be early. Monsieur L. Langlois, tubular and spatulate, petals of coppery-yellow and red-brown, a pleasing colour; Amy Furze, white, splashed rosy-purple, short in the petal (Japanese). Another pretty Japanese is M. Levigne, pale pink on white, with the petals long and twisted. Madame Louise Lacroix, pure pearly-white (also Japanese), is a flat flower, adapting it well for wreath work. Carew Underwood, the bronze sport from Baronne de Prailly, was well represented. In one house were very large quantities of Lady Selbourne and G. Glenny, which are grown for cutting purposes. We noticed also the early Neapolitan Violet, Lady H. Campbell, which was in full flower. It is earlier than Marie Louise, and is of a slightly lighter colour. Mention may also be made of a pyramid tree of Crataegus Lalandei in full berry—a pretty and conspicuous object.

MR. W. HOLMES, FRAMPTON PARK NURSERY,

Hackney, has a good display of blooms in a house erected for the purpose. Marguerite (Japanese), cream coloured, with purple-carminé at the base, is a very distinct flower. It is new, and will probably develop into a capital flower. Tisiphone, another Japanese, has fine hair-like petals of gold and red-brown with the petal very much twisted. It is a flower about which opinions are likely to differ widely. Mandarin is a great acquisition to the Japanese section, being a full flower of fluted petals, and in colour a delicate cream. Triomphante, a reflexed Japanese, with broad petals of lilac-pink, with a cream centre, is a solid-looking flower. Marquis of Devonshire, the sport from Bouquet Fait, which, when seen last year, was considered to be like William Robinson, is evidently distinct as seen here; the colour is a warm terra-cotta. Others were Sunflower, a beautiful yellow, certificated this year by the Royal Horticultural Society; Avalanche, pure white; Madame Ch. Souchet, bright yellow and Carter pink, like O. J. Quintus, but of larger size, all Japanese; and Nielson, the largest Japanese Anemone. There were also several splendid blooms of W. Holmes.

FINSBURY PARK.

The usual annual exhibition at Finsbury Park is now open to the public, and a capital display of blooms of fine quality may be seen there in a house 100×18 feet, with the plants arranged in a double sloping mass; in the centre E. Molyneux, Mons. Tarin, Madame de Sévin, Thunberg, Lord Alcester, Mrs. Rundle, Mons. Delaux, G. Glenny, W. Holmes are prominent; and also Samuel Morley, rich red-brown (reflexed Japanese); Romeo, magenta-brown (fluted Japanese); Mr. J. Laing, bright red-brown, with a gold margin, the petals attaining a fine point (reflexed Japanese); Lady Lawrence, a new large white Japanese with broad petals, likely to be a good flower; Dr. Dor (Japanese), deep cream, with just a very faint suspicion of rose—a very attractive variety; and Gorgeous (reflexed Japanese), bright

yellow, were very good. Mr. Maudlin, under whose charge the plants have been grown, is to be congratulated on the display.

MESSRS. J. VEITCH & SONS, CHELSEA.

A large houseful of new and old varieties reward the visitor at this establishment. Here also the early frosts have left their mark in the shape of crippled bloom-buds; and the fogs have disfigured the foliage, which, at an early period of the autumn, was very healthy-looking and abundant. The new varieties were chiefly placed in the Camellia corridor—at least the earliest in bloom were so placed. These were Madame J. Laing, a fine chestnut-coloured Japanese, with thread-florets reflexed; Belle Pauline, of the same class, lilac, with long thread-florets; William Stevens, orange and lemon-yellow—a good flower, and large Charles Gibson, an orange sport from Princess of Teck, in form equalling the original flower; E. Molyneux, crimson-brown (Japanese), with the reverse of the floret of dead gold colour, a showy fine bloom; Anne Clarke (Japanese), the thread-like floret, divided at the tip, centre of flower white, the margin, lilac-coloured; J. J. Hillier is very similar to Madame J. Laing, but it is later in flowering, and the chestnut colour has a shade of crimson in it; Moonlight is a full white flower with divided florets, which are twisted; Charlotte de Montcabrur is delicate mauve-coloured, full, and with thread-like florets; L'Or de Japon is a fine thing in deep yellow, the points of the florets turn up; C. Orchard is a crimson-orange, with the reverse of the florets dead yellow: the flower is very full. Other good varieties were Alfred Chantrier, yellow, with a pink suffusion over the straight florets; it is an early flowerer. W. Holmes, rich crimson-brown—a fine globular bloom; The Moor, one of Mr. Sadler's seedlings, a reflexed Japanese, close-petalled, small flower, and nearly the same colour as the last named; it may come yet finer than now seen. The American-raised flowers are Mabel Douglas, a medium-sized flower, reflexed, soft yellow, thread florets—a pretty Japanese variety; Puritan, a pure white flower, with flat florets turning upwards, large—a fine flower; Mrs. Langtry, a very large, starry, white Japanese; and President Hyde, a reflexed yellow, with a button-like centre, dwarf in habit, as are most of the American varieties.

ATHROTAXIS SELAGINOIDES.

THE species of these curious Tasmanian Conifers are sadly confused in gardens, but we trust that the figures and descriptions of the species which have been given in these columns from time to time may aid in their more ready discrimination, and in the establishment of correct nomenclature. The present species is widely different from the others, and may be recognised by its loosely packed relatively large curved linear-lanceolate leaves and cones of the size of a Cherry.

For the specimen from which our fig. 79 was taken we are indebted to the kindness of the Director of the Royal Botanic Garden, Glasnevin. We have seen it in various gardens under the name of Gun-niana and Doniana, but the name adopted is the correct one. The three species are very easily recognised:—

A. cupressoides has relatively small, closely appressed, ovate leaves, with a prominent midrib, and the cone-bearing branches sharply bent downwards at the apex, so that the cones, which are about the size of a large pea, are nodding. It is usually, but erroneously, called *A. selaginoides*, and we have also seen it under the name of *C. imbricata*. It was originally described by Don, and subsequently by Sir Joseph Hooker in *The Flora of Tasmania*. It was figured also in these columns, 1885, vol. xxiv. p. 273.

A. laxifolia has the same general habit, but the leaves are loosely packed—not at all appressed—and oblong obtuse leaves, longer than those of *E. cupressoides*. The cones also are not bent downwards, and are larger, being of the size of a small Cherry. The species was originally described by

Sir Joseph Hooker in the *Icones Plantarum*, and was figured by us on November 7, 1885.

A. selaginoides curiously resembles *Lycopodium Selagin* in appearance. Its leaves are loosely disposed, about half an inch in length, narrowly lanceolate acute, and the cones are as large as a Cherry (see fig. 78). In each case the seeds are provided with rather deep oblong obtuse wings. The microscopical structure of the leaf and other characters have been given in previous numbers, to which we may refer the reader. They are trees for the gardens of the plant lover and *connoisseur*, but not likely to be of value for timber.

HOME CORRESPONDENCE.

WALL TREE BORDERS.—Fruit and its profitable cultivation are in the ascendant, and certainly "hold the field" in every gardening periodical. Among others I beg to submit my ideas in regard to the cultivation of fruit trees on walls. From time immemorial the general custom has been to make a border for the roots of from 10 to 12, or 14 feet wide; and every year this land is in great measure manured and dug, often twice, for the production of all kinds of vegetables. Now, as it is considered a barbarous practice to dig among our trees and shrubs, cutting and mutilating the roots, surely it must be equally so to do it to our fruit trees on the walls. My experience leads me to think that if it were otherwise there would be fewer dead branches and less gumming, especially on Apricots, Cherries, and Peaches. I have seen splendid crops, in a garden in the west, of Apricots, Cherries, and Grapes when the trees were planted under the roadway or path. Now, my system would be this—to have a narrow border 3 or 4 feet from the wall, then a broad walk 6 or 7 feet wide, well made with brick-rubble and old mortar for the foundation, well rammed. I have no doubt myself of what the result would be. A. J. Temple, Nostell Priory, Wakefield.

STANHOPEA SACCATA.—I would wish to add to the list of interesting and beautiful *Stanhopeas* mentioned at p. 480 by Mr. Douglas as growing at Lowlands, Mr. Horner's residence, the name of one quite worthy of being added to any collection where these curious and beautiful Orchids are grown. This is *S. saccata*. I have twice flowered this species, which bears compact blooms of medium size of a clear shaded primrose-yellow colour, the lip having a remarkable bag or pouch of brilliant orange colour, whence its name, which has the authority of Professor Reichenbach, is derived. I find that it thrives in a basket hung close to the roof in the stove. Any grower of *Stanhopeas* would do well to secure this beautiful species. J. T. Poë, Riverston.

PLANTING SANDHILLS.—I have noted with some interest the correspondence on the above subject, and I am sure that, generally speaking, one point is overlooked by many planters, and that is the fact that although grasses have succeeded in holding the sand, it yet takes some years before such sands become converted into soil sufficiently good to support the free growth of other plants, and unless means are taken to provide the necessary pabulum for the growth of trees, &c., time must be allowed for natural causes to provide the material for such growth. To expect plants to grow freely where they can obtain no real nourishment is not a sensible thing, and therefore some method must be adopted to secure the end in view. In the natural course of events, if we have grass which is suitable for the food of animals, they could be grazed on the sandhills, and by adding such things as corn or oilcake to their dietary, the soil would be enriched, and a greater quantity of forage would be produced, while the enrichment of the newly-forming soil would in time give facility for the employment of a wider variety of forage plants, which again would tend to make the pasture more valuable, and while making it more valuable, would be also rendering it increasingly more suitable to the growth of plants of larger growth. Time would of course be necessary, and this is just what is not allowed as a rule, and therefore after the sands are once bound, some method of enriching them other than by natural causes must be adopted. In the artificial enrichment of the soil, dressings of clay, river mud, and other heavy materials may be used if obtainable, as well as thoroughly-

rotted seaweed, animal matter of all kinds, and in fact anything which will tend to bind and enrich the sand; while deep-rooting plants, such as Seakale, may be used in moderation on the bound sands, all these items being serviceable in forming a soil in which trees will grow. However, before having large trees, bushes of Tamarisk or other subjects should be planted to afford some break or shelter for the trees; and these latter should not be too large specimens when first set out. Time and perseverance are the chief things in reclaiming sands, and given these, the work of reclamation will proceed vigorously after the sands are once rendered stable and free from shifting by the initial process of binding with grass and other plants. Walter J. May, Walton-on-Thames.

PRESERVING MELONS.—As the Melon season has been a very bad one, owing to our continuous sunless skies, a note on preserving them, I think, will not be out of place. Melons in frames set their fruit well with me this year, but they did not ripen well; in fact, they would not finish on the Vine, but decayed at the stalk; and therefore to preserve them I took them to a dry vinery, laid them on a shelf for a few days till they were perfectly dry, thence to a cupboard beside the fireplace in my room, where they were placed,



FIG. 79.—*AIROTAXIS SELAGINOIDES*.

enveloped in wadding about six times thick. In the middle of September I put in one which was quite green; and on October 29 on examining it I found it quite ripe and of a fine flavour. Another method for preserving very late fruits is to cut them when not over-ripe, with a clean cloth wipe them, then lay them for twenty-four hours in a dry place, afterwards burying them in sifted ash dust and inclose them in a cask or a perfectly air-tight box, where they may be kept sound until December, or even January. G. Howes, Merton.

ASTER HYBRIDS.—Under this head, on p. 515, my friend, Mr. E. J. Lowe, mentions two new seedling Michaelmas Daisies, which he supposes to be hybrids. As I have long been collecting all the best forms of this flower I may be allowed to say that any one who raises or calls attention to an improved variety of Michaelmas Daisy deserves the thanks of all growers of hardy herbaceous plants. The merits of Michaelmas Daisies for garden decoration were never more conspicuous than this autumn, when most of us had nearly all our flowers prematurely killed on October 1. Since that date to the present time these late flowering perennial Asters have made such a display with me in all my borders that the lost flowers were hardly missed. From time to time I come across new or improved forms, and I feel convinced that many exist which have not yet found their way to nurseries, and that others might easily be raised. It makes little difference to the gardener whether botanists consider

these varieties to be hybrids, or garden developments of a species, provided they are good. I have little doubt that there are many hybrid Asters in cultivation; three years ago I retained the services of a trained botanist to name my Asters, taking the Kew herbarium as the standard, and several of my best he gave up as coming under no name or description. One which Max Leichtlin sent me a few years ago as his "best Michaelmas Daisy," has been sent to two or three experts, none of whom ventured to assign it a name or a parentage. In early seasons many Michaelmas Daisies ripen seed, and brushing them when they first flower with pollen from the best kinds, would be likely to produce good developments, whether of the same species or of hybrids. As for a cross between Aster and Erigeron, which Mr. Lowe mentions, there is no reason why it should not succeed. Asa Gray tells us that there is no natural line of division between them, and that the separation of these two species is purely arbitrary. I hope, therefore, that Mr. Lowe and others will not be discouraged because their attempts to make this cross have not yet been successful. C. Wolley Dod.

DISEASE-RESISTING POTATOS.—I should like to supplement the remarks of Mr. Murphy of Clonmel, in a recent issue of this journal upon the subject of disease-resisting Potato, by stating that in this neighbourhood every kind of Potato has this season been more or less affected by disease. There are considerable differences, however, as to the extent of the ravages, some varieties having escaped with about 1 per cent. of bad, while others are from 75 to 80 per cent. diseased. And in some cases labour is not being spent to lift and remove the tubers from the ground, which is certainly a mistake, [a crime rather], if it is intended to grow another crop of Potatoes in the immediate vicinity next year. The advantages of early varieties and of early-lifting have been clearly demonstrated in the present season, Ashleaf Kidneys, Myatt's Improved, Early Rose, and the like, that harvested at the beginning of August are keeping capitally; it being quite an exception to find a bad tuber during sorting. But in gardens where these varieties have been left in the ground until September, they too have become diseased. From many inquiries that I have made in this district, where the soil is of a moderately heavy loam resting upon clay and chalk, I find that of the late varieties and those left in the ground the longest, nothing this year approaches Beauty of Hebron and Magnum Bonum for disease resistance. In my own garden I had a plot of Dakota Reds which are a very late variety, and were not lifted until the haulms had been completely cut down by the frosts of September. In these but few were diseased, while a plot of Prime Minister grown by their side were three-quarters bad. In one of Sir J. B. Lawes' experimental fields at Rothamsted, where Scotch Champion has now been grown for nine years in succession on the same land, and for four years previous to that the Rock variety was grown, and with the same description of manure applied to each plot of ground year after year, we find this year a smaller crop per acre than usual, and no kind of artificial manure that has been used appears to preserve the tubers from disease, although great differences are manifest in the quantities of bad developed, ranging from a few pounds to nearly a ton of diseased per acre. Potash salts seem to be a powerful preservative, but when these are applied together with large quantities of stimulating nitrogenous manures then the good effect of these salts appears to be neutralized. Peat-moss manure has been found in this neighbourhood a capital dressing for the growth of Potatoes, keeping the tubers beautifully clean and bright-skinned, and by keeping the soil open and assisting drainage, helps to promote disease-resistance. J. Willis, Harpenden.

LONG-LIVED CUCUMBERS.—Having for many years taken a deep interest in Cucumber growing, and with a large share of success—cultivators manage then in various ways both from seeds and cuttings—I quite agree with your correspondent, Mr. Froud, at p. 447, that there is very little difficulty in keeping Cucumber plants in good health for two years, provided they are grown in a properly constructed and well-heated houses. Twenty years ago I had the good fortune to raise a variety named Blue Gown, and in order to keep it true all the other seedlings were destroyed. It soon spread and filled the whole house, 16 feet by 10, producing some of the finest Cucumbers I have ever seen, and continued to bear for two years. Of course a little fresh soil and

liquid manure were supplied occasionally as required, and the older branches cut away from time to time, and young ones laid in. I have on many occasions allowed one plant to fill this same house, and am generally able to cut the best fruit for exhibition from plants grown on this method of extension. I prefer plants struck from cuttings for fruiting in summer, but seedlings for winter, as they have more vigour than cuttings, and in my opinion are more hardy. *T. Lochie, Oakley Court, Windsor.*

TUSSLILAGO FRAGRANS.—In an able and practical article on the formation of new herbaceous borders (p. 510), Mr. Horsfield gives a list of plants which he truly says will form "a fairly good and interesting collection;" there are, however, two species in that list that I would warn intending planters against introducing into their border; *T. fragrans* is one of these; it is a weedy looking plant, with dingy pale lilac flowers, very sweet, and produced in mid-winter. In a newly formed border the creeping rootstock would quickly run riot and become a nuisance, monopolising the ground to the detriment of the other plants; in fact, it is utterly unfit for a front-row plant, or any other part of the border. The flowers are certainly very welcome in the winter, and for these it could be planted in some semi-wild place. *T. farfara variegata* is a very pretty plant, but it has the same objectionable characteristic root as the former plant, and in rich soil there is always a danger of its reverting to the green type, which is a most difficult plant to eradicate. *J. W. Odell.*

GAS-TAR.—The way to use the gas-tar referred to in your last number, is to put a small piece of hay or straw-ropes round the stem of the bush close to the ground, and it should be about 3 or 4 inches high; when the leaves are nearly fully expanded give the ropes a good coat of gas-tar: as it does not take much time to do a lot of them, it may be repeated once or twice during the summer, and if some fresh gas-lime is sown under the bushes, it will be all the better, as it will kill any grub that may be near the surface of the earth, and I feel sure, that any of your readers who may give it a trial, will be highly pleased with the result. Bushes treated in this manner were not attacked, and others left to chance, were completely defoliated. *J. McIntosh.*

VIOLAS AS BEDDING PLANTS.—I think that if the Council of the Royal Horticultural Society could be induced to invite collections of these at one of their spring meetings, to be shown in bloom in pots or pans, a very interesting exhibit might be obtained. A large number of varieties is now being cultivated, including some charming new varieties, and it is necessary the public should have an opportunity of seeing them. If classes could be provided for them at the Temple show, and sufficient inducements offered to bring growers from a distance, a delightful feature would be secured. When it is remembered what a leading feature Pansies and Violas in pots make at the great Whitsun show at Manchester, and how much public notice they attract, it seems desirable that opportunity should also be afforded for such a display in London. *R. D.*

SOCIETIES.

NATIONAL CHRYSANTHEMUM.

THE great metropolitan show of the season, held at the Royal Aquarium, Westminster, on Wednesday and Thursday last, brought together more than 500 entries, resulting in the largest show the Society has yet held. The quality was excellent as regards the cut blooms, and less in plants in the groups. The large number of entries caused severe competition in most of the classes.

OPEN.

Incurred.—For forty-eight blooms, not less than twenty-four varieties, the place of honour was accorded to Mr. P. Doughty, gr. to Mrs. M. Tomlin, Angley Park, Cranbrook, for a stand of a truly superb lot of blooms of large size, even, clean, and solid, and of very fine substance, out of which the following varieties may be selected for name:—Golden Empress, Empress of India, Cherub, Norman Davis, Jardin des Plantes Violet Tomlin, Charles Gibson, Emily Dale, Princess of Wales, Alfred Salter, and Mrs. Hallburton. Mr. J. Horsfield, Heytesbury, Wilts, was 2nd, following

closely with a beautiful solid and clean lot of large blooms, of which Empress of India, Jeanne d'Arc, Bronze Queen, and Lord Alcester, were the finest, and Prince Alfred, Jardin des Plantes, Baron Beust, Golden Eagle, and Mrs. Rundle were also highly creditable. The 3rd place being accorded to Mr. J. McKenzie, gr. to T. S. Cornwallis, Esq., Linton Park, Maidstone, who also showed large blooms of very good form Lord Alcester, Golden Empress, Barbara, Jardin des Plantes, Mrs. Heale, Cherub, Hero of Stoke Newington, Lady Talford, and Princess of Wales being the finest shown.

Twenty-four, distinct.—In this smaller class Mr. Sullivan, gr. to D. B. Chapman, Esq., Downshire House, Roehampton, led with some capital flowers, but the general quality here was behind that of the forty-eight's—Barbara, Empress of India, Jardin des Plantes, Nil Desparandum, Golden Empress, John Salter, were the best—they were all rather inclined to be rather flat but in other respects they were good. 2nd, Mr. J. Doughty, with large blooms, but weak in the centre—Mrs. Hamilton, Mr. Bunn, Cherub, Princess of Teck, White Venus, and Jardin des Plantes, being the finest samples. Mr. A. Ives, gr. to E. C. Jukes, Esq., Hope House, Winchmore Hill, was 3rd, with blooms of good form and colour, but smaller than the foregoing—Lord Alcester and Golden Empress being good exceptions, however; and Mr. Bunn, Lord Wolseley, and Le Grand were the best of the others.

Twelve incurred.—Mr. T. Skinner, gr. to J. Aird, Esq., East Sutton Park, Staplehurst, was 1st in this class, from which those competing in the twenty-four were excluded; he had blooms of good average size and quality and of even form—Lady Hardinge, Empress of India, Princess of Wales, Queen of England, Emily Dale, and Jardin des Plantes being shown well.

Six blooms of any one variety.—Here there were eleven entries, and the competition was very close, Mr. J. Doughty leading with enormous heavy Golden Empress; while Mr. F. J. Thorne, gr. to J. T. Mackenzie, Esq., Sunningdale Park, Sunningdale, followed with Empress of India, but a shade smaller; and with the same variety Mr. J. Hewitt, gr. to H. B. Mackeson, Esq., Hill Side, Hythe, Kent, was 3rd.

Japanese, forty-eight blooms.—This was the leading class of the section, not less than twenty-four varieties were to be shown. Here Mr. J. McKenzie was a decided 1st, with a most wonderful lot of blooms, all large, vigorous, and brightly coloured, some being exceptionally large. E. Molyneux was a conspicuous bloom, and, indeed, showed up well all through the exhibition; others were Madame J. Laing, Criterion, Val d'Andorre, Soleil Levant, Madame de Sévin, Madame C. Audiguier, Comtesse de Beauregard, Elaine, L'Adorable, Mons. Brunet, and Baronne de Prailly. 2nd, Mr. W. Packman, gr. to C. E. Shea, Esq., The Elms, Foots Cray, Kent, with a very fine lot of uniformly good size and bright colour—Jeanne Delaux, E. Molyneux, Criterion, Soleil Levant, C. Orchard, Mons. Freeman, Elaine, Martha Harding, La Triomphante, and Comte de Germiny, being the most noticeable samples. The 3rd was Mr. Munro, gr. to E. J. C. Paul, Esq., Twickenham, who followed closely on the 2nd lot with Boule d'Or, F. A. Davis, Magnum Bonum, Val d'Andorre, Duchess of Albany, M. Marrouch, E. Molyneux, and Madame C. Audiguier, as the best. These prizes were awarded in a keen race of fourteen competitors.

Twenty-four, distinct.—The best were from Mr. C. Cox, gr. to J. Trotter, Esq., Brickenden Grange, Hertford, who led with an even stand of blooms of fine size and very bright colours, of which the best were E. Molyneux, Carew Underwood, Peter the Great, Criterion, Madame C. Audiguier, Ralph Brocklebank, Soleil Levant, Mons. Tarin, and Le Triomphante. 2nd, Mr. J. Brown, gr. to Mrs. Waterlow, Great Doods, Reigate, with a fair even lot, with L'Or de Japon, Margot, Madame de Sévin, Dr. Macary, Carew Underwood, C. Orchard, Madame Baco, and Duchess of Albany, being the best represented. Mr. J. C. Waite, Glenhurst Gardens, Esher, was 3rd, with finely coloured blooms of even average size, of which Duchess of Albany, Criterion, and Mrs. H. Cannell, were good.

Twelve distinct.—There was a capital show and an excellent competition in this class, from which exhibitors in the foregoing class were debarred. Sixteen lots were staged, and the leading prize was taken by Mr. S. Skinner, for a stand of very handsome blooms, slightly above the average for size, E. Molyneux, Golden Dragon, C. Underwood, F. A. Davis, Madame de Pigny, and Madame C. Audiguier

being fine examples. A close 2nd was made by Mr. C. Edwards, gr. to W. Owen, Esq., The Elms, Castle Bar, Ealing, with smaller blooms, but very good, especially in Madame C. Audiguier, Boule d'Or, Val d'Andorre, Madame J. Laing, Criterion, and Soleil Levant. Following very closely indeed upon this lot was a stand from Mr. S. Simpson, St. John's Nursery, Chelmsford, whose blooms of Japonais, Madame Audiguier, Val d'Andorre, and Maiden's Blush were the best.

Six blooms (one white variety).—As many as seventeen exhibitors staged in this class, and the result was one of the features of the occasion. Competition ran close indeed, and a place of well-deserved honour was taken by Mr. J. McKenzie, with Meg Merrilies, very pure for that variety; Mr. W. Jupp, gr. to G. Boulton, Esq., Eastbourne, with Avalanche, was a near 2nd; and 3rd, Mr. W. Russell, gr. to Dr. C. H. Lewis, with fine samples of Mdlle. Lacroix.

Six Japanese, any colour, one variety.—The fourteen entries produced a number of most beautiful and handsome blooms, Mr. J. McKenzie leading well with superb examples of E. Molyneux, very large, and gloriously coloured; 2nd, Mr. J. Doughty, with large, and highly coloured Belle Paule; 3rd, Mr. J. Hewitt, Maiden's Blush being the variety; other exhibits here were also very creditable.

Twelve reflexed, large-flowered.—These were shown to the number of six lots, the 1st prize falling to Mr. C. Cox, gr. to J. Trotter, Esq., Hereford; the best blooms were Dr. Sharpe, Cloth of Gold, White Christine, King of Crimsons, and Chevalier Domage. 2nd, Mr. Howe, gr. to H. Tait, Esq., Park Hill, Streatham Common—Chevalier Domage, Cloth of Gold, and Dr. Sharpe being his best blooms. Mr. Hill, gr., Buckborough Park, Hythe, was 3rd, for a very good dozen, the varieties chiefly those already noted.

Twelve Japanese reflexed.—In a good competition the 1st place was taken by Mr. J. Hewitt, with large and full fine flowers of good substance—indeed, the blooms were all good in this class; Criterion, Maiden's Blush, Amy Furze, Jeanne Delaux, and Val d'Andorre were the best. 2nd, Mr. J. Kipling, gr. to Lord Lytton, Knebworth, with excellent even blooms of not over-large size; we noticed two very good flowers of Jeanne Delaux. Mr. D. Hill, gr. to F. D. Brockman, Esq., Beachborough Park, Hythe, followed closely, with Amy Furze, Maiden's Blush, F. A. Davis, and Val d'Andorre, a good form, and bright.

Twelve Anemone, large flowered.—In this class the entries numbered five, and the blooms generally were of excellent quality without any great disparity between the various lots. 1st, Mr. M. Sullivan, gr. to D. B. Chapman, Esq., Downshire House, Roehampton, with well furnished blooms of Nouvelle Alvede, Lady Margaret, Acquisition, and Thorpe Junior, a flower much like Glück, but having an orange-yellow centre instead of being all of one shade of yellow. 2nd, Mr. Ives, gr. to E. C. Jukes, Esq., Hope House, Wimbledon, smaller blooms, and perhaps they were less dressed; 3rd, Mr. M. Russell, gr. to C. H. Lewis, Esq., Henfield, with nice flowers, but too small.

Twelve Japanese Anemones.—The best stand of these was that put up by Mr. Ives, Hope House, whose Madame Cabrol, Jeanne Marty, La Deuil, very fine crimson; Sour Dorothy Souelle, and Madame Bertha Pigny were fine large flowers.

There were three nice stands of the pretty Anemone pompons, so useful as cut blooms and when grown as small plants. 1st, Mr. R. Whibley, King Edward's School, Southwark; 2nd, Mr. Hillier, 3, Priory Road, Wandsworth.

Pompons as cut flowers were sparsely shown, Mr. Russell, of Henfield, taking 1st; and Mr. Duncan, gr., Warnham Court, Sussex, 2nd.

M. Delaux's Prizes.—M. Simon Delaux, Toulouse, France, offered prizes for the best and largest varieties sent out by him in the years 1887 and 1888, and Messrs. Davis & Jones, Lilford Nurseries, Camberwell, contributed a collection of about fifty varieties in small examples; M. Bergman, a reflexed Japanese, very bright yellow, the petals curled—very pretty; Mdlle. Louise Leroy, white, fluted and pointed, Japanese reflexed; Madame Meyard, Mr. Drake, and Othello may be selected as the best. Mr. W. Holmes, Frampton Park Nurseries, Hackney, was a good 2nd in this division, with smallish bright flowers of Mrs. J. J. Hillier, Lincoln's Inn, Leader, and Mdlle. Louise Lacroix. 3rd, Mr. Owen, Maidenhead, with Lucien Baltet and Malibran, among others. These were the only exhibitors.

Auteurs who do not employ paid Assistants.—

Twelve incurred.—This small competition brought some skillfully grown and manipulated flowers, a few perhaps being a trifle over-blown. The 1st prize was taken by Russell Bradbury, Esq., Wealdstone, Harrow, whose best bloom was Empress of India, which was about twice as large as a specimen of G. Glenn, the smallest. 2nd, Mr. G. P. Clarke, Fishpool Road, Hitchin, with large blooms, but a little rough looking; 3rd, Dr. Walker, 12, Lingfield Road, Wimbledon, whose blooms were fair and even as regards size.

Six Incurred.—In this class were nine entries. 1st, Mr. F. Glascock, South Street, Bishop's Stortford, whose flowers were magnificent—Alfred Salter, Empress of India, and the golden variety, Queen of England and Prince of Wales, being the finer ones. 2nd, Russell Bradbury, Esq., with neat but much smaller flowers—Jeanne d'Arc, Nil Desperandum, and Refulgence were his best; Mr. Walker, Wimbledon, took the 3rd prize.

There were eleven entries in the class for twelve Japanese, and Mr. T. Carruthers, Reigate, Surrey, contributed a stand of very fine flowers of good average size, which do him great credit, the best being Soleil Levant, L'Ordu Japon, Mons. Freeman, and Val d'Andorre. M. H. Briscoe Ironside, Esq., The Firs, Foot's Cray, Kent, had a fine bloom of Mons. J. Laing and J. Mahood, and Val d'Andorre were also good; he was a close 2nd; Russell Bradbury, Esq., Wealdstone, Harrow, coming in as a creditable 3rd, having Madame R. Rendatler, Dormillon, and Peter the Great in fine examples.

In the smaller class there were the same number of entries, the place of honour being taken by Mr. H. Fincham, Union House, Craubrook, who had a very splendid lot, in which Mlle. Lacroix, Belle Paule, Carew Underwood, and Dormillon figured well. Mr. Glascock was 2nd, with M. Marrouch and R. Brocklebank; and 3rd, H. Briscoe Ironside, Esq., following closely, showing good specimens of W. Holmes, E. Molyneux and Paule Doutour.

Amateurs employing one Gardener, and Single-handed Gardeners.—Twelve incurred.—In this competition there were seven entries, and the flowers were generally of fair quality, if not of Brobdingnagian proportions. 1st, Mr. Emery, gr. to R. W. Tweedie, Esq., Avoca, Eastbourne—the usual good varieties finding place on the stands; 2nd, Mr. Todd, gr. to Dr. Southey, Sutton Vallance, Kent, with full-formed, smooth blooms; 3rd, Mr. W. Rogers, Elwick Road, Ashford, Kent—a nice even lot of blooms less fully blown than those which took the better prize.

Six incurred.—Here there were ten entries, Mr. Emery taking the 1st place. Mr. G. Jordan, gr. to the Rev. H. Berners, Hawkstead Rectory, Ipswich, the 2nd, with fair blooms that were even as to size; and Mr. Todd the third.

Twelve Japanese Distinct.—In the leading class for Japanese blooms, Mr. Todd was 1st with a stand of very fine solid flowers of good substance—Margaret Marrouch, Soeiel Levant, Jeanne Delaux, Criterion, Dormillon, and Madame Laing were the best. Mr. A. Emery followed with large bright samples of E. Molyneux, Soeiel Levant, Madame Baco, Madame J. Laing, Avalanche, and Maiden's Blush. 3rd, E. Mawley, Esq., Rosebank, Berkhamstead, for an even clean, and vigorous lot of blooms, in which Comte de Germiny, M. Marrouch, Martha Harding, Peter the Great, Madame B. Rendatler and Belle Paule may be named.

Six Japanese Distinct.—There were fourteen lots staged here and a fine lot of blooms were shown; competition was keen, and Mr. Emery led with Madame Baco, E. Molyneux and Avalanche in fine specimens, large and bright. 2nd, Mr. Todd, who followed closely with Maiden's Blush, Madame de Sévin, and J. Delaux as his best. 3rd, Mr. T. Caryl, gr. to A. J. Meissner, Highgate, with fair and very bright blooms of Soeiel Levant and Belle Paule as his chief.

Metropolitan Classes.—Twenty-four incurred, not less than eighteen varieties.—Here Mr. Gilbey was 1st, with fine globular, full flowers of the best varieties—the back row being composed of very fine flowers; 2nd, F. Bingham, Esq., 6, Bethune Road, Stoke Newington, whose stand was but few points behind Mr. Gilbey's, only the front row exhibiting weakness.

Twelve incurred, distinct.—In this competition Mr. Gilbey succeeded in taking the 1st place, with medium-sized flowers of very fair quality: Mr. R. Nichols, Verandah House, Upper Clapton, was 2nd, with full regular sized blooms, of fair size.

Japanese—Mr. Buck, gr. to — Seligman, Esq., South Kensington, was the leader, with twelve distinct good-quality blooms, Criterion, Val d'Andorre,

and Mlle. Lacroix being good sized samples; Mr. Gilbey was 2nd, with small flowers; the same exhibitors taking the corresponding places in the class for six distinct, and showing blooms of the same quality as in the larger.

THE SOCIETIES' CHALLENGE TROPHY.

This is a prize offered to be competed for by gardening societies, the collection to be made up of blooms selected from the collections belonging to the members of the Society. There is a cash prize of £10 to go to the growers, and a trophy to be held by the President of the winning society for one year. On this occasion there was a good display here, the class consisting of twenty-four incurred and twenty-four Japanese blooms. The successful society was "The Weald of Kent Gardeners' and Cottagers' Mutual Improvement Society," and all the blooms were the contribution of one member, Mr. Doughty, whose name appears elsewhere in the prize list; he had a fine lot of large, clear, even and bright blooms of high quality—E. Molyneux, Carew Underwood, Madame B. Rendatler, Madame de Sévin, Belle Paule, Madame Baco, Madame C. Audiguier, Dormillon, Criterion, Boule d'Or, and Grandiflora were good Japanese; and of incurred, Lord Alcester, Golden Empress, Bronze Queen, Hero of Stoke Newington, A. Salter, Jardin des Plantes, Violet Tomlin, and Empress Eugenie. Other exhibits were good also.

GROUPS OF PLANTS IN POTS.

The groups were this year not quite up to the last year's standard in vigour and substance. In the group to be arranged in 100 square feet, Messrs. Davis & Jones were 1st with a well-balanced group of neat and good plants, well flowered and bright; 2nd, Mr. J. Judd, gr. to F. W. Prior, Esq., Gordon House, Blackheath, with plants bearing smaller blooms; 3rd, Mr. J. Townsend, Providence Nursery, Putney, who had some good incurred varieties. For a decorative group of Japanese in 60 square feet, Messrs. J. Laing & Son, Forest Hill, S.E., led with a tasteful arrangement of well-flowered dwarf plants, chiefly in 48 pots, and three or four blooms on a plant, and good samples of the popular varieties were to be noticed with some few of the more recent. Mr. J. W. Witty, London Cemetery Co., Highgate, was second with plants not so well flowered; also dwarf. Messrs. Davis & Jones being a fair 3rd, with small flowered plants.

Trained Plants.—Mr. J. Brooks, gr. to W. Reynolds, Esq., The Grange, Highgate, led for nine trained specimens with dwarf plants, well flowered, of Elaine, W. Robinson, Margot, Mad. B. Rendatler, Bouquet Fait and Lady Selbourne. It may be remarked that this section of the show was a decided improvement in quality over last year, 2nd, Mr. Easey, gr. to J. W. Jones, Esq., The Grange, Highbury, with standards bearing rather smaller blooms—l'Africaine, Margot, and Christian (Golden) being the best. Mr. W. Davey, gr. to C. C. Paine, Esq., Cedar House, Stamford Hill, N., was 3rd, following closely with similar plants.

The best four standards were from Mr. S. Gilbey, gr. to B. B. Booth, Esq., The Cazenoves, Upper Clapton, with Margot, Madame B. Rendatler, and Dr. Sharpe, in fine condition. Mr. Davey was 2nd, with less vigorous plants; and 3rd, Mr. G. H. Cooper, nurseryman, Sydenham Road, Croydon, with small-headed plants. This exhibitor also showed in the class for six trained pompons, where he showed a reflexed, and was disqualified, but was awarded an extra prize; and he was also again to the fore with six trained specimens, large-flowering varieties, having Madame B. Rendatler, Margot, and Mlle. Lacroix, as the best; 2nd, Mr. Easey, with good low standards; and 3rd, Mr. H. Lovegrove, gr. to H. Spicer, Esq., Highbury, who showed well. The best four were from Mr. F. E. Wright, gr. to Miss Oxley, The Lawn, Upper Clapton, having Bouquet Fait, Source d'Or, and Margot, as fine samples of low pyramids; Mr. Lovegrove coming 2nd, with fair samples; and in the class for prizes offered by Messrs. Wood & Son, Mr. G. H. Cooper added one more honour to his list.

FRUITS AND VEGETABLES.

Apples.—These were largely and finely shown, and there was much more colour in them than might have been expected. Mr. C. J. Goldsmith, The Gardens, Kelsey Manor, Beckenham, was placed first with excellent fruit of Red Reinette, Gascoignes, Ribston, Blenheim Orange, Cox's Orange Pippin and Wor-

cester Pearmain. Mr. F. Miller, Northlands, Margate, was a capital second, with 6 dishes of Culinary Apples. Mr. J. McKenzie, The Gardens, Linton Park, Maidstone, was 1st with grand samples of Peasgoods' Nonsuch, Stones, New Hawthornden, Emperor Alexander, Stirling Castle and Gloria Mundi. Mr. F. Miller, was again 2nd, with a very fine lot, indeed the Culinary varieties were particularly fine.

Pears.—These were finely shown in dishes of 6. Mr. C. J. Goldsmith coming in 1st, with Duchesse d'Angoulême, Pitmaston, Duchess Beurre, Diel Durandean, Beurre Bachelier, and Louise Bonne of Jersey; 2nd, Mr. W. Allan, The Gardens, Gunton Park, Norwich.

Grapes.—The best three bunches of white Grapes was Muscat of Alexandria, from Mr. A. Luff, The Gardens, Oakfield, Wimbledon; Mr. C. J. Goldsmith being 2nd, with the same variety.

The best three bunches of black Grapes were very finely fruited black Alicante from Mr. Howe, Park Hill, Gardens, Streatham Common; Mr. J. Batten Hollywood House Gardens, Wimbledon Park, being 2nd, with Gros Maroc.

The best three bunches of Gros Colman were shown by Mr. J. Lambert, Onslow Gardens, Shrewsbury; Mr. J. Craven, Osborn, Potter's Bar, being 2nd.

Three very fine Providence Pine-apples from Mr. C. Ross, The Gardens, Welford Park, Banbury, were highly commended.

Potatoes.—These are very finely shown all round. The samples were large, clean, and remarkably fine in shape. The best twelve dishes came from Mr. J. Hughes, the Gardens, Eydon Hall, Byfield, who had splendidly finished examples of Chancellor, Snowdrop, Abundance, Sutton's Thirty-six, Purple Perfection, Queen of the Valley, London Hero, Adirondack, and Reading Ruby. 2nd, Mr. E. S. Wiles, the Gardens, Edgemoor Park, Banbury.

Mr. Wiles had the best six dishes, having Satisfaction, Snowdrop, and Mr. Breesie, of splendid quality. Mr. Hughes was 2nd.

The special prizes offered by Messrs. Sutton & Sons for three dishes brought a very keen competition, and here Mr. E. S. Wiles was 1st, and Mr. G. Goldsmith, Floore Gardens, Weedon, 2nd.

Mr. Wiles was also 1st in the class for nine varieties, the special prizes offered by Mr. C. Fidler, staging some very fine tubers; Mr. L. Harris, Bradenshaw, High Wycombe, being 2nd.

Mr. Fidler's three dishes were also well competed for, Mr. J. Hughes being 1st, and Mr. E. S. Wiles 2nd.

With three dishes, Mr. L. Harris was 1st, and Mr. R. Lye, Sydmon Court Gardens, Newbery, 2nd.

Vegetables.—These were also numerous and very finely represented. Messrs. Sutton & Son's prizes for six dishes brought great competition; the best coming from Mr. L. Haines, The Gardens, Colleshill, Shrivvenham. Mr. C. J. Waite, The Gardens, Glenhurst, Esher, being 2nd.

Messrs. Webb & Sons also offered special prizes for six dishes, Mr. J. Hughes being 1st, and Mr. R. Lye, 2nd.

The best nine specimens of Rousham Park Onion came from Mr. N. Kueller, Malshanger Gardens, Basingstoke; Mr. A. Miller, the Gardens, Rood Ashton, Trowbridge, being 2nd.

Mr. T. Doherty, the Gardens, Wroxton Abbey, Banbury, had the best six specimens of Deverill's Anglo-Spanish Onion, Mr. A. Miller being 2nd.

Mr. Doherty was also 1st with Improved Wroxton, Mr. C. W. Howard, Bridge, Canterbury, being 2nd.

Really the Onions were wonderfully fine.

Miscellaneous Exhibits.—These filled a great space of tabling. Of Potatoes, Messrs. Sutton & Sons and C. Fidler had very large representative collections of great merit; and Messrs. H. Deverill & Sons, very fine samples of their new Onions and vegetables. Of Apples and Pears, highly meritorious collections came from Messrs. James Veitch & Sons, T. Rivers & Son, G. Bunyard & Co., C. Lee & Son, and Messrs. J. Laing & Co. A long table of very handsome Ferns was set up very tastefully by Mr. B. May, Dyson's Lane Nursery, Edmonton. Messrs. H. Cannell & Sons, Swanley, Kent, contributed a very extensive collection of blooms of tuberous Begonias and plants of B. The Octavia in flower, and only about 6–8 inches high. The colour is pure white. Also a number of bunches of zonal Pelargoniums, and a large number of cut Chrysanthemums, including the leading favourites. Messrs. Hooper & Co., Covent Garden, sent a collection of Primulas in pots.

FLORAL COMMITTEE.

The Floral Committee met on Thursday. At this gathering, there was a good attendance. The President, Mr. E. Sanderson, in the chair. A large number of new varieties were sent for inspection. First-class Certificates were awarded to the following varieties:—James Weston (Japanese Anemone), the grand petals pure white, with primrose centre, very pretty and pleasing, from Mr. J. Ridout, gr. to T. B. Haywood, Esq., Woodhatch, Reigate; George Daniels (Japanese), delicate pink, very fine; Avalanche (Japanese), pure white, very fine and pleasing; Fimbriatum (Japanese), delicate blush, pale primrose and white centre; and Miss Girten (Japanese), delicate silvery peach, darker in the centre—all from Mr. R. Owen, nurseryman, Maidenhead. To Florence Percy (Japanese), a charming pure white variety, from Mr. E. Molyneux, The Gardens, Swanmore Park, Bishops Waltham; to Alfred Lyne (incurred), a pretty silvery-lilac sport from the white; Novelty, a very full and fine flower, from Mr. J. Lyne; to Othello (Japanese), orange-buff, with a dark reddish-brown centre, fine and full; from Mr. George Stevens, St John's Nursery, Putney; and to Mons. Bernard (Japanese), dark magenta, with silvery reverse; from Messrs. J. Laing & Co., Stanstead Park Nursery, Forest Hill.

A golden sport from Mrs. Heale (incurred) came from Mr. H. R. Hayes, which the committee wished to see again in better condition; the same request was made respecting Miss Mary Byass (Japanese), a charming flesh-coloured sport from Madame J. Laing; one flower only being produced. Mr. W. Holmes, Frampton Park Nursery, Hackney, sent Mrs. J. J. Hillier (Japanese), a very pretty variety in the way of Faustine. The committee wished also to see this again. Albert Victor (Japanese), from Mr. J. Ridout, is a very promising variety, but shown on this occasion in poor form. A yellow-flowered single annual Chrysanthemum named Golden Fleece, from Mr. R. Owen, was Commended.

A vote of thanks was passed to Mr. E. Baxter, gr. to R. C. L. Bevan, Esq., East Barnet, for a basket of seedling winter-flowering Pinks, that promise to be very useful for cutting from.

From Mr. G. Braid, Winchmore Hill, came a bright deep red *Primula sinensis*, of good colour.

KINGSTON AND SURBITON.

NOVEMBER 6.—Despite the unfavourable nature of the weather, the Kingston Chrysanthemum Society was able to hold an excellent show on the above date, which promises well for the general quality of exhibition blooms. It is true that in former years there have been fine shows at Kingston, but the exhibition of this year was very satisfactory in all sections, and the entries were numerous, and the competition keen.

For a collection of forty-eight cut blooms, twenty-four Japanese and twenty-four incurved, there was offered (for the first time) a fifth Challenge Vase, presented by Sir W. Ellis, Bart., M.P., the vase becoming the property of the exhibitor who shall win it twice. Here Mr. E. Coombs, gr. to T. W. Furze, Esq., Teddington, staged a magnificent lot, and was especially strong in the Japanese, having bloom of large size, clear and bright, the best being Val d'Andorre, Mons. Freeman, Ed. Molyneux, Fair Maid of Guernsey, Mons. Delaux, Madame C. Audiguier, Soleil Levant, and Madame J. Laing.

The incurved flowers were also of a high order, and uniformly neat, excellent samples of Lord Alcester, Princess of Wales, James Salter, Queen of England, Golden Eagle, Beauty, Mr. Bunn, Refulgence, and Lord Wolseley, being shown. In the 2nd prize lot, from Mr. J. Quarterman, gr. to C. E. Smith, Esq., Cobham, there were some fine Japanese blooms, of which S. Molyneux, Jeanne Delaux, Soleil Levant, Carew Underwood, and Madame C. Audiguier, were the best. Incurved blooms were rather flat, Princess of Teck, however, being good. The 3rd place was accorded to Mr. R. Cawte, gr. to T. J. Robinson, Esq., Brookleigh, Esher, with Lord Alcester, as the best incurved, and Brocklebank, C. Orchard, E. Molyneux, and Baronne de Prailly, as the leading Japanese, which were all of high merit, but the incurved were not fully developed.

Incurred.—In the leading class for (twenty-four the best stand was set up by Mr. C. Gibson, gr. to J. Wormald, Esq., Morden Park, Surrey, the back row containing a grand lot of blooms, Alfred Salter, Empress of India, Lord Alcester, Princess of

Wales, and Jardin des Plantes, being particularly noticeable. Mr. Coombs followed well with a neat lot of smaller flowers, with strong blooms of Lord Alcester and Princess of Wales; 3rd, Mr. Sullivan, gr. to D. B. Chapman, Esq., Downshire House, Roehampton, also having an even, clean stand; 4th place being accorded to Mr. Allen, gr. to Sir G. Russell, M.P., Sallowfield Park, Reading, whose excellent blooms of Lord Alcester was selected as the premier incurved of the show: it was very even and clean, measuring across its face from edge to edge, 10 inches.

The stands of twelve incurved brought out a good display, and a keen competition, Mr. C. Slade, gr. to Lady Bowater, Richmond Park, taking the leading honours with large well grown blooms, Lord Alcester, Empress of India, Golden Empress, Mr. Bunn, and Alfred Salter, being the best; Mr. W. Reed, gr. to E. Pettit, Esq., Oatlands Park, Surrey, following closely with an even and clean lot—Barbara, Mr. Bunn, and Lord Alcester, showing up well.

In the minor class for six incurved (one variety), the 1st place was given to Mrs. J. Daniels, Inglewood, Kew Gardens, for solid and heavy blooms of Empress of India, which would have looked better if they had not been displayed on blue paper over the stands; Mr. Coombs followed with Golden Empress of India. There were fourteen competitors.

Japanese.—The colours of the blooms in this section were beautifully bright, and the blooms generally of fine size; the best twenty-four were those of Mr. C. Gibson—a very beautiful stand of bright, even, and large blooms, strong in the following:—E. Molyneux, C. Andiguier, Sarah Owen, Val d'Andorre, Maiden's Blush, Criterion, Carew Underwood, Madame J. Laing, Yellow Dragon, and Mrs. J. Wright.

Very closely following was Mr. J. Munro, gr. to E. T. Paul, Esq., Cambridge House, Twickenham, with large and clean specimens of F. A. Davis, M. Marrouch, Fair Maid of Guernsey, Val d'Andorre, Madame C. Audiguier, Magnum Bonum, Domino, and a specially fine bloom of Boule d'Or, measuring 10 inches across, selected as the premier Japanese in the show.

Mr. C. Beckett, gr. to F. H. Bryant, Esq., Juniper Hill, Dorking, was a capital 3rd, with F. A. Davis, Madame C. Audiguier, Soleil Levant, Avalanche, and Hamlet, in fine specimens.

In a very close and large competition for twelve Japanese, distinct, Mr. J. Snow, with large, bright flowers, led, having, as his finest, E. Molyneux, Soleil Levant, F. A. Davis, Madame C. Andiguier, and Brocklebank; 2nd, Mr. J. Williams, gr. to J. Pearson, Esq., The Grange, Kingston, with Soleil Levant, E. Molyneux, Hamlet, and Duchess of Albany, as the best. Mr. R. Cawte was 3rd, showing very clean and neat, but rather smaller blooms.

Mr. J. Snow, South Park Gardens, Wadhurst, Sussex, had the best six blooms of one variety, taking the first place with excellent large samples of E. Molyneux. Mr. C. Beckett and Mr. Coombs were respectively 2nd and 3rd, with Madame C. Audiguier and Duchess of Albany. There were many exhibitors, and the prize winners all had highly creditable blooms.

Reflexed, Anemones and Pompons.—Mr. Cawte and Mr. C. Gibson were the prize-winners in the order named for twelve reflexed blooms, the former having bright, even, and good-sized flowers of Cullingfordi, Chevalier Damage, Amy Furze, Dr. Sharpe, and King of Crimsons; Mr. Gibson's lot being very fine, but of smaller size.

Mr. Sullivan took the leading honours in the class for twelve Anemone-flowered varieties, and also for twelve Japanese ditto, and in both instances he led well, his finest varieties being Lady Margaret, Gluck, Acquisition, Emperor, Jeanne Marty, Bacchus, Marguerite Solleville, and Margouline, all being large and clean. Mr. G. Woodgate, gr. to the Lady Wolverton, Warren House, Kingston, followed in the Japanese flowered, and Mr. Coombs in the other section, each having clean and bright samples. Mr. C. Slade took 1st for Anemone pompons, having Antonius, Astarte, Miss Nightingale, and Astrea.

Anateurs.—In the section confined to amateurs who do not employ a gardener on more than one day per week, there were some highly creditable exhibits, Dr. Walker, of Wimbledon, leading for incurved varieties; and Mr. Smithers, who followed here, led for Japanese with fine blooms; pompons being best represented by Mr. E. Drovett, The Firs, Teddington.

Plants in pots were fairly numerous, and several were good specimens, evidencing careful cultivation, especially in the case of trained incurved, but it is needless to particularise here, Messrs. Cawte and

Reed dividing the chief prizes between them, the former leading in the majority of cases.

Groups.—There were two classes provided for these, Mr. G. Springthorpe, gr. to R. H. Alexander, Esq., Gifford House, Roehampton, receiving 1st, for a group of Chrysanthemums in pots arranged for effect in 50 square feet, who had some really fine blooms here, fairly well mixed, but the Japanese varieties in the greater part. Mr. H. W. Pitcher, gr. to Mrs. Dunnage, Albury House, Surbiton, was 2nd, but was a long way behind.

For the group of miscellaneous plants arranged for effect in 100 square feet, Mr. J. Buss, gr. to A. Aston, Esq., West Hill Lodge, Epsom, was awarded 1st, for a tasteful and neat arrangement of Crotons, small Palms, Bouvardias, Chrysanthemums, Odontoglossum grande, and Adiantums as a base. 2nd, Mr. T. A. Glover, gr. to F. Ellis, Esq., Manor House, Wallington, with a pretty combination of Crotons, Dracenas, Pandanus, yellow Oncidiums, Cyrtipediums, and Araucaria excelsa as a centre, but the whole arrangement was too flat.

Fruit.—Grapes were very fine, especially the black varieties, where, out of fifteen competitors, Mr. C. Griffin, gr. to Miss Christy, Coombe Bank, Kingston, led with three fine bunches of Black Alicante, closely followed by Mr. T. Batten, gr. to A. Venables, Esq., Hollywood, Wimbledon, with Gros Maroc, in fine condition; and 3rd, Mr. Bowerman, gr. to C. Hoare, Esq., Hackwood Park, Basingstoke, with Black Alicante, all three exhibits being well finished, and large in the berry. Mr. Griffin and Mr. Bowerman were 1st and 2nd in a good competition for white Grapes, having excellent large, and finely coloured Muscat of Alexandria. Mr. W. Bates, Poulett Lodge, Twickenham, and Mr. Glover were respectively 1st for Apples and for Pears (four dishes), with clean fruit in both cases.

SOUTHAMPTON CHRYSANTHEMUM.

NOVEMBER 1 AND 2.—The show of the Royal Southampton Horticultural Society held as usual in the Victoria Skating Rink was a fine affair; the competition keen, and the flowers, &c., of the first quality, particularly when the earliness of the date and the lateness of the season are considered. Cut bloom was the most important section, and as many as 1,040 blooms were exhibited.

The specimen plants and groups were all that could be desired. Fruit was meritorious and made a fine show, particularly the Grapes; and the vegetables shown were good and in large quantities.

Cut blooms, in twenty-four varieties class.—Eleven competed, the first prize falling to Mr. E. Molyneux, gr. to W. H. Myers, Esq., Swanmore Park, Bishop's Waltham, for capital specimens of the Japanese varieties, such as Edwin Molyneux, Golden Dragon. The incurved varieties were full, solid, and well finished—Empress of India, Lord Alcester, and Queen of England being most conspicuous. 2nd, Messrs. W. and G. Drover, of Fareham, the Japanese were good, but less even than in the 1st prize stand, while the incurved flowers were rather weak in the back row.

Mr. Molyneux won easily in the twelve blooms class with flowers identical in quality to those in the previous competition; 2nd, Mr. Neville, gr. to F. W. Flight, Esq., Twyford, Winchester.

For twelve incurved, distinct varieties, Mr. Inglefield was 1st with moderate flowers; 2. Mr. C. Wade, gr. to Sir F. Bathurst, 2nd.

Twelve Japanese.—1st, Mr. Inglefield, with clean, even, fresh blooms. Mr. C. Brooks, gr. to H. A. Simmonds, Esq., Red Rice, Andover, was 2nd. Eleven competitors entered.

Messrs. Drover staged the best among nine lots of twelve Anemone-flowered varieties.

Mr. Allen was 1st for twelve reflexed varieties, with neat, fresh, not over-large blooms.

Plants were best staged by Mr. W. Joy, nurseryman, Shirley, and Mr. Wills, gr. to Mrs. Pearce, The Firs, Bassett, the former taking leading honours for four Japanese varieties, and for the best white flowered variety to be grown with Ichthemio Guano, the prize in this case being given by Mr. W. Colchester, to a fine plant of Lady Selborne, fully 5 feet in diameter and freely flowered; the other varieties were Bouquet Fait, Mdle. Bertie Rendatler as the best.

Mr. Wills took leading honours for the best four varieties, incurved or reflexed; and the 1st prize for a single specimen, incurved or reflexed, with Dr. Sharpe.

Mr. Busby, gr. to F. Willan, Esq., Thornhill Park

Bitterne, Southampton, staged the best group, occupying a space 10 feet by 6 feet, the plants being dwarf, well clothed with foliage, and with blooms of good quality.

Fruit made a capital display, especially the Grapes, the competition being keen, while the best Pine-apple, a Smooth Cayenne, came from Mr. Richards, Somersley, Ringwood.

Fruits and vegetables were shown in great quantities and of generally fine quality, moreover some few Orchids were exhibited by local cultivators.

HAVANT CHRYSANTHEMUM.

OCTOBER 31.—The Havant Chrysanthemum Society was the first to start the show season of the Chrysanthemum by holding its show at this rather early date; but, as the result proved, the Chrysanthemums shown, particularly the cut blooms, in which much rivalry existed in the neighbourhood amongst local growers, were very fine.

Cut blooms being the most important part of the exhibition, we will notice first the twenty-four distinct varieties, half to be incurved, and the remainder Japanese. Mr. C. Penford, gr. to Sir F. Fitzwygram, Bart., Leigh Park, Havant, was 1st, showing Edwin Molyneux, Carew Underwood, Martha Hardinge, Thunberg, Golden Empress, and Princess of Wales; 2nd, Mr. A. Payne, gr. to Mrs. Smith, The Oaks, Emsworth, whose incurved flowers were his best.

The winners of the best eighteen varieties were—Mr. W. Roberts, gr. to E. R. Longcroft, Esq., Havant, 1st, with massive specimens of Lord Alcester and Empress of India, Belle Paule, and other fine varieties; and Mr. J. Agate, Havant, 2nd, he also showing well.

In the twelve Japanese, Mr. A. Payne won the 1st place, flowers of C. Audiguier and Balmorean being very noteworthy.

In the incurved class, Mr. C. Penford staged the best twelve. Very fine were Princess of Wales, Jean d'Arc, Lord Wolsley, and Pince Alfred.

For twelve large Anemones, 1st, Mr. Woodgine, gr. to Captain Boyd, Emsworth.

Mr. Penford staged the best twelve reflexed blooms in six varieties—a neat lot, King of Crimson, Dr. Sharpe, and Cullingfordii being the best.

For twelve Japanese Anemones, Mr. Penford took leading honours with a good stand, Bacchus, Margaret, Villageoise, and Fabian de Mediana being the best.

Mr. Roberts had the best group of Chrysanthemums—40 square feet—a capital lot, well arranged and carrying massive blooms.

Mr. Agate had the best group of pompons, well arranged and consisting of some of the leading varieties.

Mr. N. Fuller, gr. to Sir F. Clarke Jervois, Bart., Idsworth House, Horndean, staged the only collection of specimens in six varieties which were creditable.

Fruit and vegetables were likewise shown.

SCOTTISH HORTICULTURAL ASSOCIATION.

THIS Society held its ordinary monthly meeting on the 6th inst. in S. St. Andrew Square, Edinburgh, Mr. Malcolm Dunn, Dalkeith Gardens, in the chair. A paper was read by Mr. Henderson, Secretary of the Edinburgh Cemetery Company on the subject of "Cemetery Decorations." In contrasting the old churchyards with the modern cemetery the writer gave an interesting *resumé* of the progress that had been made during the past generation in taste and in sanitary conditions in relation to burial places. The paper was listened to with much interest, and after appreciative and critical remarks by Messrs. Hugh Fraser, Riddell, Laird, Sutherland, McKenzie, and others, which were wound up by the Chairman, a cordial vote of thanks was given to the writer.

Of exhibits on the table were six pots of *Calanthe Veitchii* from Mr. Smith, The Gardens, Dysart House, which were remarkable examples of superior culture. The spikes were exceptionally strong and floriferous and the lower part of the stems clothed with large foliaceous bracts. A Cultural Certificate was awarded to the exhibit. Messrs. Dicksons & Co. exhibited a collection of pompon and Cactus Dahlias, and French and African Marigolds, in beautiful fresh condition, from their Pilrig Nurseries, as showing the mildness of the season; and Messrs. Munro & Ferguson showed a notable plant of *Madame Desgranges* Chrysanthemum, grown in a natural

way in a 9-inch pot, which bore 140 blooms of good size.

The papers announced for next monthly meeting, December 4, were:—"The Culture of Asparagus," by Mr. Alex. Porter, Leuchie; and "Decorative Palms," by Mr. C. J. McKenzie, Warriston Nursery.

BATH FLORAL FETE.

At this show, reported at the time in our columns, there were tents devoted to plants of botanical interest, on account of the British Association which was holding its meeting in this city at the same time. The most conspicuous feature was that of British Ferns, the unique varieties of Colonel Jones of Clifton (mostly from the Clifton Zoological Gardens), and of Mr. E. J. Lowe, F.R.S., of Shirenewton Hall, near Chepstow, made a grand display, numbering some hundreds of well-grown plants. All the 1st and 2nd prizes were taken by these two gentlemen who between them also secured thirty First-class Certificates for very distinct new varieties. New Ferns also came from twelve other well-known growers. Such a collection has never before been brought together. A complete list of the certificates, for which we could not find space at the time, is now added, in order that a record may be secured of plants that may never again be exhibited.

FIRST-CLASS CERTIFICATES.

To Colonel Jones, of Clifton, for *Athyrium filix-femina* var. *unco-Craigii*, *Polystichum aculeatum* var. *polydactylum*, *P. angulare* var. *frondoso-cruciatum*, *P. a.* var. *acutilobum-cruciatum*, *P. a.* var. *cruciatum-polydactylum*, *P. a.* var. *frondoso-bulbiferum*, *P. a.* var. *decompositum magnificum* *polydactylum*, *P. a.* var. *divisilobum-polydactylum*, *P. a.* var. *decompositum splendens* *polydactylum*, *P. a.* var. *multilobum* *polydactylum*, *P. a.* var. *inæquale variegatum* *polydactylum*, *P. a.* var. *divisilobum elegans*, *P. a.* var. *latifolium grandiceps*, *P. a.* var. *polydactylum grande*, *P. a.* var. *divisilobum plumosum robustum*, *P. a.* var. *folioso-cristatum*; *Scolopendrium vulgare* var. *crispum latissimum*, *S. v.* var. *crispum robustum*, and *Lastrea pseudo-mas* var. *grandiceps*.

To Mr. Fitt, The Frythe Gardens, Welwyn, Herts, for *Lastrea pseudo-mas* var. *ramo-cristatum*.

To C. T. Drury, Esq., Forest Gate, Essex, for *Blechnum sprucii* var. *concinnum*, and *B. s.* var. *ramo cristatum*.

To Mr. James Moly, Charmouth, Devon, for *Polystichum angulare* var. *lineatum*, *P. a.* var. *cristato-gracile*, *P. a.* var. *latifolium*, *P. a.* var. *grandiceps*, and *Scolopendrium vulgare* var. *variegatum*.

To E. J. Lowe, Esq., F.R.S., Shirenewton Hall, Chepstow, for *Trichomanes radicans* var. *cristata*, *Polystichum angulare* var. *flabelli-pinnulum* (of Willis), *P. a.* var. *coronare*, *P. a.* var. *rotundato-cruciatum*, *P. aculeatum* var. *cruciatum*, *Scolopendrium vulgare* var. *mirum*, *S. v.* var. *adornatum*, *S. v.* var. *cicutum*, *Athyrium filix-femina* var. *mirandum*, and *A. f.-f.* var. *trossula*.

To Mrs. Grant, Hillesdon House, Collumpton, Devon, for *Scolopendrium vulgare* var. *crispum variegatum* (of Grant).

To Mr. Moule, of Ilfracombe, for *Scolopendrium vulgare* var. *coronans*, *S. v.* var. *crispum fertile*, and *Cystopteris fragilis* var. *sempervirens cristata*.

To Mrs. Abbott, The Priory, Abbots Leigh, near Bristol, for *Polystichum angulare* var. *grandiceps* (of Abbott).

To E. F. Fox, Esq., Brislington, Bristol, for *Polystichum aculeatum* var. *corymbiferum*, *P. angulare* var. *congestum polydactylum*, and *P. aculeatum* var. *corymbiferum cruciatum*.

To Messrs. W. & J. Birkenhead, Sale, near Manchester, for *Cheilanthes Eatonii*, *C. gracillima*, *Nothochlæna Mullerii*, *N. Newberryi*, *Adiantum Fergusoni* and *Selaginella Oregana*.

To Messrs. F. W. & H. Stansfield, Sale, near Manchester, for *Athyrium filix-femina* var. *laciniato-ramulosum*, *A. f.-f.* var. *congestum laciniato-cristatum*, *A. f.-f.* var. *congestum-excurrens*, *A. f.-f.* var. *angustato-congestum*, *A. f.-f.* var. *unco-glomeratum*, *A. f.-f.* var. *plumosum-divaricatum*, and *Polystichum angulare* var. *pulcherrimum*.

To Mr. J. M. Barnes, of Milnthorpe, Westmoreland, for *Polypodium vulgare* var. *multifido-elegantissimum*, *P. v.* var. *folioso-cornubiense*, *P. v.* var. *bifido-grandiceps*; *Lastrea propinqua* var. *grandiceps*, *L. montana* var. *coronans*; *Athyrium filix-femina* var. *regale* (of Barnes), and *A. f.-f.* *plumosum* (of Barnes).

To Mr. Garnet, of Bowness, Windermere, for *Athyrium filix-femina* var. *setigerum-cristatum*.

To Mr. Gill, The Fernery, Lynton, Devon, for *Lastrea amula* var. *cristata*.

To W. C. Carbonell, Esq., of Usk, for *Polystichum angulare* var. *divisilobum-grandiceps*.

To E. J. Lowe, Esq., for *Dahlia Lily*, a hybrid between *White Queen* and *glabrata*, white and pointed petals, half the size of *White Queen*, and shape of a *Lily*. Small foliage.

LEDBURY FRUIT SHOW.

OCTOBER 25.—This show was held in Ledbury Park, Herefordshire, the seat of M. Biddulph, Esq., M.P.; and as this place is situated in the centre of a large fruit-growing district a good show was naturally anticipated, no less than 3000 dishes of fruit were staged on tables placed within.

The success of the show is doubtless in great measure due to the support given to it by the resident gentry, coupled with the efforts of an energetic committee, whose liberality in the way of prizes was sufficient to attract the attention of eminent growers, as may be gathered from the fact of the following well-known names:—Messrs. Bunyard & Co., Maidstone; Messrs. Cranstone & Co., Hereford; and Messrs. Wildsmith, Heckfield; Child, Croome Court; and Denning, Holm Lacey, appearing in the prize list subsequently.

Large and interesting collections of Apples and Pears were staged by Messrs. Veitch & Sons, Chelsea; Wheeler & Co., Gloucester; Paul & Son, Cheshunt; and by Mr. J. Watkins, of Pomona Farm, New Hereford. Mr. Wm. Coleman also sent a nice collection of Apples and Pears from the Eastnor Castle Gardens.

Excepting two classes for Grapes and two for Tomatoes, the rest were confined to dessert, culinary, and cider Apples, and dessert and perry-making Pears.

The awards of the judges were as follows:—

Class 1, three bunches black Grapes, Mr. Davis, gr. to M. Biddulph, Esq., M.P., Ledbury Park, and Mr. Walter Child, gr. to the Earl of Coventry, were awarded equal 1st—the former for excellent examples of Black Alicante, and the latter for beautifully finished Gros Colmar, rather small in berry and bunch; Mr. S. T. Wright being 2nd, with Gros Colmar; and Mr. J. Corbett, 3rd. Mr. Davies also had the best dish of White Muscats, very large tapering bunches.

As is customary the collection of Apples and Pears excited considerable interest amongst the growers present, and the principal prizetakers were:—Messrs. Bunyard & Co., Maidstone; Messrs. Cranston & Co., Hereford; Mr. J. Watkins, Withington, near Hereford; Mr. C. Denning, Mr. W. Wildsmith, Mr. Walter Child, Mr. S. T. Wright, and Mr. Davis.

Pears.—The following were the varieties shown and the number of dishes:—

Marie Louise, 22; Pitmaston Duchess, 16; Louise Bonne of Jersey, 12; Josephine de Malines, 6; stewing Pears, 22; Doyenné du Comice, 73.

At a conference which was held in an adjoining tent, and which was well attended, Mr. W. Coleman read an excellent paper on fruit-growing in that particular district.

THE WEATHER.

THE PAST WEEK.

The following summary record of the weather for the week ending Nov. 5, is furnished from the Meteorological Office:—

"The weather has been very dull and unsettled in all parts of the kingdom, with much rain over England, and a considerable quantity over Ireland and Scotland also. In the metropolis a dense black fog was experienced for a time on November 1, and again during the morning of the 3rd.

"The temperature has been above the mean in all districts; in 'England, N.E.,' 'England, S.,' and 'Scotland, W.,' the excess has been 3°, and in the other districts 1° or 2°. The highest of the maxima, which were generally recorded during the earlier days of the period, ranged from 53° in 'Scotland, N.,' to 59° in 'Scotland, W.,' 61° in the 'Channel Islands,' and 62° in 'Ireland, S.' The lowest of the minima were registered on the 1st, when they varied from 33° over Scotland to 38° in 'England, E.,' and 'England, N.W.,' and to 41° in the 'Channel Islands.'

"The rainfall has been rather less than the mean in 'Scotland, N., and 'Scotland, W.,' and about equal to it in 'Ireland, N.,' but in all other districts an excess is shown, especially over central and eastern England.

"Bright sunshine shows a slight increase in the 'Grazing Districts,' and in the extreme north of Scotland; but has again been very deficient generally. In most parts of England and Scotland, and also in the 'Channel Islands,' the percentage of the possible amount of duration has not exceeded 15; but in Ireland it has ranged from 25 to 28, while in 'Scotland, N.,' 38 per cent has been recorded."

MEAN TEMPERATURE OBSERVED AT CHISWICK DURING THE WEEK ENDING NOV. 17. (AVERAGE OF FORTY-FOUR YEARS.)

Nov. 11	43°·1	Nov. 15	42°·2
" 12	42°·8	" 16	43°·1
" 13	42°·5	" 17	42°·0
" 14	42°·3	Mean for the week ...	42°·4

[Accumulated temperature indicates the combined amount and duration of the excess or defect of temperature above or below 32° F. for the period named, and is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.				
	ACCUMULATED.				Day-deg.
	Above or below the Mean for the week ending Nov. 5.	Above 42° for the week.	Below 42° for the week.	Above 42° difference from Mean since Jan. 3, 1888.	
Principal Wheat producing Districts.		Day-deg.	Day-deg.	Day-deg.	Day-deg.
0. SCOTLAND, N. ...	1 above	20	7	-246	+205
1. SCOTLAND, E. ...	2 above	23	4	-445	+144
2. ENGLAND, N.E. ...	3 above	32	0	-513	+79
3. ENGLAND, E. ...	2 above	39	0	-391	+197
4. MIDLAND COS. ...	2 above	33	0	-481	+189
5. ENGLAND, S. ...	3 above	50	0	-480	+230
Principal Grazing, &c., Districts.					
6. SCOTLAND, W. ...	3 above	29	0	-387	+93
7. ENGLAND, N.W. ...	2 above	42	0	-330	+116
8. ENGLAND, S.W. ...	1 above	43	0	-500	+265
9. IRELAND, N. ...	2 above	36	0	-275	+55
10. IRELAND, S. ...	1 above	42	0	-280	+113
— CHANNEL ISLANDS	2 above	69	0	-358	+154

DISTRICTS.	RAINFALL.		BRIGHT SUNSHINE.	
	More or less than the Mean for the week.	No. of Rainy Days since Jan. 3, 1888.	Total Fall since Jan. 3, 1888.	Percentage of possible Duration for the week.
Principal Wheat-producing Districts.	Tenths of Inch.		Ins.	
0. SCOTLAND, N. ...	4 less	201	34.0	38
1. SCOTLAND, E. ...	2 more	172	24.1	7
2. ENGLAND, N.E. ...	6 more	156	22.2	9
3. ENGLAND, E. ...	6 more	160	21.4	8
4. MIDLAND COS. ...	10 more	141	20.8	10
5. ENGLAND, S. ...	9 more	150	23.2	13
Principal Grazing, &c., Districts.				
6. SCOTLAND, W. ...	2 less	160	33.6	12
7. ENGLAND, N.W. ...	2 more	163	24.1	10
8. ENGLAND, S.W. ...	7 more	167	28.7	17
9. IRELAND, N. ...	0 (aver.)	173	29.4	25
10. IRELAND, S. ...	1 more	155	29.6	28
— CHANNEL ISLANDS	9 more	184	25.5	15

MARKETS.

COVENT GARDEN, November 8.

[We cannot accept any editorial responsibility for the subjoined reports, which, however, are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list, and who are responsible for the quotations. It must be remembered that these quotations represent averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the supply in the market, and they fluctuate, not only from day to day, but often several times in one day, and therefore the prices quoted are averages for the past week must not be taken as indicating the particular prices at any particular date, and still less can they be taken as guides to the prices in the coming week. Ed.]

MARKET quiet, with no alteration. *James Webber, Wholesale Apple Market.*

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Apples, half-sieve ...	2 0-4 6	Lemons, per case ...	12 0-21 0
— Canada and Nova		Peaches, dozen ...	2 0-6 0
Scotia, per barrel 10	0-14 0	Pine-apples, Eng. lb.	1 6-2 0
Cobs, 100 lb. ...	105 0-...	Plums, half-sieve ...	2 6-4 6
Grapes, per lb. ...	0 6-2 6	— St. Michael, each	2 0-8 0

VEGETABLES.—AVERAGE RETAIL PRICES.

	s. d. s. d.		s. d. s. d.
Artichokes, p. doz. ...	4 0-...	Mustard and Cress,	
Beet, red, per dozen ...	1 0-2 0	punnet ...	0 4-...
Carrots, per bunch ...	0 6-...	Onions, per bunch ...	0 5-...
Cauliflowers, each ...	0 3-...	Parsley, per bunch ...	0 4-...
Celery, per bundle ...	1 6-2 0	Potatoes, per cwt. ...	4 0-5 0
Cucumbers, each ...	0 6-...	Shallots, per lb. ...	0 6-5 0
Endive, per dozen ...	3 0-...	Spinach, per bushel ...	2 6-...
Green Mint, bunch ...	0 6-...	Tomatoes, per lb. ...	1 0-...
Herbs, per bunch ...	0 6-...	Turnips, per bunch,	
Leeks, per bunch ...	0 4-...	new ...	0 5-...
Lettuce, per dozen ...	2 0-...		
Mushrooms, punnet	2 6-...		

POTATOS.—Myatt's finished. Beauty of Hebron, 60s. to 81s.; Regents, 90s.; and Magnums, 65s. to 80s. per ton. Trade much worse.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Aralia Sieboldi, doz.	6 0-18 0	Ferns, in var., doz.	4 0-18 0
Chrysanthemums, doz.	4 0-9 0	Foliage plants, vari-	
— large plants, each	2 0-4 0	ous, each ...	2 0-10 0
Coleus, dozen ...	2 0-4 0	Ficus elastica, each	1 6-7 0
Cyperus, per dozen	4 0-12 0	Fuchsias, doz. ...	3 0-6 0
Dracena terminalis,		Hya inthia, Roman,	
per dozen ...	30 0-60 0	dozen pots ...	10 0-12 0
— viridis, per doz.	12 0-24 0	Liliums, var., doz.	18 0-30 0
Erica hymalis, doz.	12 0-24 0	Marguerites, doz.	6 0-12 0
— cutta, dozen ...	9 0-12 0	Mignonette, 12 pots	3 0-6 0
— gracilis, dozen ...	9 0-15 0	Palms in var., each	2 6-21 0
Eucalyptus, in var.,		Pelargoniums, scar-	
per dozen ...	6 0-18 0	let, per dozen ...	2 0-6 0
Evergreens, in var.,		Primulas, per dozen	4 0-6 0
per dozen ...	6 0-24 0	Solanums, dozen ...	9 0-15 0

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Abutilons, 12 bun.	3 0-6 0	Marguerites, 12 bun.	3 0-6 0
Bouvardias, per bun.	0 6-1 0	Mignonette, 12 bun.	2 0-4 0
Camellias, 12 blms.	3 0-4 0	Narcis, paper-white,	
Carnations, 12 blms.	2 0-3 0	12 sprays ...	0 6-1 0
Chrysanthemums,		Pelargoniums, 12 spr.	1 0-1 6
12 blooms ...	0 6-3 0	— scarlet, 12 spr.	4 0-8 0
— dozen bunches ...	4 0-12 0	Primulas, double, 12	
Eucharis, per dozen	1 0-6 0	sprays ...	1 0-1 6
Gardenias, 12 blooms	3 0-6 0	Roses, Tea, per doz.	1 0-3 0
Heliotropes, 12 spr.	0 6-1 0	— coloured, dozen.	2 0-4 0
Lilium longiflorum,		— red, per dozen ...	0 6-1 0
12 blooms ...	4 0-6 0	— Safrano, dozen ...	1 0-2 0
— lancifolium, 12 bl.	1 0-3 0	Stephanotis, 12 spr.	4 0-6 0
Hyacinths, Roman,		Tuberose, 12 blms.	0 6-1 0
12 sprays ...	1 0-1 6	Violets, 12 bunches ...	1 0-2 0
Lapageria, 12 blooms	1 0-2 0	— dark, Fr., bunch	1 6-2 0
		— Parme, Fr., bun.	3 6-5 0

SEEDS.

LONDON: Nov. 7.—Messrs. John Shaw & Sons, seed merchants, of 37, Mark Lane, E.C., write that the seed market to-day was thinly attended, with scarcely any business doing. The most favoured article of late has been fine French Red Clover seed. Alsike, white, and Trefoil, all keep steady. For Winter Tares lower prices are accepted. There is no change in either Perennial or Italian Rye-grass. Choice blue Peas continue scarce, and command full rates. For Haricot Beans the tendency is still upwards; supply continues very short. Bird seeds are slow of sale. Feeding Linseed is firm.

CORN.

Averages.—Official statement showing the average price of British corn, imperial measure, in the week ended November 3:—Wheat, 32s. 3d.; Barley, 28s. 10d.; Oats, 16s. 5d. For the corresponding week in 1887:—Wheat, 30s. 3d.; Barley, 29s. 7d.; Oats, 15s. 11d.

FRUIT AND VEGETABLES.

SPITALFIELDS: Nov. 7.—Fairly good supplies of all kinds of fresh vegetables, Apples, Pears, Potatoes,

&c. Trade rather slow at following rates:—Fruit: Pears, 3s. to 4s. 6d. per bushel; Apples, 3s. to 5s. 6d. do.; do., 1s. 9d. to 2s. 9d. per half-bushel; English Tomatoes, 3s. 6d. to 5s. per peck; American Apples, 8s. to 13s. per barrel. Vegetables: Brussels Sprouts, 1s. 6d. per half-sieve; Savoy, 2s. to 3s. per tally; Cabbages, 1s. 9d. to 2s. do.; Cauliflowers, 2s. to 3s. 6d. do.; Greens, 1s. 6d. to 2s. per dozen bunches; Turnips, 1s. 9d. to 2s. do.; Carrots, 1s. 9d. to 2s. do.; Beetroots, 2s. to 2s. 6d. do.; Onions, 1s. 9d. to 2s. do.; Mint, 1s. to 1s. 6d. do.; Parsley, 2s. to 3s. do.; Celery, 4s. 6d. to 10s. per dozen bunches; Horseradish, 10d. to 1s. 4d. per bundle; Spanish Onions, 7s. 6d. to 9s. per box; Belgian Onions, 2s. 3d. to 2s. 6d. per bag; Dutch Onions, 2s. to 2s. 6d. do.; pickling Onions, 4s. to 4s. 6d. do.; frame Cucumbers, 4s. to 5s. per dozen; Endive, 1s. to 1s. 6d. do.; Cos Lettuces, 4d. to 6d. per score; Carrots, 24s. to 36s. per ton.

STRATFORD, Nov. 6.—Supply has been good during the past week, and a brisk trade was done at the following prices:—Cabbages, 2s. 6d. to 3s. 6d. per tally; Savoy, 3s. to 4s. do.; Turnips, 30s. to 40s. per ton; Carrots, household, 35s. to 40s. do.; Mangels, 14s. to 21s. do.; Swedes, 16s. to 22s. do.; Onions, Dutch, 2s. 6d. to 3s. per bag; do., Bordeaux, 7s. to 9s. per case; Apples, English, 2s. 9d. to 6s. 6d. per bushel; Watercress, 6d. per dozen; Celery, 10d. to 1s. per roll; Cauliflowers, 4s. to 6s. per tally; Brussels Sprouts, 2s. to 3s. 6d. per half-sieve; Carrots, 2s. to 3s. per dozen bunches; Turnips 2s. to 3s. 6d. do.; Walnuts, 6s. to 12s. 6d. per bag; do., 12s. 6d. to 16s. per sack.

POTATOS.

BOROUGH AND SPITALFIELDS: Nov. 8.—The wet weather has to some extent checked supplies at market, and best samples are firmer. Regents, Scotch, 80s. to 95s.; English, 65s. to 90s.; Hebrons, 60s. to 110s.; Magnum Bonums, 60s. to 100s. per ton.

SPITALFIELDS: Nov. 7.—Quotations:—Magnums, 60s. to 80s.; Imperators, 65s. to 85s.; Champions, 60s. to 65s.; Regents, 70s. to 90s.; Beauty of Hebron, 85s. to 100s. per ton.

STRATFORD: Nov. 6.—Quotations:—Light Magnums, 65s. to 85s.; do., 60s. to 70s.; Hebron, 55s. to 70s.; White Elephants, 60s. to 90s. per ton.

Imports.—8 bags from Antwerp, 2 bags 15 sacks from Ostend, 26 baskets 12 bags from Rotterdam, 1419 bags from Hamburg, and 23 packages from Flushing.

HAY.

Averages.—The following are the averages of the prices obtained at the various metropolitan markets during the past week:—Clover, prime, old, 120s. to 142s.; new, 80s. to 110s.; inferior, 45s. to 75s.; prime meadow hay, 120s. to 130s.; good new hay, 80s. to 100s.; inferior, 30s. to 70s.; old straw, 42s. to 48s.; new, 30s. to 44s. per load.

ENQUIRIES.

"He that questioneth much shall learn much."—BACON.

ANALYSIS OF SOIL.—I take the liberty of forwarding to you a report of an analysis of a sample of soil, and should be glad of the opinions of some of your correspondents as to the suitability of that soil for Vines:—

Mechanical Analysis.

Moisture	4.5
Organic matter and water of combination ...	13.275
Lime	2.025
Coarse sand	33.16
Fine sand and clay, principally fine sand ...	47.04

Chemical Analysis.

Moisture	4.5
Organic matter and water of combination ...	13.275
Oxides of iron and alumina	5.4
Carbonate of lime	2.025
Magnesia and alkalies, principally magnesia	2.05
Insoluble silicious matter	72.75

100.000

W. M. [Deficient in potash. Ed.]

SPECIMEN APPLES.—What English Apple has a heavier weight on record than the one of Warner's King exhibited by me at Ledbury on October 25 last? The report of that exhibition gave this specimen as weighing over 2 lb., and it was awarded the prize for the largest Apple. (Class 31 of schedule, prize 21s.). *Robert Smith.*

NOTICES TO CORRESPONDENTS.

INTELLIGENT READERS, do PLEASE NOTE that letters relating to ADVERTISEMENTS, or to the supply of the Paper, should be addressed to the PUBLISHER, and that all communications intended for publication, as well as specimens and plants for naming, should be addressed to the EDITOR. Such communications should be written on one side only of the paper, and sent as early in the week as possible. Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

BOOKS: *W. H. D. Chemistry of the Farm*, by R. Warrington, is the best book for you, published by Messrs. Bradbury Agnew & Co., Bouverie Street, London, E.C. There is no book, so far as we know, which treats of the analyses of fruits and vegetables.—*E. M. The British Moss Flora* is published by the author, R. Braithwaite, 303, Clapham Road, S.W.

CHRYSANTHEMUMS: *A. C.* Nice well-formed flowers, but not better than others already in commerce.

EMBOSSED ROSE LABELS: *Mr. Rogers.* You would be able to get these labels from any large horticultural sundriesman.

GALLS ON SPRUCE: *G. B.* The galls are produced by *Chermes Abietis*. There is no available remedy but to burn all the galls in the young state.

GARDEN-WALK SCRAPER AND BROOM: *M. H. S.* Any ironmonger will supply you with a wheeled hoe or scraper, but we know of no implement combining a scraper and broom.

GRAPES: *E. J. L.* The Vines have been greatly mismanaged. The splitting of the berries was the result of mildew attacking them, which prevented further growth in the skin of the berry. We have never remarked a worse case, and it is evident the man does not know anything about the treatment of the Vine.

MARECHAL NIEL ROSE ON ROOF: *Poor Geordie.* Your Rose will bloom well enough if you thin out the weaker shoots, cutting clean away to the old wood. Do not spare the knife, but so cut these away that the stronger Willow-like shoots stand a foot or more apart; and do not cut the latter at all. From the points of these you will get your earliest blooms next season. By cutting out as we advise you will be enabled to use the ventilators at the back of the house, and more light will fall on the plants beneath the Rose.

NAMES OF FRUIT: *W. W.* 1 and 4, *Burré Rance*; 2, *Nouveau Poitean*; 3, *Van Mons Léon Leclerc*; 5, *Burré Hardy*; 6, *Duchesse d'Angoulême*; 7, *Doyenné Gris*; 8, *Winter Nelis*; 9 and 13, *Burré Diel*; 10, *Chaumontelle*; 11, *Burré Capiaumont*; 12, *Jersey Gratioli*; 14 and 15, wild seedling.—*W. Fisher.* 1, *Warner's King*; 2, *Hawthornden*; 3, *Waltham Abbey Seedling*.—*A Weekly Subscriber.* 1, *Passe Colmar*; 2, *Duchesse d'Angoulême*; 3, *Chaumontelle*; 4, *Doyenné Gris*.—*Thomas Matheson.* Pear *Vicar of Winkfield*.—*Notts.* 1, *Jersey Gratioli*; 2, rotten; 3, *Fondante d'Autonne*; 4, *Burré Superfin*.—*J. Earl.* 1, *Belle de Bruxelles*; 2, *Chaumontel*; 3, *Doyenné Boussoch*.—*N. N. P.* Apple *Hanwell Souring*.—*A. B.* 1, *Aston Town*; 2, *Autumn Bergamot*.—*Hexham.* Apple *Gloria Mundi*.—*R. Ridley.* Apple *Brabant Bellefleur*.—*W. & H. Brown.* 1, *Pitmaston Duchess*; 2, *Marie Louise d'Uccle*; 3, *Bowood*; 4, *Hambleton Deux ans*.—*Wooton.* There was found no letter; we prefer the letter to be enclosed in the box, and not sent separately, as it is sometimes difficult to identify the package to which the letter relates. 1, *Beauty of Kent*; 2, *New Hawthornden*; 3, *Royal Somerset*; 4, *Hanwell Souring*; 5, *Hambleton Deux ans*; 6, *Emile d'Héyst*.

NAMES OF PLANTS: *J. Mantin.* The name of Orchid omitted in our last issue is *Saccolabium calceolare*, probably.—*F. H., Manchester.* The two plants you send without numbers are *Restiaceous* plants from South Africa, now coming into use for the same decorative purposes as *Pampas* and other grasses. The one with the blunt spikelets is *Thamnochortus giganteus*; the other is *T. elongatus*. The two *Heaths* we hope to name next week.—*G. W. Aster Townshendi*; *Helenium autumnale*, yellow.—*R. A. G.* 1 and 2, fruits next week; 3, *Scirpus lacustris*; 4, *Typha latifolia*; 5, *Antennaria tomentum*; 6, *Acalypha Macafeana*;

7, not found; 8, *Acalypha musaca*.—*R. L.* 1, *Aster Reevesii*; 2, *Francoa sonchifolia*; 3 and 4, *Davallia dissecta*, probably—both barren fronds, send fertile one; 5, *Pteris scaberula*; 6, *Adiantum hispidulum*.—*Camjee.* *Lockhartia acuta*.—*A. O. W.* *Dianthus Seguieri*.—*N. B.* 1, *Dendrobium bigibbum*; 2, *Oncidium tigrinum*; 3, *O. verucosum*; 4, *O. flexuosum*.—*H. C.* 1, *Salix fragilis*; 2, *S. Smithiana*; 3, *S. aquatica (cinerea)*; 4, *S. caprea*.

REPORT OF THE APPLE CONGRESS, 1884: *W. Jordan.* It is out of print.

TOMATOS AUTOCRAT, PRIZE BELLE, AND THE QUEEN: *R.* The only variety mentioned in any of the American lists of late date is *The Queen*. It is a yellow fruit of great excellence in America.

CATALOGUES RECEIVED.

THOMAS SMITH, Daisy Hill Nursery, Newry—Alpines, Bulbs, and Border Plants, &c.

BEN REID & Co., Aberdeen—Roses; also Forest Trees.

ROBERT MACK & SON, North of England Rose Nurseries, Catterick Bridge and Scorton, Yorkshire—Roses.

M. BRUANT, Boulevard St. Cyprien, a Poitiers, Vienne, France—Autumn and Winter Price Current of Fruits, Roses, Trees, Shrubs, &c.

CHARLES SHARPE & Co., Sleaford, Lincolnshire—Agricultural Seeds, &c.

COMMUNICATIONS RECEIVED.—*P. Middleton.*—*W. Gill.*—*P. D. W.* (no Grapes to hand).—*J. H.*—*T. Gill* (next week).—*W. N.*—*M. J. B.*—*R. A. G.*—*H. G. R.*—*J. S.*—*W. P.*—*A. M.*—*W. W.*—*P. E. N.*—*W. B. H.*—*J. R. J.*—*W. B. D. E.*

Correspondents sending plants or fruits to be named, or asking questions demanding time and research for their solution, must not expect to obtain an answer to their enquiries in the current week.

THE PINE FORESTS OF WESTERN FRANCE.—

In a report on the agriculture of the Gironde, the British Consul at Bordeaux refers to the forests which cover about a third of the department, especially the Landes district, where the soil is wholly unfitted for ordinary cultivation. Hence forests of Pines (the *pin maritime*) have in recent times been planted, and the wood and resin obtained from them have now become an important and, in some instances, the sole source of revenue of the inhabitants of those districts. In the parts distant from towns and other inhabited places resin is chiefly produced, while in places nearer to Bordeaux or other shipping ports, where means of transportation exist, the production of pit props, railway sleepers, telegraph poles, and wood for fuel forms the chief business. The collection of resin affords a living to a large number of the very poorest persons, and the recent decline in the exportation of this article from Bordeaux has been a great misfortune to the inhabitants of some parts of the Landes district. The decline has been caused by the annually increasing competition of the United States, which has become the chief exporter of resin to the almost entire exclusion of Bordeaux. A new kind of oil, called Pine-oil, is now made from the refuse of resin after the latter has been employed in making turpentine. This is used as an illuminant in some private houses in Bordeaux, and burns very brightly; it is cheaper than refined petroleum, and is not explosive. The trees do not appear to suffer by the extraction of the resin, if it is done carefully, and the wood is even better fitted then for certain purposes, such as paper-making and the manufacture of pyroligneous acids, than it was before. The export of pit props made from the Landes Pines is an important branch of trade between Bordeaux and English ports adjacent to coal districts. One hundred and seventy-five thousand tons of pit props are now shipped annually to England from Bordeaux, while ten years ago the shipments did not reach half that quantity. Railway sleepers and telegraph poles are likewise made in large quantities in these Pine forests; they are used chiefly in France. Besides, a large quantity of young Pines finds its way to England every year to be converted into paper. The Landes is a sandy district in which nothing but Pines will grow, and the forests are all of recent origin.

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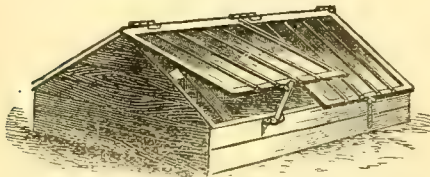
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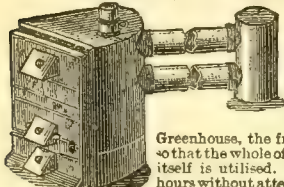
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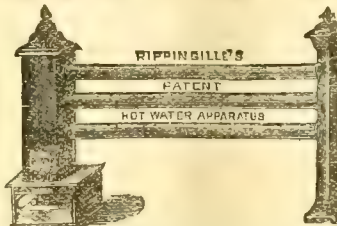
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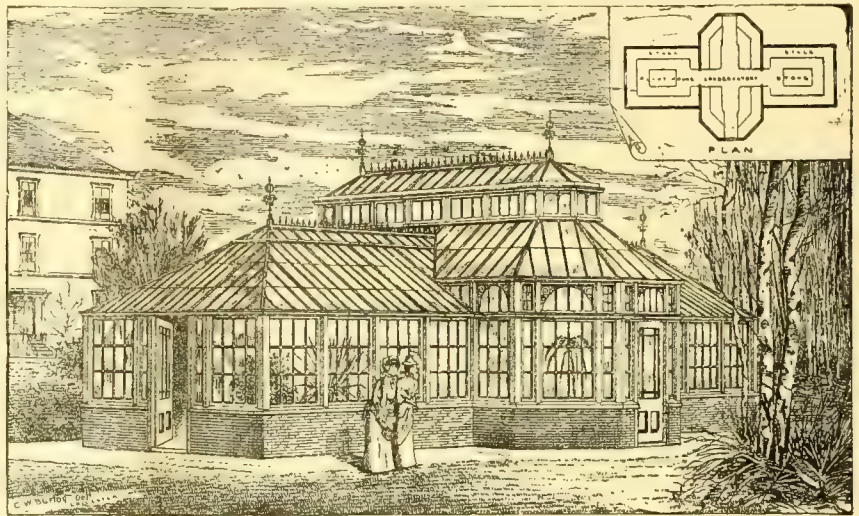
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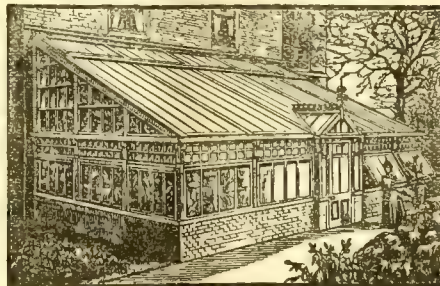
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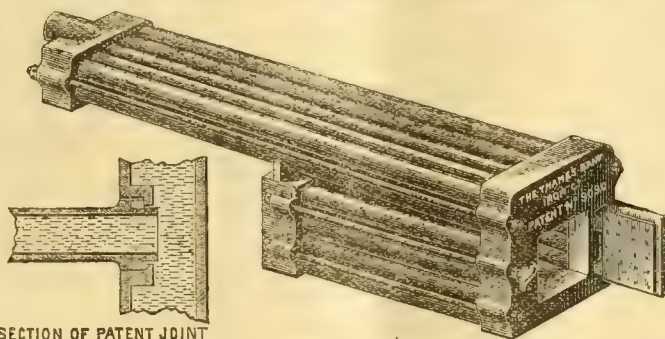
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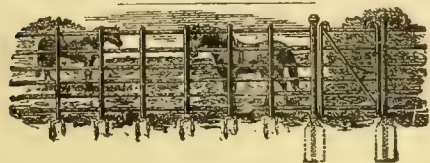
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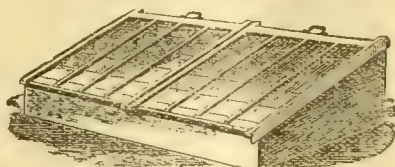
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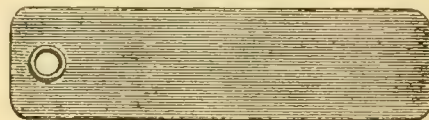
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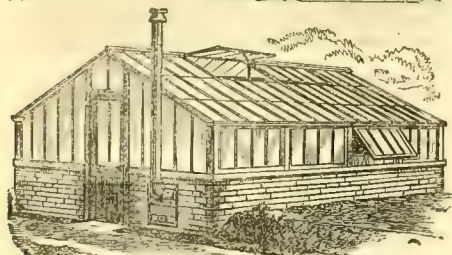
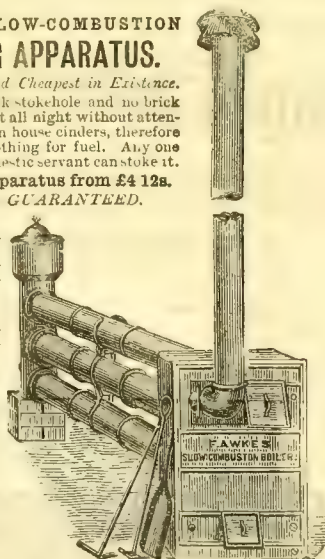
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MR. JAMES M'GHER, Gardener at Physgill, has been appointed to succeed the late **MR. McMORRAN**, as Gardener to **R. H. JOHNSTON STEWART, Esq., at Glasserton, Wigtownshire.** **MR. McMORRAN** held this appointment for the long period of forty-three years.

MR. C. LAMB has been appointed as Head Gardener to **R. SMITH, Esq., J.P., Dilworth House, Longridge, Preston, Lancashire.**

MR. D. DOWDESWELL has been appointed Gardener to **E. M. TWOPENNY, Esq., Woodstock Park, Sittingbourne.**

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CYPRIPEDIUM ELLIOTTIANUM,
n. sp.

This is the nearest ally of *Cypridium Rothschildianum*. Its remarkable leaves are broader, apparently stiffer. The spikes at hand are two-flowered — Mr. J. Godseff, however, has seen them with five. The primary peduncle would appear to be much stronger, as in the named species; it is reddish and covered with very short hairs. The fine bracts are those of *Cypridium Rothschildianum*, yet white with red dark purple longitudinal stripes. Ovaries white, with red ribs. Both sepals white, with dark red longitudinal stripes. Petals longer by one-third, with dense, short, blackish ciliae, undulate at base, white, full of Indian purple stripes and freckles, free of them at apicular end. Lip's fashion that of *Cypridium Stonei*; colour reddish-brown. Staminode angulate, both shanks finally contiguous, well bifid at apex, hairy at major part. The best mark of distinction is the sharp bifid apicular part of staminode. I have the impression the colours are much richer, the flowers greater, the peduncle stronger, the leaves broader and stiffer. This exceedingly elegant, surprising species is dedicated to Mr. Elliott, of the firm of Young & Elliott, at New York, at the suggestion of Mr. J. Godseff, who knows the absent Mr. Sander's views. What success of the firm to have imported in so short time *Cypridium Sanderianum*, *Rothschildianum*, and *Elliottianum*!

H. G. RCHB., F.



"Gardeners' Chronicle," November 3.

CYPRIPEDIUM ELLIOTTIANUM, n. sp.

"This glorious new introduction of Messrs. Sander & Co.'s, from the Philippines is now in bloom at the St. Albans Nursery. The plant is of noble habit, resembling *C. Stonei*; leaves bright green, from 1 foot to 15 inches long, and $1\frac{1}{2}$ to 2 in. broad; the older stout purple-dotted scape, over 1 foot in height, bore evidence of the presence of five flowers, but on that in bloom only two. The bracts are spathaceous, and very showy, from $1-1\frac{1}{2}$ inch long, whitish, with narrow chocolate lines. The 2-inch long ovaries bear handsome flowers, which call to mind the beautiful *C. Rothschildianum* and *C. præstans*, from both of which, however, it is widely distinguished. The dorsal sepal is $1\frac{1}{2}$ inch wide and $2\frac{1}{2}$ long, pointed, ivory-white, with fifteen dark crimson lines of various lengths; the lower sepals are similar, but smaller. The lip is nearly like that of *C. Stonei* in colour and shape, and has the same fold on the under side; ivory-white, delicately veined and tinted rose. The petals are also white, spotted in the upper portion with crimson blotches, which run into three or four narrow lines to the points, the upper portions being wavy and ciliated, much as in *C. Sanderianum*. The staminode (unless abnormal) is narrow and curved under, as in *C. Rothschildianum*. Altogether it is a very beautiful species, which seems to embody the good features of most of its section. *James O'Brien.*"

"Garden," November 3.

CYPRIPEDIUM ELLIOTTIANUM.

"This is the name of a grand new species of Slipper Orchid imported from the Philippines, by Mr. Sander, of St. Albans, and which opened its flowers in the case on its journey home, so that we are able to judge of its great beauty and distinctness. The collector says he has seen it with five flowers on a scape; so here is another grand beauty to add to our collection of these deservedly popular Slipper Orchids. It is a bold-growing species, the leaves being two-ranked, 18 inches long by 2 inches broad, with one obtuse apex, deep green and leathery in texture. Scape erect, bearing five flowers, which, judging from those opened in the case during the journey home, are very large; the upper and lower sepals are large, ovate, and pure white, banded with distinct lines of rich chocolate, which extend from base to apex; the petals are broad at the base, lengthened into tail-like points. In the specimen before me they are about 4 inches long, but these delicate members have been injured in their confinement, and, I should imagine, it will prove to be one of the longest-tailed of the Eastern kinds; the colour is pure white, marked at the base with large spots and blotches of chocolate; lip somewhat in shape like that of *C. Stonei*, pure white beneath, suffused and netted with rose in front, the upper edge being yellow. The staminode is very peculiar, being bent down like a large bird's beak, bifid at the apex, with thick, mossy, chocolate hairs. The bracts on the scape are large, streaked with chocolate, like the dorsal sepal. It is a grand addition to our cultivated *Cypridiums*, and should have a great future before it.

"W. H. G."

CYPRIPEDIUM ELLIOTTIANUM, Rehb. f.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at the Central Sale Rooms, 67 and 68, Cheapside, E.C., on FRIDAY, November 16, by direction of Mr. F. SANDER, St. Albans, the entire importation, consisting of nearly 1000 Plants of this extremely magnificent CYPRIPEDIUM. See p. 526 for full particulars.

The GARDENERS' CHRONICLE

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PONTEFRACHT CHRYSANTHEMUM and **BIRD SHOW, NOVEMBER 23 and 24, 1888.** £100 offered in Prizes. THOS. GLOVER, Sec.

LILY OF THE VALLEY.—Finest Berlin forcing Crowns. Consignment to hand in fine condition. Samples and price on application to **WILLIAM DENMAN, 7, Catherine Street, Covent Garden, W.C.**

CHRYSANTHEMUMS.—600 best sorts, true to name, strong Cuttings now ready, 1s. 6d. per doz., 10s. per 100. Many of the best Prizes and Silver Cups are taken by my customers. For price of new sorts, see Catalogue (2 stamps), of **WM. ETHERINGTON, Chrysanthemum Grower, Swanscombe, Kent**

SPECIAL OFFER OF FERNS.—Pteris tremula, P. cretica, P. cretica cristata, P. serrulata cristata compacta, in thumbs, fit for immediate potting. Also the same varieties, good stuff, in 48's, to offer in quantity. Prices per 100 or 1000 on application. **R. PENGELLY, Dyson's Lane, Upper Edmonton.**

The New Raspberry, LORD BEACONSFIELD. (A Seedling.) The finest Raspberry and best cropper ever known. First-class Certificate, Royal Horticultural Society. Canes £2 per 100; 6s. per dozen. Trade supplied; Cash with Order. **A. FAULKNER, Inkpen, Hungerford.**

SEAKALE for Forcing.—Selected large Crowns, none better in the Trade, 75s. per 1000; under 500, 8s. per 100. A remittance with all orders. **ALFRED ATWOOD, Grower, 14, Lavender Terrace, Battersea, S.W., late of 51, Shillington Street, Battersea, S.W.**

FOR SALE, 5000 GOOSEBERRIES, Crown Bob, 3 years old. **J. B. BUTTERFIELD, Freezy Water, Waltham Cross.**

LILY of the VALLEY, SPIRÆA JAPONICA, DIELYTRA SPECTABILIS, HELLEBORUS NIGER, &c. Large extra selected clumps for forcing. Price LISTS free. **DICKSONS (Limited), The Royal Seed Warehouse, CHESTER.**

ENGLISH YEWS, 3, 4, 5, and 6 feet. BOX, Green, 3, 4, 5, and 6 feet. Variegated, 3, 4, 5, and 6 feet.

PINUS AUSTRIACA, 3, 4, 5, and 6 feet. All well furnished, and finely rooted. Many thousands. **ANTHONY WATERER, Knap Hill Nursery, Woking, Surrey.**

SPECIAL OFFER.—ENGLISH YEWS, fine bushy plants, 2 to 3, 3 to 4, 4 to 5 feet, well furnished; CUPRESSUS LAWSONIANA, 2 to 3, 3 to 4 feet; also ERECTA VIRIDIS, 1½ to 2, and 2 to 3 feet, fine. **MATTHEWS AND SON, Milton, Stoke-on-Trent.**

EUONYMUS (Green).—50,000, all nice bushy well-grown Specimens, 9 to 36 inches, £1 to £10 per 100. **J. J. CLARK, Goldstone Farm, Brighton.**

SPECIAL OFFER.—RHODODENDRON PONTICUM, very bushy, 12 to 18 inches, £3 per 1000; do., 9 to 12 inches, very bushy, £3 per 1000; do. Stocks, strong, 75s. per 1000; Dwarf GLOIRE ROSES, strong, 35s. 100; Dwarf MOSS ROSES of sorts, from 20s. 100; do. LADY M. FITZ-WILLIAM ROSES, 6s. doz.; PORTUGAL LAUREL, very bushy and stout, 12 to 21 inches, 18s. per 100. Apply, **GRAY AND SONS, Brox Nursery, Chertsey.**

FOR SALE, a few thousand Canes of the celebrated SEMPER FIDELIS RASPBERRY, at 20s. per 100, delivered in Covent Garden Market. Apply to **C. NEWMAN, Bedford, Harrington, Middlesex.** **LANCASHIRE LAD GOOSEBERRIES WANTED.**

To the Trade and Others. **W. SIMS, Grove Nursery, Tooting.** ASPARAGUS (strong), 2-years, 5s. per 100; £2 2s. per 1000. SEAKALE, for Planting or Forcing, 6s. per 100.

CHOICE FLOWERS and FRUIT. Highest Market Prices guaranteed. **HENRY RIDES (late Wise & Rides), Fruit and Flower Salesman, Covent Garden, W.C.**

Surplus Cut Flowers. **HOOPER AND CO. (Limited) RECEIVE and DISPOSE** of any quantity of above at best Market Prices. Boxes, &c., supplied.—Address, Commission Department, **HOOPER AND CO. (Limited), Covent Garden, W.C.**

MESSRS. GREGORY AND EVANS, NURSERYMEN, Sidcup, and 285, 286, 287, 288, Flower Market, Covent Garden, London, W.C., are open to RECEIVE CONSIGNMENTS of Choice CUT FLOWERS in any quantity for their Commission Department. Boxes and Labels supplied. Telegraph Address—"COMMISSION, SIDCUP."

PINKERTON AND CO., Glasgow, FRUIT SALESMEN and AUCTIONEERS, have unlimited DEMAND FOR fine FRUITS, FLOWERS, and VEGETABLES. Weekly Sales of Plants and Shrubs during Season. TELEGRAPHIC ADDRESS—"PINKERTON," GLASGOW.

SQUELCH AND BARNHAM, North Row, Covent Garden, W.C., are OPEN TO DISPOSE of any quantity of MUSCATS and BLACK GRAPES, TOMATOS, CUCUMBERS, FRENCH BEANS, STRAWBERRIES, CHOICE FLOWERS, &c. Highest Market Prices obtained. Account Sales daily; cheques weekly, or as preferred by Sender. Baskets and Labels supplied. References given.

TO COUNTRY GROWERS of all Classes, having anything Good and Choice in the way of CUT FLOWERS, should be glad of a communication with view to future business. **W. RAVENHILL, 157, Norwood Road, Herne Hill, S.E.**

WANTED, STEPHANOTIS, EUCHARIS, ORCHIDS, ROSES, CHRYSANTHEMUMS, and other Choice CUT FLOWERS. Best Market Prices returned. Address **S. HILL, Jun., 21, Charlotte Street, Fitzroy Square, W., and Covent Garden Flower Market, W.C.**

WANTED, Young Plants of ARAUCARIA COOKII; any quantity up to 100.—State size, price and quantity, to W. G. HEAD, Crystal Palace, S.E.

LILIUM AURATUM.—THE GOLDEN-RAYED LILY OF JAPAN can now be purchased in Cases containing 50 fine Bulbs, just as received from the Japanese Bulb Farms, unopened and unexamined, at 25s. per Case; sent Free to any Railway Station in England and Wales on receipt of Postal Order for 23s. 9d. Cases containing 100 fine Bulbs, price 40s. Fine and sound Bulbs per dozen, 4s., 6s., 9s., 12s., and 18s. Mammoth Bulbs, 2s. 6d. and 3s. 6d. each. All sent packing and carriage free. **CARTERS', Royal Seedsmen by Sealed Warrants, 237 and 238, HIGH HOLBORN, W.C.**

NEW BRUSSELS SPROUTS. "PRESIDENT CARNOT."

JOHN ETHERINGTON DIXON, SEED MERCHANT, Lord Street, GAINSBOROUGH. For further particulars, see future Advertisements.

DAFFODILS a SPECIALTY.—Barr's Daffodils should now be potted for Indoor Flowering, or planted out in beds, or naturalized in Orchards, Meadows, and Woods. Illustrated CATALOGUE free on application. **BARR AND SON, 12, King Street, Covent Garden, W.C.**

VAN MEERBEEK AND CO., HILLEGOM, near HAARLEM, HOLLAND,

GROWERS of DUTCH BULBS. Goods delivered entirely free to destination. No packing charges.

ENGLISH CATALOGUE gratis and post-free on application. Cheap prices.

SPECIMEN CONIFERS.—Trees for Avenues, Evergreens, and Forest Trees in great variety. CATALOGUE free on application.—**RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.**

"SIR WATKIN" is the best NARCISS. Price and all particulars post-free. **DICKSONS (Limited), The Nurseries, CHESTER.**

CHRYSANTHEMUM CUTTINGS, strong and healthy, from 1s. per dozen, over 100 best varieties. List free.—The **GARDENER, The Lodge, Porchester Square, London, W.**

FOR SALE, 10,000 GENISTAS, in 3-inch pots, at 10s. per 100. Prices to the Trade on application. 20,000 well-rooted cuttings of Genistas, at 5s. per 100, sent on by Parcel Post. Money Orders payable at Leyton Green.—**T. BALDWIN AND SON, Edith Nursery, Burchall Road, Leyton.**

SEED TRADE, 1888-9. Before placing your Orders please write for our SPECIAL PRICES, which, owing to crops having proved better than expected, are exceedingly low. **HOWCROFT AND WATKINS, Seed Merchants, Covent Garden, London, W.C.**

STRAWBERRY PLANTS, in small pots. Splendid stuff of all best kinds, and true to name. Price List on application. **FRANCIS R. KINGHORN, Nurseryman, Richmond, Surrey.**

SULPHIDE of POTASSIUM (Harris).—A certain cure for Mildew on Plants, Red Spider, Aphid, &c. Enough to make 32 gallons of solution, free for 1s. 3d. The only kind to use is "Harris's" specially prepared Sulphide of Potassium." Sole Manufacturers:—PHILIP HARRIS AND CO. (Limited), 9, Bull Ring, Birmingham.****

CHRYSANTHEMUM CULTURE.—Standen's Manure, admitted by growers to be unrivalled for this purpose; in tins, 1s., 2s. 6d., 5s. 6d., and 10s. 6d. each. Sold by all Seedsmen.

THOMSON'S IMPROVED VINE and PLANT MANURE.—This valuable Manure is made only by us. Every bag and tin has our name on it. To be had of all Nursery and Seedsmen, and direct from us. 1 cwt. and over carriage paid. London Agent—**Mr. GEORGE, 10, Victoria Road, Putney.** **WM. THOMSON AND SONS, Clovenfords, Galashiels, N.B.** See Large Advertisement on Back Page.

SALES BY AUCTION.

Bulbs from Holland.

Sales every MONDAY, WEDNESDAY, and SATURDAY, in Large and Small Lots, to suit all Buyers.

MR. J. C. STEVENS will **SELL** by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., every MONDAY, WEDNESDAY, and SATURDAY, at half-past 12 o'clock precisely each day, first-class consignments of HYACINTHS, TULIPS, CROCUSES, and other BULBS, arriving daily from well-known Farms in Holland.

On view morning of Sale, and Catalogues had.

Wednesday Next.—(Sale No. 7802.)

2000 grand Bulbs of LILUM AURATUM, just received from Japan, in the finest possible condition.

MR. J. C. STEVENS will include the above in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY NEXT, November 21.

On view morning of Sale, and Catalogues had.

Wednesday and Saturday Next.

Several hundred choice named Standard and Dwarf ROSE TREES, from a well-known English Grower; BORDER PLANTS in variety, &c.

MR. J. C. STEVENS will include the above in his SALES by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY and SATURDAY NEXT, November 21 and 22.

On view morning of Sale, and Catalogues had.

Cheap Bulb Sales.

MESSRS. SMAIL AND CO. will **SELL** by AUCTION, at 123, Fenchurch Street, City, E.C., every MONDAY, WEDNESDAY, and FRIDAY, at 12 o'clock each day, large consignments of GLADIOLI, SPIRÆA, DIELYTRA, DUTCH BULBS, &c., lotted to suit all buyers. Horticultural Auction Rooms, 123, Fenchurch Street, E.C.

Dutch Bulbs.

Every MONDAY, THURSDAY, and SATURDAY. Great Unreserved Sales.

MESSRS. PROTHEROE AND MORRIS will **SELL** by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., every MONDAY, THURSDAY, and SATURDAY, at half-past 11 o'clock precisely, extensive consignments of first-class HYACINTHS, TULIPS, CROCUS, NARCISSUS, and other BULBS, from Holland, lotted to suit the Trade and Private Buyers.

On view morning of Sale, and Catalogues had.

Tuesday Next.—Sale by Sample.

MESSRS. PROTHEROE AND MORRIS will **SELL** by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on TUESDAY NEXT, November 20, at half-past 12 o'clock precisely, large quantities of NURSERY STOCK, from sample, including the following—

20,000 Scotch Fir	300 Cupressus Lawsonii
1,000 Laurels	3,000 Fruit Trees
200 Gooseberries	150 Dwarf Roses
200 Sycamores	200 Limes
2,000 Beech	3,000 Spruce Firs
3,000 Privet	1,000 Austrian Pine
3,000 Standard Roses	1,000 Sea Kale
5,000 Asparagus	7,000 Strawberries
1,000 Hollyhocks	300 Crimson Cloves

300 Geranium Niphotos and Queen.

Samples will be on view on morning of Sale. Catalogues had on application to the Auctioneers.

Tuesday Next.

English-grown CAMELLIAS and AZALEAS, and a fine assortment of GREENHOUSE PLANTS, Standard and Dwarf ROSES, of the best sorts; selected FRUIT TREES, Hardy EVERGREENS, Dutch BULBS, &c.

MESSRS. PROTHEROE AND MORRIS will **SELL** the above by AUCTION, at the City Auction Rooms, 48 and 49, Gracechurch Street, E.C., on TUESDAY NEXT, November 20, at half-past 12 o'clock precisely. On view morning of Sale. Catalogues had at the Rooms; and of the Auctioneers, 67 and 68, Cheapside, London, E.C., and Leytonstone, E.

Wednesday Next.

8000 LILUM AURATUM from Japan, splendid bulbs, just received; 3000 LILY OF THE VALLEY, BARR'S DAFFODILS, 500 AZALEAS and CAMELLIAS, GREENHOUSE PLANTS in variety, very fine EUCARIS Plants, English-grown LILIES and other HARDY BULBS.

MESSRS. PROTHEROE AND MORRIS will **SELL** the above by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on WEDNESDAY NEXT, November 21, at half-past 12 o'clock precisely.

On view morning of Sale and Catalogues had.

Lee, S.E.

Adjoining the Lee Railway Station.

IMPORTANT UNRESERVED SALE of unusually well-grown NURSERY STOCK, carefully prepared for removal, and affording an excellent opportunity for procuring Shrubs and Trees for immediate effective planting.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. B. Maller & Sons to **SELL** by AUCTION, on the Premises, at the Burnt Ash Hill Nurseries, Lee, S.E., on WEDNESDAY and THURSDAY, November 21 and 22, at 12 o'clock precisely each day, a large quantity of remarkably well-grown NURSERY STOCK, including a splendid assortment of well-rooted Conifers and Evergreen Shrubs, 1500 Laurels, Privet, and Yews; 1000 Green Hollies, bushy plants; 5000 Standard and Ornamental Trees; 3000 Standard and Pyramid Fruit Trees, 5000 Red, White, and Black Currants; 1000 Standard and Dwarf Roses, and other Stock.

May be viewed any day prior to the Sale. Catalogues may be had on the Premises; and of the Auctioneers, 67 and 68, Cheapside, E.C., and Leytonstone, E.

N.B.—The Auctioneers desire to call special attention to this Sale, the Stock being in a particularly healthy condition.

Finchley Road, N.W.

Important to Florists and others engaged in the Nursery and Furnishing Trade.

SALE POSTPONED from November 15 to THURSDAY, NOVEMBER 22.

The compact and old-established NURSERY and FLORISTS' BUSINESS for SALE, by order of Mr. W. A. Clingo, who is leaving the neighbourhood.

MESSRS. PROTHEROE AND MORRIS are instructed to **SELL** by AUCTION, on the Premises, the Waverley Nurseries, situate in the Finchley Road, London, N.W., a few minutes' walk from Marlborough Road Station, on THURSDAY NEXT, November 22, 1888, at 2 o'clock precisely, in one lot, as a going concern, the compact Leasehold Property known as the WAVERLEY NURSERY, Finchley Road, N.W., with 11 GREENHOUSES, PITS, STABLING, and the whole of the STOCK and UTENSILS IN TRADE, held for about 12 years unexpired at £20 per annum; also the FLORISTS' SHOP, No. 18, Finchley Road, occupying a prominent position, and held for 19 years unexpired at £50 per annum; 4 span-roof GREENHOUSES in Queen's Terrace, held for 15 years at £45 per annum; and a piece of NURSERY GROUND at the corner of Alexandra Road, close to London Road Station, held at £20 per annum.

Particulars and conditions of Sale may be had on the Premises, of Messrs. GOWING AND CO., Solicitors, 40, Finsbury Pavement, E.C.; and of the Auctioneers, 67 and 68, Cheapside, London, E.C., and Leytonstone, E.

Friday Next.

DENDROBIUM TREACHERIANUM.

MESSRS. PROTHEROE AND MORRIS will **SELL** by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY NEXT, November 23, at half-past 12 o'clock precisely, an importation of the extremely rare, handsome, and distinct new DENDROBIUM TREACHERIANUM, from Northern Borneo, of which only a few plants at present exist in this country. It has been flowered by W. E. Brymer, Esq., of Dorchester, from whose plant a drawing was made, and appeared in Vol. VI. of the *Orchid Album*, Part 72. Drawing will be shown at Sale.

On view morning of Sale, and Catalogues had.

Friday Next.

EXTENSIVE IMPORTATION OF ORCHIDS.

Fifty cases, the whole for Sale, without the least reserve.

MESSRS. PROTHEROE AND MORRIS will **SELL** by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on FRIDAY NEXT, November 23, at half-past 12 o'clock precisely, extensive importations of ORCHIDS, received direct for unreserved Sale, being the contents of about 50 cases, including the following:—

A very fine lot of VANDA SANDERIANA, 300 CYPRIPEDIUM NIVEUM, 100 PHALENOPSIS AMABILIS, and others, from Mr. Roel elen.

Two Cases of a NEW ODONTOGLOSSUM, dried flowers of which will be shown at the time of Sale.

23 Cases of CATTLEYA PERCIVALIANA, collected in bloom, and consisting of the finest varieties, and masses of extra size.

One Case of very large ONCIDIUM PAPILLO; also CATTLEYA LOBATA SUPERBA and C. LABIATA WARNERII. 200 CATTLEYA DOWIANA, LÆLIA GOULDIANA, and ESTABLISHED ORCHIDS in variety.

Also an importation of the extremely rare, handsome, and distinct new DENDROBIUM TREACHERIANUM.

On view morning of Sale, and Catalogues had.

Friday Next.

VANDA SANDERIANA.

MESSRS. PROTHEROE AND MORRIS will include in their SALE on FRIDAY NEXT, a fine lot of VANDA SANDERIANA; also 300 CYPRIPEDIUM NIVEUM, and other ORCHIDS, from Mr. C. Roebelen.

On view morning of Sale, and Catalogues had.

Tuesday, November 27.

SEMI-ESTABLISHED and IMPORTED ORCHIDS.

MESSRS. PROTHEROE AND MORRIS will **SELL** by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on TUESDAY, November 27, at half-past 12 o'clock precisely, by order of R. B. White, Esq., 300 ODONTOGLOSSUM CRISFUM, semi-established, clumps of great strength, unfloowered, from this year's importation. Several plants from the same importation have already opened flowers of fine variety. Fifty specimen plants of CATTLEYA MENDELLII, semi-established, also unfloowered in England; and about fifty lots of miscellaneous IMPORTED ORCHIDS, including Oncidiums, Epidendrums, Chysis, &c.

On view morning of Sale, and Catalogues had.

Tuesday, November 27.

ORCHIDS IN FLOWER.

MESSRS. PROTHEROE AND MORRIS desire to announce that their NEXT SALE of ORCHIDS in FLOWER, will take place as above, for which they will be glad to RECEIVE NOTICE OF ENTRIES as soon as possible.

Hornsey Nursery.

SALE as the whole of the extensive Stock of FERNS, Specimen White and other CAMELLIAS, HORSE, CARTS, &c., by order of Mr. J. Page, who is relinquishing the business.

MESSRS. PROTHEROE AND MORRIS will **SELL** by AUCTION, on the Premises, the Hornsey Nursery, Hornsey, N., on WEDNESDAY, November 28, at 12 o'clock precisely, the whole of the extensive STOCK of about 50,000 FERNS, of sorts, in Lots to suit the Trade and Private Buyers, consisting of Pteris, in variety; Adiantums and others; PALMS, DRACÆNAS, CHRYSANTHEMUMS, large White AZALEAS, for forcing; magnificent Specimen Double White and other CAMELLIAS, profusely set with bud, and other Stock; Grey Horse, Four-wheeled Van, Tumbril Cart, two light Carts, Rollers, Heaps of Loam and Manures, &c.

May be viewed two days prior to the Sale. Catalogues had on the premises, and of the Auctioneers, 67 and 68, Cheapside, E.C., and Leytonstone, E.

N.B.—The NURSERY TO BE LET, with early possession—an unusual opportunity for a young beginner. Full particulars of the Auctioneers.

Barnet, N.

By order of the Court of Chancery. Cornwell v. Cornwell.

SALE of the old-established NURSERY BUSINESS as a going concern, and also about 6 acres of FREEHOLD and COPYHOLD LAND.

MESSRS. PROTHEROE AND MORRIS are instructed to **SELL** by AUCTION, at the Mart, Tokenhouse Yard, London, E.C., on FRIDAY, November 30, at 2 o'clock precisely, the following properties:—

Lot 1.—The old-established NURSERY, SEED, and FLORISTS' BUSINESS, known as the HADLEY NURSERY, Barnet, N., occupying a good position in the best part of the High Street, within eight minutes' walk of the High Barnet Railway Station. The Property comprises about 10 acres of Ground, with eight Greenhouses, Dwelling-house, and Seed Shop, the whole held for an unexpired term of about fifteen years at the moderate rental of £65 p.r. annum. The Goodwill of the Business carried on for so many years will be included in this lot.

Lot 2.—About 6 acres of valuable FREEHOLD and COPYHOLD BUILDING or NURSERY LAND, known as the COMMON NURSERY, Barnet Common, possessing long frontages to the main road, and to Union Lane in the rear.

Lot 3.—Two acres of LAND, opposite Lot 2, held at £7 per annum.

This Sale offers an unusual opportunity for any one desirous of embarking into the Nursery Business. The whole of the STOCK IN TRADE will be sold by Auction, thus enabling purchasers to secure only such stock as may be required for carrying on the business at unreserved auction prices.

Particulars and Conditions of Sale may be had on the Premises, of Messrs. HOUGHTONS and BYFIELD, Solicitors, 85, Gracechurch Street, E.C.; and at Barnet, Herts; of Messrs. MONTAGU SCOTT and BAKER, Solicitors, 10, Gray's Inn Square, W.C., and Hatfield; and of the Auctioneers, 67 and 68, Cheapside, London, E.C., and Leytonstone, E.

Friday, December 7.

Selected DUPLICATE PLANTS from the well-known collection of R. J. Measures, Esq., consisting almost entirely of rare and valuable hybrid CYPRIPEDIUMS.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions from R. J. Measures, Esq., to **SELL** by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY, December 7, 1888, at half-past 12 o'clock precisely, selected DUPLICATE PLANTS from his well known Collection, including the following:—

Cypripedium Measuresianum	Cypripedium expansum
" apiculatum	" melanthophallum
" Tinibautianum	" Fraserii
" Germianum	" leucorhodum
" orphnum	" Wallaertianum
" reticulatum	" Hartwegianum
" Carrierni	" plunetum
" Williamsii	" regale.
" Turpe	

On view morning of Sale, and Catalogues had.

West Wickham, Kent, close to S.E. Station.

NURSERY STOCK SALE.

MR. W. LEVENS is instructed by Mr. Cook, to **SELL** by AUCTION, at West Wickham Nursery, on SATURDAY, November 17, at 12 o'clock prompt, about 40,000 well-grown FOREST TREES, SHRUBS, FRUIT TREES, &c.; also about 800 Standard and Dwarf ROSE TREES of the best varieties. On view prior to Sale.

Catalogues of the Auctioneer, Railway Bridge, Beckenham.

Broom Farm, Parson's Green, Fulham, S.W.

Without Reserve.—Without Reserve.

To MARKET GARDENERS, NURSERYMEN, and SEEDSMEN.

MR. R. J. STEEL is favoured with instructions from Mr. A. W. Taylor to **SELL** by AUCTION Without Reserve on the above farm on THURSDAY, November 22, 1888, at 1 o'clock precisely, in convenient lots, 7 Acres of SEAKALE of the well-known Fulham strain. The crowns being well grown are particularly adapted for forcing for the Trade, and an unusual opportunity is now given for growers to obtain sets of this justly-famous strain of Seakale.

May be viewed day prior and morning of Sale. Catalogues of the Auctioneer, 28, Wellington Street, Strand, W.C.; and Hanwell, Middlesex.

Coombe Bank, Sundridge, Sevenoaks.

IMPORTANT SALE of VALUABLE HOTHOUSE and other PLANTS.

MR. JOHN WHITE is instructed by W. H. Spottiswoode, Esq. (the Mansion and Grounds having been let for a term) to **SELL** by AUCTION, on the Premises as above, on FRIDAY, November 23, 1888, at 12 o'clock precisely, the whole of the CONTENTS of the HOTHOUSES, VINERIES, FORCING PITS, FRAMES, &c., comprising choice Specimen Plants, Azaleas, Palms, Camellias, Rhododendrons, Aloes, Cacti, Orchids, Ferns, Begonias, Pelargoniums, Chrysanthemums, Bedding Geraniums, and other plants, Fuchsias, Primulas, Eucharis, Strawberry plants, &c.

May be viewed on the day prior to and morning of Sale; and Catalogues may be had at the Inns in the neighbourhood, and of the Auctioneer, 53, London Road, Sevenoaks.

Penge Nursery.

Within 10 Minutes' Walk of Three Railway Stations on the London, Brighton, and South-Coast, and London, Chatham, and Dover Railways.

MR. W. LEVENS is instructed to **SELL** on the Premises as above, on SATURDAY, November 24, 1888, and FOLLOWING SATURDAY, at 11 for 12 o'clock, about 1500 Standard and Dwarf ROSES, 15,000 Evergreen SHRUBS, of the usual varieties (including very fine Aucubas), FRUIT and FOREST TREES, Quantity of White, Pink, and Scarlet PEONIES, &c. The whole are well rooted, and adapted for immediate planting.

May be viewed any day previous to the Sale. Purchasers will be allowed one month to clear their Lots. Catalogues on the Premises, and of the Auctioneer, Railway Bridge, Beckenham.

Laxton's Nursery, Kimbolton Road, Bedford.
MESSRS. STAFFORD AND ROGERS have been favoured with instructions to **SELL BY AUCTION**, on **FRIDAY, November 23, 1888**, at 11 o'clock punctually, the whole of the valuable stock of **FRUIT TREES**, comprising from 4000 to 5000 of the choicest and best sorts of Apples, Pears, Plums, Apricots, Cherries, Peaches, &c.; 1000 ROSES, about 80 Bushels of the best sorts of POTATOS, 50 Bushels of White Spanish ONIONS, 7 Bushels of Seed PEAS, BEANS, &c.; HERBACEOUS PLANTS, ASPARAGUS PLANTS, HERBS, SEEDS, &c.; number of TOOLS, and numerous Effects.
 Catalogues may be obtained of Mr. LAXTON, or of the Auctioneers, Bedford.

WANTED TO PURCHASE, SEED and FLORAL BUSINESS with or without Nursery, or would enter into **PARTNERSHIP** when mutual confidence established.
ABSTAINER, Gardeners' Chronicle Office, 41, Wellington Street, Strand, W.C.

To Market Gardeners, Florists, Nurserymen, &c. HAMPTON-ON-THAMES.

FOR SALE, choice FREEHOLD LAND, in Acre Plots, suitable for above. Rich Garden Soil with gravel and sand sub-soil. The land is considered by the Trade the finest near London for Grapes and all other Market Products. Apply, **SECRETARY, Estates Investment and Villa Farm Company, Estate Office, Tangle Park, Hampton-on-Thames.**

FOR SALE, or TO BE LET, seven nearly new and extensive **GREENHOUSES**, with Heating Apparatus complete, Forcing Pits, and Potting Sheds, conveniently situate in Colchester. There is a good Garden attached.
 For full particulars, apply to **Mr. CHAS. E. BLAND, Crouch Street, Colchester.**

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LARGE GARDEN, 20 Acres, with Twenty Greenhouses and Vineries. £7000 has been spent on the property. Seven years' lease. Two Cottages inclusive. £150 a year.
ELDRIDGE, Portsmouth.

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TO BE LET, for a Term of Years, being a rare opportunity for an energetic man with a small capital to take to an old-established business, a nice compact little **NURSERY** of 3 acres, with 4 suitable Glass-houses, Seed Shop, Shed, and Stabling on the same; sufficient with a little outlay for carrying on a good Plant and Fruit Trade, together with the Market Garden Business combined, if required. The premises occupy a commanding position, being close to a Railway Station and Market Town, and having other advantages. The stock on place not being large could be taken to at a low Trade valuation to suit purchaser, and possession could be had at once by agreement with Trustees. Further particulars from **A. W. GODWIN, Railway Station, Ashbourne.**

TO LET, GARDEN, GLASSHOUSES, and LAND. Good Garden, with high walls, several Glass-houses, heated with Hot Water; 3 acres of first-class Tillage, Garden Land, Cottage, Stable, &c.
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PROTHEROE AND MORRIS, HORTICULTURAL MARKET GARDEN and ESTATE AUCTIONEERS and VALUERS, 67 and 68, Cheapside, London, E.C., and at Leytonstone, E. Monthly Horticultural Register had on application.

ORCHIDS.
THE LIVERPOOL HORTICULTURAL CO. (JOHN COWAN), Limited,
 ARE CONSTANTLY RECEIVING

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Established and Semi-established ORCHIDS.

Full particulars sent free on application.

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CLOVES.—Look at Prices.—CLOVES.
 True old Crimson CARNATION, splendidly rooted, strong plants, 2s. doz., 12s. 100. Ground roots white CACTUS DAHLIA, 4s. doz.; splendid seedling CARNATIONS, 2s. 6d. doz., 18s. 100; IRIS RETICULATA, 3s. doz.; MADONNA LILY, 2s. 6d. doz.; PANTHER LILY, 5s. doz.; WALL-FLOWERS, blood, yellow, fine, 3s. per 100; GERMAN SCABIOUS, 1s. 6d. doz.; all strong, packed free.
MANAGER, Nurseries, Sandy Lane, Chester.

TO LARGE PLANTERS OF THORN QUICKS.—1 to 1½ foot, 9s. per 1000, £40 per 100,000; 1½ to 2 feet, 11s. per 1000, £50 per 100,000; 2 to 2½ feet, 13s. per 1000; 2½ to 3 feet, 15s. per 1000; 3 to 4 feet, 18s. per 1000.
GARLIES MITCHELL, Nurseryman, Stranraer.

Roses, Fruit Trees, &c.
CHARLES TURNER'S Autumn CATALOGUE, containing full collections of Roses, Fruit Trees, Conifers, and all kinds of Hardy Trees and Shrubs, is now ready, and may be had free on application.
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80,000 CLEMATIS, in Pots, of all the finest Double and Single Varieties (some of the flowers of which become 10 inches across, and are of every shade, from pure white to the darkest purple), for climbing and bedding, from 12s. to 24s. per dozen, strong plants; extra strong plants, repotted into 5½-inch pots, 2s. 6d. each; Beauty of Worcester, a magnificent purple, excellent for bedding, recently sent out by us, reduced price 2s. 6d. each. Descriptive LIST on application.—**RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.**

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 The following Trees must be sold, to clear the ground:—
 330 LIMES, 10 to 13 feet.
 625 HORSE CHESTNUTS, 12 to 14 feet.
 380 WALNUTS, 6 to 12, to 18 feet.
 110 SYCAMORES, 8 to 10 feet.
 Offers for a part or the whole to be sent to the **MANAGER, Calcot Gardens, Reading, Berks.**

CLEARANCE SALE (at sacrifice) of PALMS, DRACENAS, &c.
LATANIA BORBONICA and PHENIX RECLINATA, 12 inches high, 4s. per dozen, 30s. per 100. Package and carriage free.
LATANIA BORBONICA, SEAFORTHIA ELEGANS, CORY-PHA AUSTRALIS, and PHENIX RECLINATA, 20 to 24 inches high, 1s. 6d. each, 16s. per dozen; same kinds, 2 feet 6 to 3 feet high, 3s. to 5s. each.
 Handsome **PALMS**, 4 feet high, 18s. each.
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 Twelve assorted **PALMS and DRACENAS**, averaging, with pots, 24 inches high, in wood case, free, 18s.; six do., 10s. **KENTIAS**, 3s. to 21s. each.
DRACENAS, 24 inches to 5 feet high, 2s. to 40s. each.
 Inspection invited.
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DRIED PALM LEAVES.—Immense importation of CHAMÆDORÆAS and ARECÆAS.—For Prices, apply to **WATSON and SCULL, 90, Lower Thames Street, London, E.C.**, where samples can be seen; or direct to the Importers, **PETER SMITH AND CO., Hamburg.**

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30,000 DWARF ROSES.—Cheaper than ever! All the best leading varieties. Warranted true to name. The best money can buy. Sample dozen from 3s.; 22s. per 100, packing free, for Cash with order. Send for a List.
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HALF-SPECIMEN STEPHANOTIS, free-flowering variety, very fine stuff, 10 to 12 feet; also 25,000 **AUCUBAS**, all sizes. For particulars apply to **G. SMITH, Dell Nursery, Rock Ferry, Cheshire.**

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CREEPERS FOR WALLS.—By planting what is suitable, an ugly object may easily be made beautiful. Most being in pots, can be sent and put out at any time. Descriptive LIST and advice free.—**RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.**

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WM. PAUL and SON beg to call the attention of Planters to the following articles, of which they hold very large stocks, and are consequently able to offer at unusually low prices. The quality of the trees is in all respects first-rate, and all are in excellent condition for removal:—
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 Aucuba japonica, 1½ to 2 feet, 30s. per 100; do., 2 to 2½ feet, 40s. per 100. Berberis aquifolia, 1½ to 2 feet, 12s. per 100; Box tree, 1½ to 2 feet, 12s. per 100; 2 to 3 feet, 20s. per 100. Cotoneaster Simonsii, 3 to 3½ feet, 10s. per 100; Deutzia crenata, flore pleno, strong, 4s. per dozen; Escallonia macrantha (pots), strong, 21s. per 100; Griselinia littoralis, 1½ to 2 feet, 35s. per 100; Honeysuckle (strong), 8s. per 100; Irish Ivy, 4 feet, 6s. per 100; Laurel, common, 1½ foot, 6s. per 100; 2 feet, 10s. per 100; 3 to 4 feet, 16s. per 100. Colchic Laurel, 1 to 1½ foot, 12s. per 100; 2 to 2½ feet, 16s. per 100; 3 to 3½ feet, bushy, 20s. per 100. Portugal Laurel, 1 to 1½ foot, 16s. per 100; 1½ to 2 feet, 20s. per 100. Rhododendron ponticum, 1 to 1½ foot, 22s. per 100; 1½ to 2 feet, 30s. per 100; 2 to 2½ feet, 35s. per 100; 3 feet, 50s. per 100; 4 to 4½ feet, bushy, 80s. per 100. Aulus Douglasii, 3 to 4 feet, 35s. per 100; 4 to 5 feet, 50s. per 100; do., 6 feet, 70s. per 100. Araucaria imbricata, 2 to 2½ feet, 30s. per dozen; 3 to 3½ feet, 45s. per dozen; 3 to 4 feet, 60s. per dozen. Cupressus Lawsoniana, 2½ feet, 20s. per 100; 3 to 4 feet, 40s. per 100. C. stricta, 2 to 2½ feet, 40s. per 100; 5 to 6 feet, extra fine, 18s. per dozen. C. erecta viridis, 1½ to 2 feet, 25s. per 100; do., 2 to 2½ feet, 35s. per 100. Picea Nordmanniana, 1½ to 2 feet, 30s. per 100; do., 2 to 2½ feet, extra, 40s. per 100. Retinospora plumosa, 18 inches, 25s. per 100; 1½ to 2 feet, 30s. per 100; 2½ feet, extra, 40s. per 100. R. squarrosa, 1½ foot, bushy, 30s. per 100; Thua Lobbi, 1½ to 2 feet, 12s. per 100; 2 to 2½ feet, 21s. per 100; 4 feet, 50s. per 100; 6 feet, 18s. per dozen. Thuopsis borealis, 2½ to 3 feet, 8s. per dozen; T. dolabrata, 1 foot, 30s. per 100; 1½ to 2 feet, 12s. per dozen; 2½ to 3 feet (fine), 30s. per dozen.
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CARNATION "GLOIRE DE NANCY."
 We are sending out for the fourth season our true strain of this the grandest White Carnation in cultivation, quite hardy, and for pot culture for cut bloom it has no equal. Robust and free bloomer. £1 per 100, 11s. for 50, 6s. for 25, good rooted layers. We have a fine stock of **GARDENIAS**, the best sorts in cultivation, from 1s. to 40s. each, Cash with Order.
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Having Grown
ADIANTUM CUNEATUM ELEGANS five years, I have proved its value as a Cut Flower for Market. Will put on Rail Plants in 8-inch pots, 7s. 6d. each, cash.
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 Thousands of Standard, Pyramid, Bush and Espalier Fruit Trees, comprising most of the best sorts of Apples, Pears, Plums and Cherries, strong healthy trees with fibrous roots.
 300 **SCOTCH FIRS**, 5 to 6 feet, well furnished.
 500 **KENT COB NUTS**, large bushes, 5 feet.
 500 **LAUREL**, 3 yr. transplanted, very bushy.
 500 **SWEET BRIERS**, 4 feet, well furnished.
 Price LISTS of above and General Nursery Stock post-free on application to
EVES and DALTON, Nurserymen and Fruit Growers, Gravesend

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 YEWs, English, 1½ to 2 feet, 30s. per 100; 2 to 2½ feet, 45s. per 100; 2½ to 3 feet, 65s. per 100.
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 We hold immense stocks of the above, all bushy and well rooted Plants.
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Excellent Seeds and Bulbs at low prices
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Direct from Sea-coast Nursery, where thoroughly acclimatised. New Hardy Tree CATALOGUE on application. **DICKSONS (Limited)**, The Nurseries, CHESTER.

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should now be potted for Indoor Flowering, or planted out in beds, borders, or naturalised in Orchards, Meadows, Woods, &c. CATALOGUE on application. Abundance of Bedding HYACINTHS, TULIPS, CROCUS, SNOWDROPS, ANEMONE FULGENS, &c., in fine condition.

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FOR SALE, Cheap, 8000 OAKS, 10 to 15 feet, 30s. per 100; 700 CHESTNUTS, 10 to 15 feet, 35s. per 100. Apply to

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SEVENTY-FOUR ACRES.

APPLES, PEARS, PLUMS, CHERRIES, PEACHES, NECTARINES, APRICOTS, and other FRUIT TREES, as Standards, Dwarfs, Pyramids, Bushes, Cordons, and Trained Trees in great variety.

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Arcaurica imbricata, 10 to 12 inches, 50s. per 100; *Abies Douglasii*, 1-yr., 4s. per 100; *A. orientalis*, 1-yr., 30s. per 1000; *American Arborvitæ*, 1½ foot, 60s. per 1000; *Sweet Bay*, 1-yr., 30s. per 1000; *Scutellaria*, 1-yr., 6s. per 100; *Cupressus macrocarpa*, 1-yr., 30s. per 1000; *Lawsonii*, 18 inches, 60s. per 1000; *erecta viridis*, 4 inches, 30s. per 1000; *do.*, 1 foot, 12s. per 100; *stricta*, 1 to 1½ foot, 12s. per 100; *Allumii*, 1 foot, 14s. per 100; *Cedrus atlantica*, 1-yr., 1-yr. transplanted, 10s. per 100; *C. Deodara*, 1-yr., 7s. per 100; *Escallonia macrantha*, pots, 14s. per 100; *Laurel (common)*, 2-yr., 20s. per 1000; *Portugul Laurel*, 1-yr. transplanted, 20s. per 1000; *Colchic Laurel*, 1-yr., 25s. per 1000; *Laurel rotundifolia*, 1-yr., 25s. per 1000; *Limes*, 1-yr. transplanted, 16s. per 1000; *Pinus Cembra*, 3-yr., extra, 16s. per 1000; *P. insignis*, 1-yr., 3s. 6d. per 100; *P. excelsa*, 1-yr., 4s. per 100; *P. Nordmanniana*, 1-yr., 30s. per 1000; *P. Jeffreyi*, 1-yr., 6s. per 100; *P. Mastersiana*, 1-yr., 10s. per 100; *P. Strobus*, 2-yr., 2s. per 100; *Oak Evergreen*, 1-yr., 30s. per 1000; *Scarlet Oak*, 1-yr., 3s. per 100; *Privet ovalifolium*, 8 to 9 inches, 10s. per 1000; *Retinospora plumosa*, 10 to 12 inches, 10s. per 100; *R. squarrosa*, 8 to 9 inches, 8s. per 100; *do.*, 1 foot, 12s. per 100; *Thuia Lobbi*, 8 to 10 inches, 30s. per 1000; *do.*, 15 inches, 45s. per 1000; *T. dolobrata*, 8 to 9 inches, 80s. per 1000; *do.*, 10 inches, fine, 12s. per 100; *T. Ellwangeriana*, 6 to 8 inches, 6s. per 100; *Veronica Traversii*, 6 to 8 inches, fine, 6s. per 100; *English Yew*, 1-yr., 1-yr. transplanted, 20s. per 1000; *do.*, 8 to 10 inches, 7s. per 100; *Irish Yew*, 6 to 9 inches, 10s. per 100.
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 The unique and very best selected collection in the world—300 varieties of *P. arborea*; 350 of *P. sinensis*, including new, rare and very rare varieties; also Japanese and Chinese sorts. Special Collections well selected for Amateurs. Ask for the Descriptive CATALOGUE of Prices, printed in English, to **L. PAILLET**, Nurseryman, Chateaux (Seine), near Paris, France. Established 1827.
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 The most complete and exhaustive Treatise on Grapes and their Culture ever published.
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 Price 5s., post-free 5s. 6d.
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 Price for the lot, on rail at Bardon Hill Station, to be sent to **J. B. ELLIS**, The Gynsills, near Leicester.
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Cape Bulbs—Cape Bulbs.
THE CAPETOWN BOTANIC GARDENS request their Trade Correspondents to forward their Orders for this season's Bulbs as early as possible. Delivery in Jan. & Feb.—**A. F. BAXTER**, Sales Depart., Botanic Gardens, Capetown.

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COCOA-NUT FIBRE REFUSE (finest quality),
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RAFFIA, LABELS, STICKS, from 1 ft. to 5 ft., **BAMBOO CANES**, ¾ ft. to 12 ft., **VIRGIN CORK**, **CHEMICAL MANURES**, **NETTING**, &c.
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To

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LONDON, W.C.

1888.

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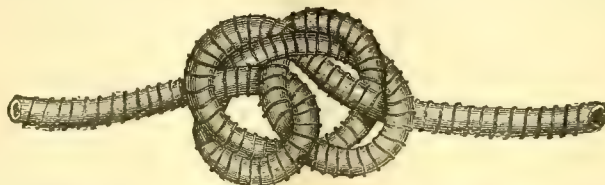
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Registered, and in operation since May, 1888. Incorporated under the Companies' Acts 1862 to 1886, whereby the liability of each Shareholder is limited to the amount remaining unpaid on his Shares.

THE SPHINCTER GRIP



ARMOURD HOSE COMPY. (LIMITED).

During the few months in which these Hoses have been offered in England, so great has been the demand that, with existing plant and resources, it has been found difficult to keep the market supplied; and the trade now being done shows a considerable margin of profit. Orders for this Hose are daily received by the Company, which are now being executed as rapidly as possible. Over fifty orders and contracts are now in hand.

CAPITAL £100,000 IN SHARES OF £1 EACH.

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Works: FARRINGTON ROAD, LONDON, E.C.

ABRIDGED PROSPECTUS.

PATENTS ACQUIRED.—The Company has purchased the well-known COULTAUS' PATENTS, for the United Kingdom and France, together with the rights for the same invention in Austria, Belgium, Holland, Denmark, Norway, Sweden, Russia, Turkey, Italy, Spain, Portugal, Australia, India, and the Colonies (except Canada), with the right to acquire the valuable German Patents, and to develop and extend the already large sale of Sphincter Hose.

The new issue of £25,000 is made for the express purpose of enabling the Company to extend and further develop its business in England, the Continent, Colonies, and other countries covered by its Patents, and to increase the existing plant to meet the demand which has ensued.

WHAT IS THE SPHINCTER GRIP ARMOURD HOSE?—The Sphincter Grip Armour process differs in many essential and important features from other processes of coiling or adapting steel wires into a spiral form, either as an armour strictly speaking, or for the purpose of a spring. Under it the wire is wound around the hose, with a perfect grip, without any tendency to expand and open backwards after it has been placed in its intended position. It has been found hitherto impossible to obtain this holding tendency without fastening and securing the wire at each end, whereas Hose may be armoured under these patents in any length and in any size, and can be cut anywhere without loosening or uncoiling, the Sphincter Grip of the wire being self-holding through its entire length.

The Company's Books contain many hundred current accounts with some of the leading Noblemen and Gentry, and most important Brewers, Distillers, Railway and Steamship, Mining and Gas, and Water Companies, Town Councils, and Municipal Corporations, Builders, Contractors, Mills, and Factories, &c. (List of users to complete Prospectus.)

The Company have established Agencies in various parts of the United Kingdom, and have orders in hand or executed for Australia, India, the Cape, South America, and the Continent.

SOME ADVANTAGES OF THE SPHINCTER GRIP HOSE OVER OTHERS.—It cannot Kink. More Hose is destroyed by the sudden concussion through kinking when a full velocity of water is rushing through it than in actual Wear. "Kinking Destroys Hose." It will stand practically unlimited pressure. The armour is a perfect protection from abrasion. It is more flexible than other hoses. The flow of water is never obstructed or interrupted. Its advantages over other so-called armoured hose are that—There is no oil or other obnoxious preparation in the manufacture of the Hose; there is no inside spiral wire to diminish and resist the flow of water; it cannot collapse in ordinary use; the Sphincter Grip Armourd Hose can be cut anywhere without loosening or uncoiling, as it is self-holding throughout its entire length. The cost to the consumer of Sphincter Grip Hose is no greater than that of ordinary first-class hose, and for high pressures will actually be less, while its lasting qualities are many times greater. As a Steam Hose it supplies a long-felt want, as it will stand practically unlimited pressure, and may be used with safety and impunity.

The Company will have the virtual monopoly of this branch of the trade; and as an illustration of the profit that may be reasonably anticipated, the well-known article of Garden Hose may be instanced, of which upwards of 5,000,000 feet are annually manufactured in the United Kingdom. The armouring of even a portion of this would be a considerable source of profit on the capital employed, while the hose for Railway, Mining, Manufacturing, and other purposes, of which a far larger quantity is sold, would yield a proportionate profit. In addition to this there will be the trade profits to be realised on the hose itself, and from other works which the Company have and will embody in their undertaking.

See Complete Prospectus for other Sources of Profit and particulars as to the general business and operations of the Company.

COST OF PRODUCTION.—The cost of armouring hoses is small. The presence of the armour imparting enormous strength renders the hose practically indestructible, and allows the use of a lighter rubber and less material than would be required in an unarmoured hose answering a similar purpose; hence this Hose can be manufactured and put in the market at as cheap a rate as any other hose.

The price paid for the Armoured Hose Patents is £5000 in cash by instalments, and £15,000 in fully paid up shares. See note above.

The Company's present plant is now in full operation, and from the Hose business alone the Directors have every reason to expect that a dividend will be declared at the next ordinary General Meeting.

No promotion money has been or will be paid.

Trade and other contracts have been entered into, particulars of which can be had on application.

Prospectuses and Forms of Application for Shares may be obtained at the offices of the Company, of the Bankers, Brokers, and Solicitors, where the Memorandum and Articles of Association can be seen. Where no allotment is made the deposit will be returned in full, and where a less number of shares are allotted than applied for, the balance of the deposit will be applied towards the payment due on allotment.

LONDON, November, 1888.

FORM OF APPLICATION FOR SHARES, AT PAR.

To be sent to the Secretary, Mr. F. MARTEN HALE, at the Offices of the Company, 63, Fore Street, London, E.C., who will procure and forward Bankers' receipt.

ENTITLED TO BE PAID UP IN FULL.

To the DIRECTORS of

THE SPHINCTER GRIP ARMOUR HOSE COMPANY, LIMITED.

GENTLEMEN,—

Enclosed remittance £..... being the required deposit of Two Shillings per Share, I beg to request that you will allot me Ordinary Shares of £1 each in the above-named Company, upon the terms of the Company's Prospectus, dated November, 1888, and I hereby agree to accept the same or any smaller number that may be allotted to me, and I authorise you to register me as the holder of the said Shares.

Dated this day of 1888.

Name in full (with additions)

Address

Profession or Occupation

Signature

PLANTING SEASON.

**HARDILY-GROWN
FOREST, FRUIT,
& ALL OTHER
TREES & PLANTS,
Evergreens, Roses, &c.**

NURSERIES 400 ACRES.

Largest & Finest Stocks in Europe.
INSPECTION EARNESTLY INVITED.

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(LIMITED),
**The Nurseries,
CHESTER.**

Address for Letters & Telegrams—**Dicksons Chester.**

*Bulb Planting should be completed
without delay.*

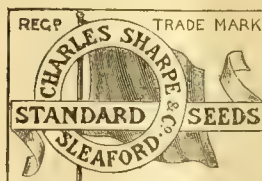
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Are the Best Quality, and offered at
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**CHARLES SHARPE & CO.,
SEED MERCHANTS,
SLEAFORD,**

Have Registered the above Trade Marks—with
which Seeds sent out from their Establishment
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*Special Offer of their Select Stocks (Home-grown)
of Garden and Field Seeds on application.*

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LITTLE & BALLANTYNE
*invite inspection of their large and
select stock of Forest Trees, Shrubs,
Plants, Roses, Fruit Trees, &c.,
which is of superior quality.*

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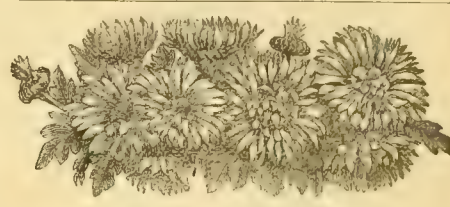
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GARDEN OPERATIONS.

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THE GARDENERS' CHRONICLE,
Vol. III., Third Series, JAN. to JUNE, 1888.
W. RICHARDS, 41, Wellington Street, Strand, W.C.



THE
Gardeners' Chronicle.

SATURDAY, NOVEMBER 17, 1888.

THE EARLY HISTORY OF VINE CULTURE IN ENGLAND.

THE exact period at which the Vine was first introduced into England is uncertain, but from a remark in the *Vita Agricola* of Tacitus (ch. xiv.), to the effect that our climate was not suited to it, it is evident that it had been tried, though without success, some time before the end of the first century A.D.

Notwithstanding this failure, however, it was again brought to England about the year 280 A.D., when it appears that a licence was granted by the Emperor Probus to the provincials of England to plant vineyards; and the Britons are expressly mentioned by Vopiscus among the natives who partook of it.* The very early existence of the Grape Vine in England is also indicated by the name of Winnal, in Hampshire—a name which is derived from the Celtic "gwinllan," a vineyard. That the cultivation of the Vine was not afterwards abandoned is proved by a passage in Bede's *Ecclesiastical History*,† (eighth century), which refers to Vine-growing in England; and by the confirmation of a grant of a vineyard by King Edwith to Glastonbury Abbey in the tenth century.‡ It seems probable, however, that some of the vineyards planted here by the Romans were afterwards neglected during the anarchy and devastation which succeeded their immediate period, since "old Vines" are not infrequently mentioned as landmarks in Anglo-Saxon charters.§ These "old Vines" were probably "survivals" of the Roman vineyards. Vineyards are also mentioned in the Laws of Alfred,|| and are not unfrequently represented in Anglo-Saxon illumi-

* "Gallus omnibus, et Hispanis, ac Britannis huc permittit ut vites haberent vinumque conficerent." *Hist. Auguste Script.*, vi., ed. Casaub. fol. Paris, 1630, p. 240.

† *Monumenta Hist. Britan.*, fol. 1848, p. 102. "Virens etiam in quibus locis germinans."

‡ W. de Gray Birch, *Cartularum Saxonum*, vol. iii., p. 89. This vineyard was situated at Pathenesburgh, in Nera, co. Somerset. It is also mentioned in *Domesday*, vol. i., f. 90 a, col. 1.

§ See Kemble, *Older Diplomatics*, vol. v., 1147, 1177, &c. || *LL. Anglo-Sax.*, Wilks, p. 31, *LL. Aelf.*, 26.

STRAWBERRIES.

Strong Roots, 4s. per 100. Plants in small pots, 16s. per 100; ditto in large pots, 25s. per 100. Descriptive LIST free.
RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

NEW CARNATION, GERMANIA.

This is, without doubt, the finest Yellow Carnation. My stock is true from layers. Post-free, 3s. each.

NEW CARNATION, BLUSHING BRIDE.

This is a very lovely variety, of delicate blush-pink colour. A fine bold flower, and delightfully fragrant. Post-free, 3s. each.

100 Splendid Border CARNATIONS, in fifty choice sorts, 25s. one dozen, 4s. 6d. The true Old Crimson CLOVE, space-scented, 20s. per 100, one dozen, 3s.

Address,—**THOS. BUTCHER,**
THE NURSERIES, SOUTH NORWOOD.
For CHOICE FLOWER SEEDS address—
THE SEED WAREHOUSE, GEORGE STREET, CROYDON.

ANTHONY WATERER

INVITES AN INSPECTION FROM INTENDING
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THE FOLLOWING TREES,

*Having stout straight stems, fine heads, and splendid roots.
All have been transplanted within two years:—*

ACACIA BESSONIANA, 12 to 14 feet; A. SEMPERFLORENS, 12 to 14 feet; ACER DASYCARPUM, 12 to 16 feet; A. DASYCARPUM WIERI LACINIATA, 10 to 14 feet; A. NEGUNDO VARIEGATA, Standards, 8 to 10 feet; A. LEO-POLDII, 12 to 14 feet; A. REITENBACHII, 12 to 14 feet; A. SCHWEDLERII, 12 to 16 feet; A. WORLEYII, Standards, 12 to 14 feet. ASH, Mountain, 10 to 14 feet. BEECH, Common, 10 to 13 feet; Purple, Pyramids and Standards, 10 to 16 feet. BIRCH, Silver, 12 to 16 feet. CHESTNUT, Horse, 14 to 16 feet. Double White, 10 to 16 feet; Scarlet, 12 to 16 feet; Spanish, 12 feet. ELMS, English, 10 to 12 feet; Guernsey, 12 feet. LINES, 12 to 16 and 20 feet; Silver-leaved, 10 to 14 feet. LIQUIDAMBAR, 6 to 10 feet. MAPLE, Norway, 14 to 16 feet. OAK, English, 10 to 14 feet; Scarlet American, 12 to 14 feet; PLANES, 12 to 16 feet. POPLAR BOLLEANA, 10 to 16 feet; P. CANADENSIS NOVA (the true variety), 12 to 16 feet; SYCAMORE, Common, 14 to 16 feet; Purple, 14 to 16 feet. THORNS, Double Scarlet, 8 to 10 feet; White, 8 to 10 feet. WALNUTS, Common, 10 to 12 feet.

Weeping Trees.

BEECH, Weeping, Pyramids and Standards, 8 to 12 feet; Weeping, Purple, Pyramids and Standards, 7 to 12 ft. BIRCH, Young's Weeping, Pyramids and Standards, 8 to 14 ft. ELMS, Weeping, Pyramids and Standards, 7 to 14 feet. LARCH, Weeping, Pyramids, 8 to 10 feet. OAK, Weeping, English, Standards, 10 to 12 feet. POPLAR, Weeping, Pyramids, and Standards, 10 to 12 feet. SOPHORA JAPONICA PENDULA, Standards, 8 to 9 feet.

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BOUQUARDIAS, OXYLAMENS, ERICAS, EPACRIS, SOLANUMS, TREE CARNATIONS, and other
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nated manuscripts. Thus, for instance, there is a vignette in a celebrated illuminated calendar which represents a party of Anglo-Saxon gardeners pruning their Vines with large pruning knives, and planting them in order. This operation, the calendar informs us, took place in February. Another important fact which throws some light upon the early cultivation of the Vine in this country is, that the Anglo-Saxons called the tenth month of the year, not October, but "Wyn month"—the month in which they crushed their Grapes and made their wine.

In the *Domesday Book* thirty-eight vineyards are mentioned. They were distributed over the counties of Berks, Essex, Hampshire, Hertford, Dorset, Middlesex, Norfolk, Suffolk, Wiltshire, and Kent. Some of these vineyards, the book tells us, were in existence in Edward the Confessor's time; others were but newly planted.* Some, we are told, bore Grapes; others did not.† The largest vineyard mentioned in *Domesday* was that situated at Bitesham, in Berkshire.‡ It consisted of twelve arpends. Another, on the property of Alberic de Ver, at Belcamp, in Essex,§ consisted of eleven arpends, though we are told that only one bore. Another, which was situated at Rageneia, in the same county, consisted of six arpends, "yielding 20 modii or barells of wine, if the season was favourable."||

At the time of the *Domesday Survey*, vineyards were situated in the heart of London. One in Holborne belonged to William the Conqueror's chamberlain, who paid "vjs. yearly for the ground whereon his vineyard is situated." It has very generally been thought that at the time of the Norman Conquest only the larger monasteries possessed vineyards. This, however, is not the fact, for several entries in the *Domesday Book* undoubtedly show that several of the laity possessed them. The accounts of Ely Church inform us that Vines were largely grown, and wine manufactured, near Ely, at the time of the Norman Conquest.¶ In fact, the Isle of Ely was so famous for its Vines about this time, that the Normans called it "L'Ile de Vignes."

William, of Malmesbury (twelfth century), speaking of Gloucestershire, says:—"The country is planted thicker with vineyard than any other in England, more plentiful in crops, and more pleasant in flavour. For the wines do not offend the mouth with sharpness, since they do not yield to the French in sweetness."** The same author also speaks of the vineyards at Ely. Another writer of the twelfth century, Henry of Huntingdon, also mentioned that Vines were grown, and that wine was made in England in his time, but he notes that vineyards were "rare."†† In the reigns of Rufus, Henry I., and Stephen, the ground now known as East Smithfield was occupied as a vineyard, and held by the con-

stables of the Tower.* "This land originally belonged," says Stowe (*Survey*, ed. 1589, p. 46, 124), "to the Priory of the Holy Trinity within Aldgate, and they did not recover it till the second year of Stephen, when the same was adjudged and restored to the church."

We learn from the *Saxon Chronicle* ‡ that in 1137 Martin, Abbot of Peterborough, planted an extensive vineyard within the walls of his own town. In the middle of the twelfth century among the appendages to Windsor Castle was a vineyard, and the pay of the vintager and the expenses of gathering the Grapes are among the regular annual charges relating to Windsor on its Pipe Rolls from the commencement of the series in 1155. Neckham, writing at the close of the twelfth century, devotes a whole chapter to the cultivation of the Vine. John de Garlande, writing a few years later, also mentions the Vine, and notes that it was cultivated in rows.‡ Somner tells us that in the year 1285 both the abbey and priory of, and many of the manors belonging to, Canterbury, were plentifully furnished with vineyards.§

From a manuscript in the British Museum we also learn that the monks of Spalding Priory planted a vineyard for their own use about the end of the thirteenth century.|| Among other expenses of Edward I. for 1272 occur the following:—"To Richard Wolward, keeper of the King's house at Westminster, one mark to repair the King's vineyard there." Another entry on the same roll, four years later, runs:—"Pay to R. W., keeper of their house at Westminster, one mark, there to dress our Vines as heretofore in the preceding years he hath been accustomed to do." In 1265 one Vine was bought for the King's garden at Woodstock. In 1294 a lock and key (price 4d.) was bought for the "vinery" at Hampstead,¶ and in 1296 there was a vineyard belonging to the Earl of Lincoln in Holborn, which, judging from the number of men employed in it, must have been a large one.**

The Vine seems also to have been extensively cultivated at Ledbury, near Hereford, by the monks under Bishop Swinfield, and that wine was made there as late as 1289, is proved by the Bishop's household accounts. From these it appears that the vineyard yielded seven pipes (*dolia*) of white wine and nearly one of verjuice.††

At the commencement of the fourteenth century the Vine was to be found in almost every burgher's garden. In 1311 a certain Hugh de Stowe raised two bars under his Vines opposite his tenement in Chero. Lambert tells us that when Edward II. was at Bockinfield in 1316, Bishop Hanson sent thither "a present of his drinks withal, both wine and Grapes of his own growth in his vinery at Haling near Rochester."‡‡ It is just possible that this vineyard was still in existence and produced excellent Grapes at the commencement of the sixteenth century, for we find in October, 1502, the Dowager Queen, Elizabeth of York,§§ receiving presents of Grapes from the Bishop of Rochester. Stowe mentions that in the times of Richard II., Vines were cultivated in great plenty in the Little Park of Windsor, and remarks that there was existing in his time an old manuscript roll in the Gate-house

of Windsor Castle, "in which, among other things is to be seen the yearly account and charges of planting the Vines."* Lamberde also says, that in the records "it moreover appeareth that the tythe hath been payed of wine pressed out of the Grapes that grew in the Little Park there, to the Abbot of Waltham, which was parson both of the Old and New Wyndsor, and that accounth have been made of the charges of planting the Vines that grew in the said park, as also of making the wines, whereof some partes were spent in the household and some sold for the King's profit."† The Grape Vine was also largely cultivated about Cambridge in the fourteenth century, and several interesting items referring to the vineyard occur in the accounts of the various colleges. Willis, in his *Architectural History of Cambridge*, considers that the Vine was generally planted for the sake of the shade it afforded. That this was not always so, however, is proved by many entries on the accounts which refer to the vineyards. The accounts of the Guild of Corpus Christi in 1348 contain a charge for "splentes for the vineyard," and one of the pieces of ground composing the site of the Physic Hostel included a plot of Vines (*parcella des Vynes*) in 1369. In the early fifteenth century vineyards were attached to several of the colleges. At King's Hall in 1418-19 a charge occurs for pruning the vineyard, and a similar charge occurs in 1452. In this instance the Vines were attached to poles which rested on forked sticks, as shown by charges for "crutches" and "rails." ‡

The culture of the Vine was carried on by the laity with equal ardour at the commencement of the fifteenth century, for the poet Lydgate tells us that it was one of his chief amusements when a boy, besides stealing Apples in "other mannes orchards,"

"To plucke Grapes in other manne's Vines."

Minor Poems, p. 255.

In another poem the same poet tells us of the "Vinettes running in the casements," showing that Vines were then, as now, trained over the walls of the houses. After the middle of the fifteenth century, however, Vine culture was neglected, "partly by slothfulness, not liking anything long that is painful; partly by civil discord long continuing, it was left, and so with time lost, as appeareth by a number of places in this realme, that keeps still the name of vineyard; and upon many cliffs and hills are yet to be seen roots and old remains of Vines."§ It is probable, however, that many other causes, besides this of "not liking anything long that is painful," interfered with the culture of the Vine in the middle of the fifteenth and early years of the sixteenth century. A writer in the *Biographia Britannica*—a book which was published in the seventeenth century—affirms that "we have still upon record a treaty of peace between France and England, in which it is stipulated that we should root up our vineyards, and be their customers for all our wine."|| "If such extirpation of the English vineyards was "not owing to this," says another writer, "it might be to the increased intercourse with the Continent and the falling of Gascony into the hands of the English, when wine was imported cheaper and better than we could make it." The suppression of the monasteries in England in the early part of the sixteenth century must also have contributed much towards the loss of our vineyards. In the seventeenth century several attempts to cultivate the Grape Vine on a large scale for making wine were made in England, but all these attempts failed. The cause of this failure was probably carelessness, for Master Barnaby Goodge, a celebrated gardener of the period, was of the opinion, or rather of the "per-

* As at Westminster, "four arpenni of vineyard newly planted (vinea novella)," tome i., f. 175 b.; or as at Ware, "a vineyard very lately planted (vinea nuprime plantate)," tome i., f. 138 b.

† As at Deepdene, in Essex, "two arpenni of vineyard which bear (vinee portantes); and two others, which do not bear (vinee ni portantes)," tome ii., f. 73 b.

‡ Tome i., f. 60 b. In *Domesday* the vineyards are generally measured by the "arpenni"; but in four instances (tome i., f. 69 b., 86 b., 212, ii., f. 71), they are measured by the acre. The arpent equalled about a furlong.

§ Tome ii., f. 77. "xj arpenni vinee j portat."

|| Tome ii., f. 43 b., "vj arpenni vinee reddit xx modios vini si bene procedit." A modius was nearly 2 gallons English measure.

¶ This, and the succeeding statement, is quoted on the authority of Holinshed. see his *Chronicles* (ed. 1587), vol. i., p. 3: confer also Gale, *History of Ely*, vol. ii., ch. ii. An entry, dated 1319, in the register in the archives of Ely church, relates that "7 dolia musti" were made from the vineyards that year.

** *De Gestis Pontif.*, bk. iv.

†† *Monumenta Hist. Britan.*, fol. 1818, p. 693. "Vinee fertilis est, sed raro."

* Holinshed, *Chron.*, p. 111. Various parts of London, by their names; give evident proof of their having been formerly planted with Grape Vines, as Vine Street in Hatton Garden, St. Giles', and Piccadilly; the Vineyard by Houndsditch, and also by Coldbath Fields, and even within the walls of the City, there is a street still called Vine Street.

† Ingram's edition, p. 368.

‡ "Antes et phalanges," the "antes" being the first row.

§ *Antiq. Cant.*, ed. 1640, p. 286.

|| MSS. Cole, vol. xliii., f. 93.

¶ This and the preceding entry is taken from Professor Rogers' *Agricultural Prices*.

** See *Archaeological Journal*, vol. v., p. 239.

†† *Household Accounts of Bishop Swinfield in Chronicles and Memorials*, series, "1289, March 2. In septem dolcis vini albi de vinea de Ledebry de tempore vendimianus proximo viij. li." See also *MSS. Reg. Cant.*, f. 33 b.

‡‡ *Dictionary Angliae Topographica et Historica*, p. 68.

§§ *Household Accounts of Elizabeth of York*, p. 52. A plot of ground near to the city of Rochester is still called the "Vineyard."

* *Annals*, ed. 1681, p. 143.

† In some accounts of Windsor which are still preserved in the Record Office, for the year 1405, is an entry for "600 paxils or poles for proping Vines."

‡ There are several other references to the vineyards of the colleges in Willis and Clark's *Architectural History of Cambridge*, vol. iii., to which the reader is referred.

§ Barnaby Goodge. Holinshed also remarks, "the fault whereof is not our soils, but the negligence of our countrymen."

|| Kippis, *Biogr. Brit.*, vol. iii., p. 2.

suaſion," that "if diligence and good huſbandry had been uſed, we might have had a reaſonable good wine growing in many places of this realm." *Percy Newberry.*

CROCOSMA AUREA VAR. MACULATA, BAKER.

REFERENCE to our illustration of the typical plant at p. 304 will ſerve to mark the difference between it and its finer and handſomely coloured ally, which we here portray (fig. 80), and which is in every reſpect the fineſt form of the variable *Crococoma aurea* that has yet appeared. A glance, too, at the illustration of a bed of it at p. 305 ſhows what a beautiful object it is under favourable ſituations.



FIG. 80.—CROCOSMA AUREA VAR. MACULATA: FLOWERS ORANGE, WITH A PURPLISH-RED SPOT.

After a careful ſearch amongſt numerous ſpecimens from all parts of South and Eaſt Africa, and finding nothing like it, Mr. J. G. Baker named and deſcribed the plant in the *Gardeners' Chronicle*, p. 407, from material ſupplied by its introducer, Mr. James O'Brien, of Harrow-on-the-Hill, who had previously received a Firſt-class Certificate for it at the Royal Horticultural Society. Mr. O'Brien informs us that it was in bloom for over four months, and was ſtill in good condition. In habit it ſeems to be ſtronger than the plain yellow *Crococoma*, and grows to a height of 3–4 feet. Single ſtems cut with their graceful leaves and placed in water for indoor decoration open their buds for weeks in ſucceſſion. The plant is perfectly hardy in ſheltered ſituations, and is a fine ſubject for the cold frame, greenhouse, or conſervatory. There is one peculiarity about *C. aurea* var. *maculata* which ſhould be noted, viz., the ſtalked and incurved character of the perianth ſegments up to the blotches, as it ſeems to ſhow that it might poſſibly be a wild hybrid.

NEW OR NOTEWORTHY PLANTS.

LÆLIA PERRINII (Lindl.) VAR. ALBA (O'Br.), *supra*, p. 446.

How joyful were we about *Lælia Perrinii nivea*, and how we delighted in *Lælia Perrinii irrorata*! This plant does not produce ſuch an *embarras de richesses* of flowers as does *Lælia anceps*. And now Mr. R. H. Measures, of the Woodlands, Streatham, S.W., has moſt kindly ſent two inflorescences, one two, one three-flowered. Theſe flowers are ſnow-white without any purple or yellow marks, and they remain ſnow-white. From Mr. R. H. Measures I quote what follows:—

the goitrous ſwellings of the ovaries are unuſually prominent. *H. G. Rehb. f.*

DECASCHISTIA FICIFOLIA, Mast., *sp. nov.**

This handſome Hibiscus-like ſhrub was diſcovered in Burmah by Mr. J. Bonham Carter. Seeds were brought home by that gentleman, and the plant has recently flowered in his garden. A flower was obligingly forwarded to us for determination, when a reference to our monograph of Indian Malvaceæ, published in Sir Joſeph Hooker's *Flora of British India*, and to the Herbarium at Kew, ſhewed that we had to do with a hitherto undeſcribed ſpecies. It is well adapted for ſtove culture, being handſome alike in foliage and in flower. The ſhrub is more or leſs hoary, the leaves are light green above, hoary beneath, wedge-shaped at the baſe, and dividing above the middle into three oblong remotely toothed lobes. The flower is nearly 4 inches acroſs, and probably will become larger under cultivation. In colour it is coppery-red merging into yellow, and with a roſy ſpot at the baſe. The floral characters are thoſe of *Decaschistia*, a genus which differs from *Hibiscus* mainly in having ten ſtyles and a ten-celled ovary, with one ovule in each cell. Moſt probably an imperfect ſpecimen collected at Rangoon by the late Dr. Maingay, and preſerved in the Kew Herbarium, belongs to the ſame ſpecies, but this cannot at preſent be aſſerted with certainty. *M. T. M.*

The ſeeds of the plant in queſtion were gathered on Auguſt 6, 1887, on a plateau compoſed of a red clayey ſoil, about 350 feet above the Irrawaddy, and about 8 miles from Thabaitkine, on the road from that place to the Ruby Mines. The plateau was ſparſely timbered with poor Teak trees, and the ſcarcity of undergrowth was very ſuggeſtive of great poverty or very ſmall depth of ſoil; indeed, beſides the plant under diſcuſſion, there ſeemed ſcarcely a dozen other kinds, ſcattered at wide intervals, and with not even graſs or weeds between them. The buſhes from which I gathered the ſeeds were from 2–4 feet high, and ſeemed to have nearly done flowering, as I ſaw only very few bloſſoms; theſe, however, were much larger and much brighter in colour (though I ſhould ſay much the ſame among themſelves) than the flower I ſent you. *J. Bonham Carter.*

VRIESEA WITTMACKIANA, n. *hyb.* (= *V. BARILLETHII* × *MORRENIANA*).

This nice new *Vriesea* is a fine and intereſting acquisition. It was raiſed by Mr. Kittel, Curator of the gardens of the Count Magnis, at Eckersdorf, near Glatz, Silesia. The *Gartenflora* gives a coloured plate (1283) of the new hybrid, as well as of the parents. An idea of the plant may be obtained if the inflorescence of *Vriesea Barilletii* be taken, giving to it the colour of *V. Morreniana* ×. Mr. Kittel raiſed two forms, which differ more or leſs in the cloſe arrangement of the flowers. This plant is the more intereſting, as *V. Morreniana* is itſelf a hybrid, viz., *V. psittacina* × *carinata*. *V. Morreniana* × has the delightfully bright colour of the bracts, and ſo has *V. Wittmackiana* ×. The latter hybrid has alſo on the upper half of the bracts the numerous red ſpots of the female parent. *Dr. Dammer.*

LEEDS HORTICULTURAL SOCIETY.—The Chrysanthemum ſhow of this Society, to be held on November 21 and 22, in the Town Hall, Leeds, will, it is ſaid, be worthy of the diſtrict, judging by the hearty ſupport it has met with from exhibitors.

"A plant was obtained by one of Mr. F. Sander's collectors, and ſaid to be abſolutely white, but neither Mr. Sander nor myſelf believed that. I have grown it now for two ſeaſons, and it flowers from eight leading growths, forming a ſight worth taking a long journey to enjoy. The bulbs in ſhape are identical with thoſe of *Lælia Perrinii*, but are pale green in colour. The leaf is much broader and larger than in *Lælia Perrinii*. It is, in fact, identical with a well grown robust leaf of *Lælia purpurata*."

To this I may add, that the lip is diſtinct from that ſhown in any ſketch or portrait from that of any wild-grown or garden ſpecimens I have heard of in the genus *Lælia Perrinii*. Thoſe altogether ſhow remarkably well diſtinct ſide laciniae—Mr. R. H. Measures' plant, on the contrary, has a three-lobed lip, or even one which is rather confluent, hence nearly rhombic. I have alſo the impression that

* *Decaschistia ficifolia*, Mast., *sp. nov.*—Fruticosa, canotomentosa; petiolis $\frac{1}{2}$ poll. long.; stipulis aequilongis lineari-subulatis stellato-pilosis deciduis; foliis 5 × 4 poll. late obovatis basi cuneatis 3-nerviis (nervis parum divergentibus), antice fere ad medium 3-lobis, lobis subaequalibus subparallelis oblongis obtusis obscure dentatis basin versus angustatis, a sese sinibus ellipticis separatis; bracteolis 10 lineari-subulatis, sepalis dimidio brevioribus; calyce campanulato $\frac{1}{2}$ poll. long., sepalis deltoido-lanceolatis prominenter 3-nerviis; corolla diam. 4 poll. basi breviter tubulata superne patente; petalis imbricatis oblongis rubro-flavidis basi purpureis. Cact. ut in congeneribus. In Burmah detecta dom. J. Bonham Carter, inde semina reportavit plantamque nunc primo florentem horto suo coluit. *M. T. M.*

NURSERY NOTES.

THE FRUIT NURSERIES OF MESSRS.
J. VEITCH AND SONS.

LANGLEY, SLOUGH.—Here in a position peculiarly favourable for successful fruit-tree cultivation the Chelsea firm have a nursery that is well worthy of a visit from those who have an interest in pomology. The soil is loamy, similar to that which is used for brick-making; it lies over gravel, and it is evident that the trees find in it the constituents of vigorous growth. Large quantities of fruit trees are grown, very noticeable being the quarters devoted to horizontal and fan-trained Pears, comprising all the best varieties both on Pear and Quince stocks.

In a season such as the present when, speaking generally, Apples and Pears are somewhat scarce, and not of the best quality, we have thought it well (as it may prove instructive) to give lists of those which grow and also fruit so well here, pointing out by so doing such varieties as seem best adapted for general cultivation. It may be mentioned that all the fruit has been grown without any special care or attention.

Pears.—These were noted in all sizes from trees having two to five and seven tiers of branches, amongst which the following varieties were noteworthy by reason of the crops of fine fruit they were carrying, viz.:—Summer Beurré d'Aremburg, Winter Nelis, one of the best late Pears, Passe Colmar, Olivier de Serres, Jargonelle, Glou morceau, Duchesse d'Angoulême, General Tottleben, Souvenir du Congrès, Beurré Giffard, Beurré de Jonghe, &c. Large quarters are devoted to pyramids in all sizes, and in excellent condition, both on Quince and Pear, many being good crops of fruit, the list including the names of our best Pears, and some others which, if amateur growers would exercise a wiser discretion, would very soon be consigned to the rubbish-heap.

Apples.—In this section are to be seen fine quarters of horizontal-trained trees on both Crab and Paradise stocks, many bearing, for such small trees, enormous crops. The varieties most notable in the collection were those which have repeatedly been brought under notice in the accounts of the late Conference at Chiswick, and which were to be found in certain numbers in almost every collection of moderate size. We noted several large quarters of pyramid Apples on Paradise and on Crab stocks—good, stout, well-shaped trees, and in many cases heavily cropped with fine fruit. Amongst others, specially noticeable may be mentioned the following sorts (trees only three years old were carrying good crops):—Domino, a good early Apple, considered to be an improvement on Keswick Codlin; Baumann's Red Reinette, very large and highly coloured, a good keeper; Cox's Pomona, Niton House, larger than the famous Stirling Castle, and keeping good till March, therefore valuable; Prince Albert, very prolific; Warner's King, indeed a grand Apple; Stone's or Loddington Seedling, very fine; Ringer, large and fragrant; Pott's Seedling, excellent, the coming Apple; Frogmore Prolific, very fine; The Queen, large and handsome; and Schoolmaster, &c.

Several quarters of Apples on Crab are being grown as standards—each quarter holding about 6000 trees—amongst others, the Sandringham (introduced by the firm) is very conspicuous from its clear, straight, clean stem, and compact habit. It is considered here to be one of the coming Apples for orchard planting—the fruit, too, being of good size and quality; it is of handsome appearance, is a good keeper, and may, therefore, fairly lay claim to being a valuable Apple. Tyler's Kernel, Mrs. Barron, Barnack Beauty, King Harry, Gascoigne's Seedling, and September Beauty, are varieties of recent introduction which promise to be of great value to growers for market as well as private gardeners. King of Tompkins' County is likely to be very valuable, especially in warm districts, being large and handsome, and late in the season, and of fair quality as a

dessert Apple. Bismarck (another introduction of the firm) is an extraordinary bearer, last year's maidens being in many cases loaded with fine fruit. Washington is a very beautiful American Apple, but wants apparently a warmer climate.

A great feature at Langley is the trial border, which runs the whole length of the portion devoted to fruit trees, in which are planted, with the view of testing, the best old as well as new, about 350 varieties of Apples. Similar borders are planted with Plums (containing all the best sorts), the crops of which have been very large this season, as visitors to the Royal Horticultural Society's meetings have witnessed. Archduke promises to be an acquisition, fruiting freely on either standards, pyramids, or cordons, and hanging very late. Pears are being tested in the same way, also Cherries; the whole length of borders thus planted is upwards of 1000 yards.

Regarding stocks for Apple trees in use here, it may prove of interest to note that the English Paradise is that principally used. The French Paradise forms very prolific little trees, but they are subject to canker, and in dry hot seasons the fruit is apt to be covered with spots which penetrate to the centre, rendering the fruit quite useless.

Amongst miscellaneous fruits all the best Gooseberries and Currants are grown. Of Raspberries there is a good collection, including the fine new variety named Superlative; this is very distinct in its strong robust growth.

THE FULHAM NURSERIES.

Pears are here found in large quantities, fan and horizontal trained, both on Pear and Quince stocks. Apples are here also grown in quantity, very noticeable being the standard trees of extra size for orchard planting, pyramids on Crab stocks, and a fine piece of young pyramids on the Paradise of the leading varieties; dessert and Morello Cherries in large fruiting trees, standard and dwarf-trained. Referring to the trained Cherries here, it is computed that if they were walled they would cover a line of wall extending from Fulham to Chiswick. Standard and half-standard maiden and one-year trained Peaches are here in large numbers; while round the walls, fences, and borders are fine fruiting trees of the latter in considerable numbers; varying from 1½ to 5½ feet stems, with heads from 5 to 10 feet wide and 4 to 6 feet in height of stem; and the trained Peaches and Nectarines are exceedingly fine healthy stock. Mulberries, standard and trained for walls, were likewise noticed.

The larger nursery at Fulham—for there are two—is called Southfields, to distinguish it from the one above noticed, which once formed part of the land in occupation of the late firm of Messrs. Osborn & Sons. Here, in the presence of gas and other factories, and lying in the Thames Valley close to the manufacturing districts of Wandsworth and Battersea, it would be thought that the surroundings are not such as are suitable for successful fruit culture, and yet the stock is in a wonderfully thriving condition. The greater portion of the soil is sand and humus, the remainder loam over gravel.

Horizontal trained Apples both on Crab and Paradise have borne large fruit. Trees on latter stock are very suitable for small gardens, and for soils where trees on Crab grow too vigorously, and where large and highly coloured varieties are selected such trees are very ornamental. Pyramid Apples, principally on Paradise, are here in quantity, most of which have borne well. Pears trained on Quince (quite young trees) have borne well. Pyramids on both stocks are here in quantity in all sizes. About 4 acres are used for the cultivation of Peaches and Nectarines, the soil being favourable for the production of bearing wood and fibrous roots. Large numbers of extra sized trees with fifty and in one piece up to a hundred shoots on each tree, some of which are 12 and 13 feet across, were remarked. Standard trained Peaches and Nectarines are also a grand stock from one-year trained to trees that will carry next season good crops, many of the trees

being 6 feet and 8 feet across. Plums, dwarf trained in all sizes, from young trees with nine shoots to trees 7 feet and 8 feet across, the larger being transplanted, are literally bristling with flower-buds, and many of the trees have borne finely this season. Pyramid Plums are also here in quantity—large trees and standards of fruiting sizes. Cherries on the Mahaleb stock succeed remarkably well in the light soil here, the Morellos and a good collection of Dukes being grown on it as cordons, pyramids, and trained trees. Many of the latter are extra sized, being from 8 to 10 feet across, and have borne well in open quarters. Apricots, standard and dwarf trained, are grown in quantity, and include some large trees. Amongst cordons, Apples, Pears, Plums, and Cherries have borne well, even trees transplanted this spring bearing good fruit. The candelabra or palmette form of trained Pears and Plums is very ornamental—there are many in this nursery. Gooseberries and Currants grown as cordons have been wonderfully prolific. Pyramid Gooseberries of some sorts were very fine. A house of Peach trees in pots struck us as very remarkable from their healthy appearance and vigorous growth. Figs in pots form an especial feature, four houses being devoted to their culture. Viollette Sepor, a new variety introduced by the firm, is a kind which by reason of its many good qualities will undoubtedly make way when more widely known.

It now only remains to be stated that the nurseries which we have of necessity so very hastily and imperfectly described are under the supervision of Mr. Morle—Messrs. Veitch's fruit foreman.

THE AIGBURTH NURSERIES OF MESSRS. R. P. KER
& SON, OF LIVERPOOL.

These enjoy a high reputation locally and generally. Starting from Basnett Street, in which the office and seed-houses are situated, a pleasant drive by Sefton Park, and along a shady road towards West Derby, brings the visitor to Aigburth, where the nursery grounds, comprising an extent of 14 acres, are situated. They are compact, convenient, and well kept. The visitor sees there the best things intelligently cultivated by the manager, Mr. Ranger and presented to view in the best condition.

On entering from the West Derby Road, the visitor sees the office on the right, and on the left a pleasant piece of flower-garden; and then, following a path lined on either side with choice evergreen and deciduous shrubs, the houses are reached, of which there are several. The contents show that a general stock of stove and greenhouse plants is maintained, including many flowering subjects suitable for cutting from. *Clethra arborea* is largely grown; it is starved in small pots, and then flowers abundantly. *Dracena cannaefolia* is noticeable; it is a good hardy type of the *D. rubra* section, and stands well; and of *D. lineata* there are some very fine specimens. There are hundreds of small decorative plants and Ferns, and *Adiantum cuneatum* is largely grown. Palms are much grown, and plants of all sizes, from exhibition specimens down to those representing model table plants, were found. *Kentia* is the species mainly grown, these plants being in so much request for decorative purpose.

From the Palm-house radiate eight or nine others, forming a kind of glazed star if looked at from above. Here are two houses of *Cyclamen persicum*, which are as fine as any found in the neighbourhood of London. Messrs. Ker & Sons have been selecting for years, their aim being to get the large flowers of the giganteum type associated with the dwarf compact habit of the *C. persicum* type. One could but look with amazement on plants of such size, and so finely developed, by the first week in August. The plants were in 5-inch, 6-inch, and 7-inch pots, and it was said the flowers are of the highest quality—equal, at least, to anything grown in the neighbourhood of London.

Greenhouse *Rhododendrons* form another leading feature, and are much in demand. For decorative purposes the best are *Duchess of Connaught*, *Duchess of Teck* (which has pale buff flowers), and *Princess*

Royal, of a charming shade of pink. It may be said of some of them that they are almost perpetual flowerers. Next came a large batch of winter-flowering Begonias, the best being M. Lemoine's new varieties of the semperflorens section, such as *elegans*, *gigantea*, *carminea*, and *rosea*, which are the very best for winter work. Double and single varieties are also grown, and they increase in popularity year after year. *Cyperus distans* is noticeable as a fine decorative subject; it is of dense growth, and valuable for furnishing. *Pourettia* (*Puya*) *mexicana* is valuable as a house plant; it is of slow growth, and stands well. Here is the best form of *Ficus elastica* albo-variegata I have yet seen, each leaf having a distinct well-defined bordering of white on either side, young and old plants alike being well marked. It is in great demand.

In the Lapageria-house is growing one of the original plants sent out by Messrs. Veitch & Sons to compete for the Davis Medal, and it is a very fine variety. It occupies the middle of the house, at each end being a strong plant of *L. rosea* superba. A large number of layers of the white variety had been laid down.

In the stove-houses could be seen *Eucharis candida* in flower, a quantity of *Cocos Weddelliana*, and other choice Palms requiring heat. *Coccoloba pubescens* is noticeable as a large-leaved stove-plant with bold foliage—an old West Indian plant not often met with. *Dracenas lineata* and *Drousettii* are worthy of mention as very elegant forms among the collection grown here; *Selaginella Emiliana* is a remarkably pretty form; and *Adiantum cuneatum fragrantissimum*, a desirable scented form. *Amaryllis* of the best pedigree are a good feature also; there is a numerous collection, and among them very fine seedlings of Messrs. Ker's own raising. *Bouvardias* are also largely grown, and especially for cutting from. President Garfield and Alfred Neuner are the best doubles, and among the single varieties a recent introduction, President Cleveland, is noticeable for its fine colour and excellent habit of growth. It is only possible in a brief sketch to dwell upon the leading features in such a comprehensive collection of stove and greenhouse plants as is found in this nursery.

The most remarkable plants are the Crotons. They are growing in a span-roofed house 12 feet in width, which is glazed with 20-inch panes of glass, the bars being stronger than is usual to bear the weight, and the glass goes down to the side stages. Light is therefore admitted on all sides as well as above, and there is no stinting of it. Every species and variety appears to grow freely and colour beautifully. Thorough cleanliness appears to be a leading condition to excellence. The principle worked upon is that prevention is better than cure, and no plant is allowed to go into the house without subjecting it to a close inspection; all new varieties brought in are placed in quarantine before being allowed to join the others. Shade is given on the sunny side by means of a blind through June, July, and August, and in bright weather they are syringed about once a day.

The collection comprises over fifty sorts. Two new varieties were particularly noticeable: one is Aigburth Gem, a most elegant narrow-leaved variety; the old leaves dark crimson and Aloe-green, the younger ones green and fiery gold—a charming table plant; the other Aigburthensis, like the preceding, a free growing branching variety, with an abundance of elegant narrow leaves of a bright primrose-yellow, narrowly margined with green: also an exquisite table plant. It is impossible to do justice to this department of the nursery in a sketch of this character; but out of the collection the following can be selected as fine exhibition varieties, displaying great diversity of character:—Aigburthensis, Neumanii, Queen Victoria, a grand show Croton; Hawkeri, Bergmannii, Warreni, interruptus aureus, Ruberrimus, Mortefontaineensis, Baron Frederick de Selliére, Baroness Rothschild, and Evansianus. I hope to refer to this collection

of Crotons again, dealing with some particulars of an interesting character.

Vines in pots are extensively cultivated, and occupy a large specimen house with hotwater-pipes underneath the stages: the main body from eyes, and a very fine lot of plants indeed. There may be differences of opinion as to which are best for planting and forcing, cut-backs, or young plants from eyes; judging from the appearance of the canes the latter appear the most promising. The Vines are not put outside, but finished off in heat. The canes are carried upright into the roof of the house, fastened to wires running the length of it. How such fine plants were developed from eyes in so short a time seems marvellous; and they certainly display high cultivation. All the leading varieties are grown.

Outdoors Department.—In the open nursery there is a large collection of trees and shrubs. Some very fine bushes of *Olearia Hastii* in full bloom were especially noticeable. It is a good sea-side plant, perfectly hardy, and flowering freely; quite tiny plants in cutting beds were seen in bloom. *Cornus mas* variegata stands better at Aigburth than does *Acer Negundo* variegata, and is being much used in its place in the Liverpool district for dwarf effects. *Veronica Traversi* was blooming freely, and is found to do well under the shade of trees—a fact worthy of being noted. A large specimen of *Genista atrovirens*, quite a standard tree, with the remains of its summer service of golden flowers, is worthy of mention for its summer floral service. The white-flowered *Rhododendron blandum* is largely grown because so useful in many ways, and especially as a forcer. Such varieties of *Rhododendrons* as do not readily unite with the stock when grafted are raised from layers. *Rhododendron Cynthia*, an excellent doer, bearing large trusses of crimson flowers, and having a capital habit of growth, should be noted as a plant well adapted to Lancashire. Some sorts do not set their buds well so far north. *Brayanum* and *Madame Wagner* represent varieties that always set well for bloom. *R. caucasicum* and *Cunningham's* white, though frequently confounded, are distinct. A very fine and useful variety for the district is *The Queen*. *Helen Waterer* is remarkable for its noble foliage. *R. caucasicum pictum* and *compactum* are perfectly hardy, and stand well. In selecting their collection of hardy *Rhododendrons* the Messrs. Ker have paid strict attention to sorts suitable for the county. *Skimmia oblata* makes a capital town plant for Liverpool. It is perfectly hardy, and is not affected by dust and smoke.

Of forest trees there is a large and varied collection: in a group of standard Lilacs and of herbaceous plants there is a numerous selection also. Fruit trees are to be found here also, and of Apples and Pears such varieties as are suited to the locality.

In walking round the nursery, the visitor cannot fail to notice in the shrubbery borders not a few novelties, as constant additions of new subjects are made. *Cratægus Lelandi* is noticeable as a great acquisition, as it bears clusters of rich Orange berries even on young plants. Here is *Prunus Pissardi*, its claret-purple foliage gleaming amidst green surroundings at all points. *Hodgens' Holly* is largely grown; it is a very fine plant for Lancashire—this and the Old Silver are the best for the district: the Golden and Silver Queens are found too tender. *Cytisus Alkekengi* gives racemes of yellow flowers very early in the year. *Fraxinus lenticifolia* pendula has very elegant foliage, and makes a capital weeping tree. *Rhamnus alaternus decorus* makes a good town shrub—it is Bay-leaved, and they are of a thick leathery substance. *Genista præcox* makes an excellent standard worked on the common Laburnum, and is a charming spring-blooming plant. *Ligustrum sinense*, *L. glabrum*, and *L. latifolium novum* are all good free-blooming Privets; *L. ovalifolium* stands best. Some make a late growth, and do not mature their foliage, and the frost cuts it back.

Standard and pyramidal Bays in tubs are a fine feature; they are numerous, and well cultivated. The Willow-leaved pendulous Pear, with its silvery

foliage, is a very attractive tree. *Limonia trifoliata*, with its long spines—and, indeed, a pretty representative of the Orange family—is found to be hardy in this locality. What a charming tree the Fern-leaved *Cratægus oxyacantha* makes! So does the transparent Crab when flowering.

At Basnett Street, Liverpool, are the spacious shop and offices of the firm. A large seed business is done, and a considerable bulb trade; and that in agricultural seeds is rapidly increasing. *Visitor*.

ORCHID NOTES AND GLEANINGS.

PHALÆNOPSIS ANTENNIFERA, Rehb. f.

WHEN I gave my enumeration of species of *Phalænopsis* in the *Gardeners' Chronicle* (n. s., vol. xxvi., pp. 168, 212, and 276), I had not seen this decidedly pretty species; but at the present time I am more fortunate, as a good plant is now flowering in the Kew collection, and side by side with it is a plant of *P. Esmeralda*, also in flower (so that species has not been lost to cultivation, as suggested in these columns some time ago, though I cannot lay my hands on the reference at the present moment). Consequently I have been able to compare the two together, first satisfying myself that they are correctly named, by comparing them with the original original descriptions of the species. The result is that I believe *P. antennifera* is only a colour variety of the earlier described *P. Esmeralda*. The only difference in shape I am able to detect is, that in the former the stigma is a little broader than in the last-named species, and this is probably only such a minute difference as would be detected in different individuals of the same species. As to colour the two present the following differences:—*P. antennifera* has the sepals and petals light rosy-purple, the front lobe of the lip and the column deep amethyst-purple, while the side lobes of the lip are sepia-brown, inclining a little towards orange. *P. Esmeralda* can best be described by saying that every part is several shades lighter, a little inclining towards yellowish or whitish in places. The remarkable linear appendages on the stalk of the lip are precisely alike in both, white at the base, the club-shaped apex being of a deep orange. Our stock of knowledge as to the variability of many Orchids is gradually increasing, and I suspect that many variations of *P. Esmeralda* would be found in a large series of specimens. *R. A. R.*

ARACHNANTHE CLARKEI.

A good plant of this handsome species is now flowering in the Kew collection. It was described in these columns in 1886 (n. s., vol. xxvi., p. 552) as *Esmeralda Clarkei*, *Rehb. f.* It is so closely allied to *Arachnanthe Cathcartii*, that the two species must be placed together, and as *Esmeralda* is referred to *Arachnanthe* in the *Genera Plantarum*, it is clear that this species must also be placed there by those who adopt this system. Its habit very closely resembles that of the species just named, while the peduncle bears two or three very handsome flowers of over 3 inches in diameter. The sepals are linear-oblong, cuneate at the base, the lateral ones being somewhat curved in a falcate manner. The petals are a little broader, and likewise somewhat curved. In colour both these sets of organs are of a bright and warm sepia-brown, with transverse bars of light yellow, giving them a brilliant effect. The pendulous lip is articulated to the foot of the column in a very delicate manner, and a slight touch or breath of wind sets it oscillating backwards and forwards, though it moves in a small part of a circle unless violently shaken. The effect of this is very curious, and obviously has some connection with the fertilisation of the flower. The front lobe of the lip is large, broadly roundish, with a small lobule at its apex, the colour warm sepia-brown, with seven to nine radiating white raised keels, while the side-lobes are much smaller, roundish, and white with radiating broad lines. The

gland is highly curious, being exactly hippocrepiform in shape, in which respect it differs somewhat from the other species of the genus. It is a Himalayan plant, and for its discovery we are indebted to Mr. C. B. Clarke, F.R.S., the well-known Indian botanist. R. A. Rolfe.

ORCHIDS AT THE FIRS, SIDENHAM.

The collection of C. Dorman, Esq., is a very select one, and contains a number of very scarce species, but the middle of October is not the time to see a great number in flower. Of *Cattleyas* in flower I observed *Bowringiana*. The past season has seen large importations of this plant, and it may be obtained at a cheap rate. It is near to, and requires the same treatment as, C. Skinneri, but its growth is rather more vigorous. At the base of the stems there is a peculiar swelling, from which a number of roots proceed.

Cattleya luteola was in flower; it is a distinct species, and is one of the smallest growing of *Cattleyas*, grown under the name of C. Holfordii. It was in flower about the middle of August, and still in good condition when I saw it. Good forms of *Lælia elegans* and *L. Perrinii* were in flower. The latter species requires a warm *Cattleya*-house temperature, and when well grown is a handsome plant; and always flowers in the autumn months. The handsome *Comparettia macroplectron* was in flower in the *Cattleya*-house, and is also a species that may be depended upon to flower in October; it should be grown in a basket rather than on a block, the pendulous spikes of bright rosy-tinted flowers making a pleasing feature. In another house *Lælia pumila* var. *præstans* was in flower, and also *Cattleya eldorado splendens*, a handsome form of the species with rose-pink sepals and petals, and a handsome orange blotch on the lip.

In the warmest house some handsome *Cypripediums* were noteworthy; *C. Sanderianum* is quite a wonderful plant, and even more quaint in appearance than *C. caudatum*; the yellow dorsal sepal is marked with distinct purplish-brown lines; the lateral sepals have tail-like appendages, 26 inches in length; they are richly marked at the top, and when the sun shines on the flower the effect is very beautiful. *C. Warneri* was very pretty; it is a neat growing and very distinct form of *barbatum*; the dorsal sepal is rosy-purple at the base, the top part is white, lightly striped reënish. *C. purpuratum* is very pretty, and much like *C. barbatum*; it also blooms in November. There is a handsome specimen of *C. leucorrhodum* showing flower—still a rare plant, and one of the most beautiful of hybrid forms. *Vanda Sanderiana* had six handsome blooms on one spike, and there was also in this house a nice healthy lot of *Anæctochili*. There were not many species—in fact, a good collection of these beautiful foliaged plants is not now to be seen anywhere. *A. Lowii*, now classed under *Dossinia*, and grown as *D. marmorata*, had large, healthy well-marked foliage. There were two varieties of it. *A. petola*, a pretty little plant, is now *Macodes petola*; *A. Dawsonianus* also classed with *Goodyera*—this species is very free in growth. They all succeed well as grown here in a glass frame where they are by themselves, and if the leaves are kept free from insect pests, and the plants are potted on as they require it, the leaves speedily increase in numbers.

The cool-house contained a nice lot of flowering plants for this season of the year, amongst them the pretty little *Oncidium Phalaenopsis*; it has white flowers prettily spotted reddish-violet. *Odontoglossum Erstedii majus* is a very small growing plants flowering freely, the pure white flowers, with yellow blotch on the lip, are sweetly scented and freely produced. *O. Dormanianum*, whitish and densely spotted brown; is very distinct and pretty. There was also in flower a pure white form of *O. crispum*, flowers of good form and exquisite purity. *Masdevallia Rozlii* had not yet passed out of bloom but was producing a few of its quaint blossoms. *Lælia autumnalis* was nicely in flower, beautiful to look at but offensive to smell, J. Douglas.

ORCHIDS AT WOOLTON WOOD, LIVERPOOL.

The fact that the collection belonging to Holbrook Gaskell, Esq., is rapidly progressing into something like its former excellence, and that under the undoubted skill of Mr. Todd, who is not only a clever Orchid grower but equally good at any other branch of gardening, is likely to become better than even in its palmiest days, cannot fail to interest all concerned in Orchid growing. Generally speaking Orchids need not decline under cultivation, although unfortunately they are often allowed to do so, but that they are amenable to good culture even when in poor condition has been proven by Mr. Todd on many a valuable specimen. The Woolton Wood collection contains many rare species and varieties, and more especially among the showier genera; the houses are well adapted for Orchid culture, and under proper management they should be bright with flowers more or less all the year round. At present the plants are quite fulfilling their duties, and some noble examples are in bloom. In the centre of a group in one of the large span-houses a splendid example of our old friend, *Cattleya Lodigesi* has two dozen of fine flowers open; with it are some good masses of *Lælia Perrinii*, a number of the best varieties of *Cypripedium insigne* and *C. Sedeni*, a large plant of *C. vexillarium*, *C. javanicum*, richly flowered pans of *Pleione*, *Cattleya aurea*, *Miltonia candida grandiflora*, *Oncidium prætextum*, some *Ionopsis*, *Cirrhopetalum ornatissimum*, with other pretty things in flower, and the handsome *Lælia superbiens Quelsneriana* in spike.

Passing to the next range we find in flower a splendid form of the rare *Dendrobium Phalaenopsis*, *Cypripedium Dayanum*, *C. Dominianum*, *C. cananthum superbum*, *C. caudatum*, which bore flowers with petals 30 inches long; and the charming *Odontoglossum Londeboroughianum*, with its golden flowers, which many fail to get it to produce, but which Mr. Todd succeeds with by keeping the plants dry after maturing the growth.

In the next division *Cypripedium Spicerianum* was fine, a good batch of *Odontoglossum Roetzlii* thriving, and some interesting *Anæctochili*, *Bertolonias*, *Sonerilas*, &c., appeared.

An unshaded span-house has been used all summer for the varieties of *Lælia anceps* and other Mexican *Lælias*, which are now sending up a large quantity of flower-spikes, and with them have been kept some large specimens of *Cœlogyne cristata*, which are very healthy and vigorous, notwithstanding the fact that they are supposed not to like sunlight. In the same house is a *Lælia alba* with over fifty spikes, and some rare white *L. anceps*. *Sarracénias* occupy part of another division with good specimens in flower of *Oncidium tigrinum* and *O. unguiculatum*, and a robust lot of the fine white *Dendrobium Jamesianum*.

In another house among a profusion of healthy specimens in flower are some *Masdevallia chimæra* and *M. bella*; the snow-white and fragrant *Maxillaria venusta* in large specimens; *Mesospindium vulcanicum*, the pretty pink *Odontoglossum Cervantesi morada*, and some showy *O. grande*. The cool houses never looked better than they do now, the *Odontoglossums* are very vigorous and sound, not many of the white species are open; but of *O. crispum*, *O. Andersonianum*, &c., many are in bud; the same applies to the well grown *Masdevallias* in their house, only a stray bloom or two appearing on the bright coloured species, while that charming and rare species, *M. Gaskelliana*, which is almost perpetual flowering, bears but one. In shape it is something like *M. nycteria*, but of a cream colour prettily mottled with rosy-red, the long tails being red. It is a distinct and very pretty species, its flowers appearing all the more attractive by contrast with its narrow bright green leaves. For the rest of the garden under glass it may be said that the *Calanthes* are grown to perfection, so also the large and grandly flowered lot of *Eucharis amazonica* in the stores. The *Phalaenopsis* are improving but are still a "far cry" off their glorious condition of a few years ago before their house was altered for improvement. *Vanda Sanderiana*, too, is in bloom.

The rockery-house, as re-arranged, is one of the greatest successes which this garden has achieved. The rockery, built under Mr. Gaskell's own supervision, was always a fine one, but it was spoilt by planting miscellaneous plants. All this has been done away with, the rockery rearranged, and, with the exception of a few grand Tree Ferns, planted as a cool filmy-fernery, some grand *Todeas*, rare *Hymenophyllums*, *Trichomanes*, and such things, giving the house a most beautiful appearance, and returning a good reward for the trouble and expense of the work of renovation. Woolton Wood is a fine garden, and its owner is as great an enthusiast as ever. J. O'B.

RODRIGUEZIA SECUNDA.

We find this plant to thrive best in the *Cattleya*-house in a small hanging basket, or suspended on a block of wood; but in whatever way it may be grown it should have very little soil about its roots. The drainage must be maintained in thoroughly efficient order, for although an atmosphere well charged with moisture is very conducive to its well-being, the roots prefer absorption from the air to having a quantity of wet sour material constantly about them. It requires a considerable amount of moisture during the growing season, and at no time in the year should it suffer from drought, as its diminutive bulbs cannot support it in health for any length of time without water; inattention to these small matters often causes the cultivator much loss or disappointment. This species does not like to be disturbed, so that if the plant is thriving in any particular position, allow it to remain, for frequently it is found that one part of the house is more suitable than another for different plants. It will not require re-basketing often, but when this is necessary the new material should be placed about it just after new growths appear. *The Orchid Album*, October.

THE DOUGLAS FIR IN SCOTLAND.

(Continued from page 532.)

ALTHOUGH the Taymount plantation gives some valuable information respecting the early development of Douglas Fir compared with that of Scotch Pine, it leaves us as yet completely in the dark as to the further progress of production with advancing age. We have detailed and accurate information of the rate of increment of various European Conifers, such as Scotch Pine, Spruce and Silver Fir, but our oldest pure plantation of Douglas Fir consists of trees now only thirty-two years old. As regards the production per acre in its native home nothing reliable is available.

Hough, in his *Elements of Forestry*, (1882), tells us that the Douglas Fir reaches in Oregon to the enormous size of 200—300 feet in height, and from 15—20 feet in diameter; he adds, however, that the tree is more commonly about 150 feet high and from 4—8 feet in diameter. In America the trees are said to stand near each other, but this they certainly do not in the Scotch plantations; on the contrary, here an acre can, owing to the spreading nature of the branches, accommodate only a small number of trees compared with other species. On the whole, the matter requires considerable further investigation. This could best be done by a competent forester proceeding to North America and making suitable measurements on the spot. Such a step was actually taken, in 1885, by Dr. H. Mayr, a Bavarian forester and botanist. He visited the localities in which the Douglas Fir thrives best, and he has promised to publish the information which he has gathered. So far, however, he has only favoured us with a few notes published in forest journals, and, as he has proceeded to Japan, as Professor of Forest Botany in the Japanese Forest School, his experience of the Douglas Fir may not become available for years to come.

Pending further investigation, I may be permitted to gather together what useful information is available at present, and to draw such conclusions as may appear permissible. The following* information is at my disposal:—

* Much general information is, no doubt, available, but for the present object only actual measurements can be used.

- (1.) Measurements in the Taymount plantation.
- (2.) Height growth of two Douglas Firs on the same estate, planted in 1834.
- (3.) Information supplied by Dr. H. Mayr.
- (4.) Examination of a section of a full-grown Douglas Fir, deposited in the Cooper's Hill Forest Museum.

(Ad. 1.) The details of the measurements made in the Taymount plantation have been given above.

(Ad. 2.) The Douglas Firs, planted in the year 1834, were about four years old when planted, so that the trees were about fifty-seven years old in 1887, when they showed a height of about 90 feet.

(Ad. 3.) Dr. Mayr informs us in the *Allgemeine Forst und Jagd Zeitung* of February, 1886, p. 61, that the Douglas Fir reaches the highest degree of perfection in the moist valleys of the Cascade Range Mountains, which run parallel to the Pacific coast. He found that in those localities the average height of full-grown mature Douglas Firs, grown on soil of the best quality, amounts to 213 feet, with a diameter of 6½ feet, measured at 6½ feet above the ground. In the same locality, on gravelly soil, the trees only reached an average height of 148 feet, and a diameter of 2·6 feet. Again, in the Rocky Mountains, in Montana, at the same elevation and degree of latitude as on the west coast, the Douglas Fir reaches, on best soils only, the same dimensions as on the gravelly soil of the Cascade Range Mountains, that is to say a height of 148 feet, and a diameter of about 2·6 feet. The latter dimensions are not more than what our Silver Fir will attain in localities of the first quality. The part of the Cascade Range, where the Douglas Fir grows, has an annual rainfall of about 2·6 feet while in Montana only 24 inches fall. Dr. Mayr believes that the development of the Douglas Fir is proportionate to the rainfall, respectively to the degree of moisture in the air.

(Ad. 4.) The cross-section in question was sent from America for exhibition in Europe; it was then made over to Kew, and by the kindness of the Director of Kew Gardens it was lately presented to the Cooper's Hill Forest Museum. The section shows a total diameter, including the bark, of 7 feet 9 inches, and the counting of the concentric rings indicates a total age of 515 years. A careful examination of the section has yielded the results exhibited in the subjoined table:—

Age in Years.	Diameter in Inches.		Sectional Area in square feet.		
	Total.	Increment during every twenty-five years.	Total.	Increment during twenty-five years.	Increment every 100 years.
25	10·9	10·9	0·618	0·618	
50	14·3	3·4	1·115	0·467	
75	18·1	4·1	1·817	0·732	
100	23·0	4·6	2·885	1·038	2·885
125	26·1	3·1	3·715	0·880	
150	29·5	3·4	4·746	1·031	
175	33·0	3·5	5·940	1·194	
200	36·6	3·6	7·306	1·366	4·421
225	41·9	5·3	9·575	2·269	
250	47·1	5·2	12·100	2·525	
275	51·6	4·5	14·522	2·422	
300	56·6	5·0	17·473	2·951	10·167
325	60·7	4·1	20·046	2·623	
350	65·2	4·5	23·186	3·090	
375	69·6	4·4	26·421	3·235	
400	74·8	5·2	30·516	4·005	13·043
425	77·7	2·9	32·928	2·412	
450	81·5	3·8	36·228	3·300	
475	84·6	3·1	39·006	2·808	
500	87·4	2·8	41·663	2·627	11·147
515	89·5	...	43·639		
Including the bark)	93·0				

This table exhibits some very remarkable facts.

In the first place, it shows that the tree was still making good increment at an age of 515 years, which is higher than that usually attained by the European Larch, Scotch Pine, Spruce and Silver Fir. Secondly, it shows, that the enormously rapid increase of the diameter during the first twenty-five years is suddenly followed by a much smaller and an approximately even increment during each of the following nineteen periods of twenty-five years. I have represented the progress of the diameter increment graphically in the appended drawing, which will give a clear idea of it:—

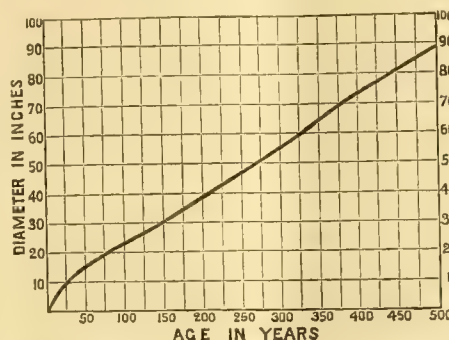


DIAGRAM SHOWING THE INCREASE IN DIAMETER OF THE TRUNK OF THE DOUGLAS FIR, ACCORDING TO AGE.

Thirdly, the sectional area increases, on the whole, steadily. The periodic increment increases up to the age of 400 years, when it commences to fall. Taken by centuries, we find that the fourth century yielded the largest increment. The appended graphic representation will make this clear:—

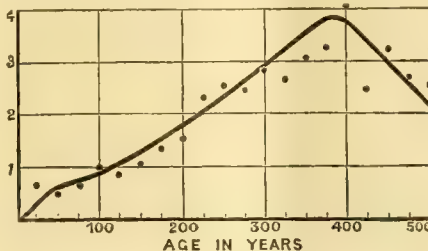


DIAGRAM SHOWING THE PERIODIC INCREMENT OF EVERY TWENTY-FIVE YEARS IN SQUARE FEET.

Fourthly, the rate of growth indicated in the section up to the year thirty resembles that of the average tree in the Taymount plantation in a striking degree, as the following figures will show:—

Diameter of average tree at Taymount } 12 inches.
at 4 feet 6 inches above the ground }
Diameter of thirty years' growth on the } 11·9 inches.
section from America }

W. Schlich, Cooper's Hill.

(To be continued.)

FLORISTS' FLOWERS.

THE CHRYSANTHEMUM.

BEYOND attending to the proper watering of the plants—in doing which no water should be slopped about the house—airing the plants, and removing decaying flowers and leaves, nothing more is necessary for the present. Mildew must be sharply watched for, and the sulphur put into use on its first slight appearance. In dull cold weather the plants are better for being ventilated than kept shut up; and to do this it may be needful to have a little heat in the pipes; but there is economy in it, as the flowers last longer, and the plants are healthier.

It is good practice to get the cuttings in as soon

as possible, so that the old plants may be turned out to make room for something else. It is not safe to turn the old plants out-of-doors until the cuttings have all been taken off. Put singly into small pots; they will make roots in a frame or cool greenhouse. Shy rooting varieties should be afforded a mild bottom heat.

THE PELARGONIUM.

Now that the value of the single and double zonal varieties for winter blooming has been discovered, few gardens are found without them. When arranged with Bouvardias and Carnations they have a charming effect. What with Chrysanthemums, winter-flowering Orchids, and the above class of plants no garden need be without flowers during the next two months. Zonal Pelargoniums, Bouvardias, and perpetual flowering Carnations do well together at this season in a minimum temperature of about 55°, the ventilators being opened a little on every favourable occasion, and allowing a small amount of ventilation at the highest point of the house, at all times. The points of the growing shoots of Pelargoniums ought to be pinched out to cause the flower trusses to develop more perfectly and in greater numbers.

Specimen plants of show Pelargoniums intended to flower early should be repotted into their flowering pots, if this was not done last month. Large specimens are usually flowered in 8½ inch pots, and such plants are usually placed at first in 6 or 7-inch pots. The soil should be in a medium state of dryness, and consist of turfy loam four parts, decayed manure, one part, leaf soil one part, and some sharp sand; a sprinkling of bone-dust may be added, especially for the largest plants, as they are not naturally so vigorous as younger ones. The small-flowered fancy varieties are tenderer than the others, and like a warmer atmosphere. A little peat should also be added to the potting soil to make it lighter. Some few varieties amongst the others are more delicate in constitution, and may require a little more care. Cleanliness, and a free exposure of the plants to light and air are of prime importance. J. Douglas.

PLANT PORTRAITS.

ÆRIDES QUINQUEVULNERUM, *Lindenia*, t. 150.—Philippines.

APPLE TRANSPARENT, *Bulletin d'Arboriculture*, September.

AQUILEGIA STUARTI, *Garden*, October 13.

ARISTOLOCHIA ELEGANS, *Moniteur Horticole* October 10.

AZALEA ARBORESCENS, *Garden and Forest*, October 17.—Flowers white, stamens scarlet. Hardy shrub.

CATASETUM BUNGEROTHI, *Orchid Album*, t. 332.

CYPRIPEDIUM BELLATULUM, *Lindenia*, t. 142.—A form of C. Godefroyæ, with richly spotted flowers.

CYPRIPEDIUM FITCHIANUM ×, *Orchid Album*, t. 350.—A cross between C. Hookeri and C. barbatum.

DEUTZIA PARVIFLORA, *Garden and Forest*, September 26.

ERYTHRONIUM HENDERSONI, *Garden and Forest*, August 29.

HIPPEASTRUM SOLANDRIFLORUM, *Illustration Horticole*, t. 58.

NEPENTHES CURTISII, *Illustration Horticole*, t. 59.

NYMPHÆA TUBEROSA, *Garden and Forest*, September 20.

ODONTOGLOSSUM ODORATUM VAR. *GLONERIANUM*, *Lindenia*, t. 151.—Venezuela. May, June.

ONCIDIUM MACRANTHUM, *Lindenia*, t. 152.—New Granada.

PEAR CHAUMONTELLE GRAS, *Revue Horticole*, Oct. 16. *RHODODENDRON (AZALEA) VASEYI*, *Garden and Forest*, October 3.—A native of North Carolina; flowers bright pink, appearing before the leaves.

RODRIGUEZIA SECUNDA, *Orchid Album*, t. 351.

TIGRIDIA PRINGLEI, *Garden and Forest*, October 10.

TRICHOPILLA TORTILIS, *Orchid Album*, t. 34.

TULIPA GREIGI, *Illustrierte Monatshefte*, November.

VRIESIA WITTMACKIANA X, *Gartenflora*, t. 1283, October.—A hybrid between *V. Bariletti* and *V. Morreniana*. Leaves broad, spineless, with a central two-ranked close spike of oblong boat-shaped bracts, red at the base, yellow at the tips.

CULTURAL MEMORANDA.

RUELLA PORTELLÆ.

This is a very useful decorative stove plant, having dark green elliptic-ovate sub-acute leaves narrowing into a slender petiole and a light green mid-rib on either side of which is a narrow white band. The flowers, of a bright rose-pink, are from 1½–2 inches long, and nearly as much broad, hairy, and terminal. The habit is dwarf and compact. It is easily propagated by cuttings put in now, and again in the spring for successional bloom. If the points of the young shoots are inserted in 3-inch pots filled with light sandy soil placed in heat, watered and kept close, they will soon root; after which the points of the shoots should be pinched out, to induce the growths from the base. Pot them off singly a week or ten days later into small 60's, and grow them on in a light position near to the glass. Thus treated nice little plants for flowering next autumn and winter will be secured.

CENTRADENIA ROSEA.

This spring flowering stove plant is of a dwarf spreading habit and very easy culture. Small plants of it come in very useful for standing round the edges of the staging in stoves and warm greenhouses, or for intermixing with other plants in house decoration. Cuttings put in in the ordinary way, in peaty soil having a surfacing of silver-sand and placed in heat, will soon take root. They should then be potted off singly into 60's, returned to a light position in heat, and watered, afterwards shifting them into 48's as they require it. It produces close heads of pinkish-white flowers. *H. W. Ward.*

OXALIS BOWIEI.

This pretty Wood Sorrel was commonly cultivated in gardens some years ago, but scarcely ever as a winter bloomer (see p. 501), rather to flower in early summer and on occasionally till August. The bright cerise-pink of the flowers is of a shade of colour seldom met with in greenhouse plants, and the plant on that account, and because of its easy culture, was a favourite with many. The tubers, which are elongated, Pear-shaped, and about 1½ inch long, were potted in autumn if freshly bought in, and kept in a vinery at rest, by preference, but at any rate in a place where the frost did not enter. The soil, a light peaty mixture with plenty of silver-sand in it, was maintained in a dry condition until early in the month of March, when the increasing warmth required that water should be supplied to the soil, which was best done by submerging the pots in a tub for a few moments, afterwards placing them in a greenhouse or newly-started vinery for a short time, and affording water in moderate quantities as the soil got dry. After a little foliage was made the pots were placed in a shallow pit, and kept close to the glass till flowers appeared. It is very essential that the plants be placed near the light, as the leaf-stalks rapidly become drawn when placed far from it, and the beauty of the plant spoiled.

By starting the stock of tubers at two or three times, at intervals of a fortnight, the succession of flowering plants may be extended into late summer. As a rule, tubers that have flowered had better be rested in their flowering-pots, starting them when required, as it is found that to keep a compost, and especially a peaty one, in a quite dry condition throughout the winter, does not improve its condition. The drying off of the tubers in the autumn should be practised in a gradual way, as with *Achimenes* and other similar subjects. *F. M.*

PLEIONES.

. During the past few weeks these plants have been

the brightest objects in the Orchid house, and as some species are now going out of flower, it may be well to remind those who cultivate them that this is the best time to repot them. Although no leaf-growth is apparent they commence to root immediately, and if disturbed later on some of the young roots are sure to be broken. A compost of loam and peat fibre (two parts of the latter to one of the former) with chopped sphagnum and a little silver-sand, is one that suits them perfectly. Well-drained pans, about 5 inches deep, are well adapted for their culture. After potting, the pans should be placed on a cool, airy shelf, and no water must be given until the young leaves are pushing from the buds, and even then very carefully. Over-watering during the earlier stages of growth is one of the greatest errors in their cultivation. When in full activity, however, *Pleiones* can scarcely have too much, and manure-water may be frequently given. The most useful species are *P. lagenaria*, *maculata*, and *Wallichiana*; another distinct and desirable species is *P. humilis*. All these are natives of the Himalayas. *W. B.*

FARFUGIUM GRANDE.

This easily grown plant is propagated by division, the crowns being potted up in small pots in a mixture of three parts light sandy loam and one of sweet leaf-mould, afterwards grown on in a close pit, giving them a position near to the glass to ensure sturdy growth. Shift into larger pots before the roots become matted. It is a dwarf-growing broad-leaved subject, and the fact of its dark green surface being marbled over with yellow renders it a decorative plant of some value. It succeeds in a greenhouse, and requires copious supplies of water after the pots have become well filled with roots.

HIBISCUS ROSA SINENSIS.

There are now many excellent varieties of this native of the South Sea Islands in cultivation, among which may be mentioned *H. rosa sinensis magnificus*, *H. rosa sinensis fulgidus*, *H. rosa sinensis kermesinus*, *H. rosa sinensis miniatus semi-plenus*, and *H. rosa sinensis vivicans*, all of which produce flowers of great size and brilliancy of colour. The *Hibiscus* is a remarkably showy stove plant. It is of free growing and vigorous habit, and therefore of easy culture. Cuttings of the young growths having two or three joints, inserted round the edges of 6-inch pots filled with peaty soil, with a sprinkling of silver-sand added, plunged to the rim in sawdust, in a hand-light placed anywhere in heat, watered and kept close, will soon emit roots. They should then be pinched, and a couple of weeks later be potted off singly into 3-inch pots, returned to heat and watered, afterwards shifting them into larger pots as occasion may arise, using three parts of peat and one of fibry loam and sharp sand, and in a rougher state at each subsequent potting. After the pots have become filled with roots, an occasional surface-dressing with Beeson's bone-manure before giving water at the roots, will prove beneficial to the plants. *H. W. Ward.*

PLANT NOTES.

CLETHRA ARBOREA.

GREENHOUSE hard-wooded plants in general do not receive so much attention as many of them deserve; the above-named plant, for instance, is one of that class. It is easily managed, and well repays the small amount of labour that it is necessary to bestow upon it by producing an abundance of pretty white flowers borne at the ends of the branches. It is not of a dense habit, and grows from 8 to 10 feet in height. Madeira is its native country, and it belongs to the Heath family. The flowers last in perfection a length of time. Many of the plants of this genus are deciduous, but this is evergreen. It is benefited by being put out in the open in a shady part during the summer months. A mixture of rough loam, peat, and sand (peat predominating), is a suitable compost to pot it with. *W. H.*

RICHARDIA LEHMANNI.

We received rhizomes of this plant from the Cape of Good Hope, some few months ago, under the name of *R. ethiopica* var. *rosea*. These have since flowered, and specimens have been sent to the Kew Herbarium, and Mr. N. E. Brown has referred it to the above species. We were somewhat sceptical as to its being rose-coloured with us, however permanent that colour may be in its own habitat; as many plants that hail from these bright sunny lands with most beautiful coloured and tinted flowers are quite a failure when an attempt is made to reproduce them in our ever-changing clime. Many instances might be cited of plants that are most gorgeous in colour in their own homes, but which when introduced and grown in our country are almost worthless because they lack the colour they possess in their own countries. In this plant we noticed one flower which had a slight tendency to become rose-coloured, but the rest are white, and with age have a tendency to become green. The leaves are long and narrow, tapering at each end, measuring some 14 inches in length at most, and from 1 to 4 inches in width at the widest part, the petioles being a little longer than the length of the leaves. As far as we are able to judge from our plants, they do not seem very floriferous, but we cannot say definitely as to its capabilities in this direction, as the rhizomes we received were not all of equal vigour. It certainly is a plant well worth growing, and next year we hope to be in a position to say something more of its merits. *W. Harrow, Botanic Garden, Cambridge.*

DORONICUM PLANTAGINEUM EXCELSUM.

This is by far the finest Leopard's-bane, and undoubtedly one of the most showy and useful hardy perennials we possess. It should be grown in every garden, if only for the sake of its lovely flowers for cutting—a use for which they are particularly well adapted. They last for a week in water, and their rich golden yellow colour makes them highly attractive. It has been so frequently described, that little need be added to what has been said before. I enclose a few blooms cut from an open bed, which has been in continuous flower ever since spring, and even now in November they look as gay as ever.

To procure a good supply of cut flowers in early spring, I am now potting up a number of plants in large pots, which I keep in a cool frame during the winter. In early spring I place them in a greenhouse, with but little heat, where they soon send up numerous flower-stems. Thus treated, I always manage to have an abundance of these beautiful blooms before the early spring-flowering varieties, such as *D. austriacum*, *D. caucasicum*, and others, make their appearance. *C. S.*

GROUP OF ODONTOGLOSSUMS.

[SEE SUPPLEMENTARY SHEET.]

No genus of Orchids lends itself more readily to the skill of a tasteful arranger of plants than the *Odontoglossum*, it being almost impossible to arrange its arching sprays of handsome flowers in a stiff or ungraceful manner, even when set up without special skill in arranging. A few broad foliage plants at the back, a plant or two of *Adiantum Farleyense* and *A. cuneatum*, a few dwarf *Selaginellas*, some *Isolepis*, and variegated *Panicum*, or so, for the front, the floral part of the arrangement being made up with the handsome snow-white or quaintly blotched *Odontoglossum crispum* and *O. Pescatorei*, and a few rich brown and yellow *O. triumphans* and *O. Hallii*, form a display sufficiently striking to give a good excuse for the enthusiasm of any lover of Orchids. Such a group we depict in our Supplementary Sheet, and such a group is to be met with in scores of our gardens, now that Orchid growing has become a general and not an exclusive fancy in our gardens. Many photographs of effective grouping of Orchids have been sent to us, and from time to time reproduced, acknowledgment to the sender being at the same time made. Unfortu-

nately, in this case we are unable to do so, as the original bore no mark whereby to identify it; all we can say is, that we thank the sender, and shall be glad to state from whose collection the photograph came should the information be forwarded to us.

PLANTS AND THEIR CULTURE.

PITCAIRNIA CORALLINA.—Many of the Bromeliaceae are worthy of more extended cultivation, as in the case of this species, with its long, arching, plicate leaves of a glaucous-green colour on the upper surface, and densely covered with a white powder on the under-side; but although thus ornamental when not flowering, it is much more so during that period. The red flowers are produced in massive racemes about 2 feet long. Both peduncle and flowers are red, and the latter is of considerable size and substance; the three inner pieces of the perianth are the largest, and edged with white. A curious point about the inflorescence is, that shortly after it emerges from the base of the plant it is suddenly bent downwards, which gives it the appearance of being pendulous, but although the raceme is thus bent down, the individual flowers are bent back towards the base of the peduncle, and therefore maintain an erect position, which gives them a singular appearance. They are thus freed from the dense mass of foliage, and are thus seen to the best advantage. The plant is of easy culture, growing freely in the stove in a free fibrous compost. It flowers at various seasons, but usually in spring; however, a large plant growing against the back wall of our Bromeliad-house is, and has been, in flower for some long time, and has had over a dozen of its beautiful racemes of blooms. It is figured in the *Bot. Mag.*, t. 6600. The plant is propagated by division, or from seeds when these are obtainable; but it is practically of caulescent habit, and is readily divided.

Flower Forcing.—This department will now require much forethought and energetic management where large quantities of cut flowers are required regularly. It is indispensable to success to look well ahead, and make timely provision for probable requirements. Of course it rarely happens that a quantity of forced stuff turns out just according to expectations under the best management; therefore it is well to put into heat more than are likely to be required, but to avoid over-abundance, especially when Chrysanthemums or other flowers are in season; though there should always be so much material in hand that by retarding or accelerating, as circumstances may require, an unbroken supply may be sustained. In the meantime the earliest batch of Roman Hyacinths and paper-white Narcissus may be removed from the plunging material when sufficiently rooted, and if the leaves are much advanced carefully inure them to the light, and after a few days they may be placed in the forcing house if required soon, if not place them well up to the light in the greenhouse; in either case the flower-spikes will be improved by a watering with weak liquid manure occasionally. Where specimen potfalls are grown, see that the flower-spikes are afforded some slight support at an early stage, otherwise they will be apt to break off. Of shrubs for forcing one of the best is the common Lilac, and the white variety is usually most prized. Lilac is easily brought into bloom in an ordinary forcing or intermediate house, or other place where the temperature is kept at about 60°. But as the flowers expand care should be taken not to wet them, as they are easily spoiled. The plants should be left out until the leaves have fallen, and I think they seem to force better when they have had a good frost before being lifted. Secure a plentiful supply of Lily of the Valley and *Spiræa japonica*; both are best when started in the dark and in plunging material, as the latter keeps them more uniformly moist at the root. *F. Ross, Pendel Court.*

FRUITS UNDER GLASS.

PEACHES.—The early house should now be shut up, the trees being syringed morning and afternoon—the night temperature not being allowed to rise higher than 50°, and a ridge of warm leaves in the centre of the house, will secure this amount of warmth, unless the nights be very cold. It is, however, better to force trees in pots thus early in pre-

ference to exciting permanent trees. If the requisite number of these be available, and are now plunged in warm leaves, they will speedily respond to the process of forcing. The day temperature should not exceed 55° without sun in the earlier stages, and 60° with sun-heat, and with ventilation; but should the thermometer run up to 65° for a short time after closing, and very lightly dewing be afforded with tepid water, no harm will accrue. When airing, guard against cold draughts.

Succession-houses.—Give attention to the thorough cleansing of the trees, and doing the little pruning which will be required. Well wash the shoots with a little petroleum, soft-soap, and warm water, laying the shoots on the palm of the left hand, and working the brush upwards. Top-dress as formerly directed, and carefully guard against a too dry state of the soil at the roots. When the trees are in bad soil, no time should be lost in having matters put right, the best plan being to lift the roots, and replant them in better soil. Let the drainage also be seen to. Avoid adding manure to the soil when replanting, but still, if the soil be of a light nature, a little well rotted manure will do no harm if the trees are of a good age; but if they are young it will produce grossness; on the contrary, if the soil be heavy, a liberal amount of charred soil should be added, along with plenty of old mortar rubbish, using as a manure, bone-meal. Where the trees have been lifted during the present season and are full of young roots protection must be afforded such, else wet will seriously injure them. Recently planted trees will require a little warmth in the apparatus, with a free current of air even after the leaves may have dropped, in order to properly ripen the growth. In pruning such trees let the knife be used as little as possible even should the shoots be 4 or 5 feet long. The best plan to reduce such grossness is to divert the flow of sap into as many channels as possible, and this can be accomplished when the trees commence to grow by leaving as many side shoots as are requisite for the furnishing of the trellis; cutting back such shoots aggravates in a large measure the tendency to grossness, as the harder a tree is pruned the more does it extend itself, and as long as this tendency remains there is little certainty of obtaining a crop of fruit. On the other hand most of the lateral growths from a strong shoot will set any quantity of fruit buds. *W. M. Baillie, Luton Hoo.*

THE HARDY FRUIT GARDEN.

VARIETIES OF PEARS TO PLANT.—This matter requires careful consideration, as there are many varieties which fail to give satisfaction in the open ground, and in any but very good climates, but which, when they are accorded a wall to grow on, bring their fruit to perfection. When there is in the garden much extent of wall with a southern aspect the choicer late-ripening varieties of Pears may be planted on it, whilst for earlier varieties the other aspects will suffice provided the soil is suited to Pears. The following is a list of select varieties which succeed well either as pyramids or bushes on the Quince, and which seldom fail to bear good crops, viz.:—*Souvenir du Congrès*, *Colmar d'Été*, *Beurré d'Amanlis*, *Thompson's*, *Louise Bonne*, *Flemish Beauty*, *Beurré Hardy*, *Beurré Superin*, *Pitmaston Duchess*, *Marie Louise*, *Doyenné du Comice*, *Maréchal de la Cour*, *Durondeau*, *Seckle* and *Dana's Hovey*.

For growing against walls, as cordons, &c.:—*Beurré Giffard*, *Summer Beurré d'Arenberg*, *Beurré de l'Assomption*, *Duchesse d'Orléans*, *Jersey Gratioli*, *Bonne d'Ézée* (Brockworth Park), *Winter Nelis*, *Bergamotte d'Esperen* and *Pitmaston Duchess*. The following will be improved by planting on a south aspect:—*Gansel's Bergamotte*, *Marie Louise*, *Beurré Superin*, *Knight's Monarch*, *Glou Morceau*, *Passe Colmar*, *Olivier de Serres* and *Marie Benoist*. For growing as standards in the garden and orchard:—*Williams' Bon Chrétien*, *Windsor*, *Swan's Egg*, *Autumn Bergamotte*, *Fertility*, *Jargonelle* (this does well on wet aspect in northern counties), *Beurré de Capiaumont*, and *Louise Bonne*, are about the best.

Apples.—This fruit is not so fastidious as to soil as the Pear, and it will grow in almost any kind of soil, providing it is not a wet one, but where Apples are not usually in England planted, is against walls; but if this can be done, a few of the choice dessert kinds so treated will repay the trouble taken. Some of the finest and most highly-coloured fruits of Ribston

Pippin and Peasgood's Nonsuch I ever saw were grown against a wall.

The following is a list of the best and most sure-cropping culinary Apples in the West, and perhaps generally over the country:—*Lord Suffield*, *Potts' Seedling*, *Stirling Castle*, *Cellini*, *Cox's Pomona*, *Small's Admirable*, *Echlinville Seedling*, *Warner's King*, *Prince Albert*, *Beauty of Kent*, *New Northern Greening*, *Mère de Ménage*, *Yorkshire Beauty*, *Winter Hawthornden*, *Hanwell Souring*, *Wellington*, *French Crab*, and *Norfolk Beaufin*; and for dessert:—*Juneating*, *Worcester Pearmain*, *Red Astrachan*, *Quarrenden*, *Fearn's*, *Cox's Orange*, *Ribston*, and *King Pippins*; *Seek-no-Further*, *Pineapple Reinette*, *Reinette du Canada*, *Duchess of Oldenburg*, *Herefordshire*, and *Lamb Abbey Pearmain*, *Summer*, and *Franklin's Golden Pippin*, *Ashmead's Kernel*, *Scarlet Nonpareil*, and *Blenheim Orange*.

Of newer varieties the following are worthy of a place in any collection:—*Beauty of Bath*, *Schoolmaster*, *The Queen*, *Sandringham*, *Bismarck*, *King of Tomkins County*—in warm parts of the country only; *Gascoigne's Scarlet Seedling*, and *Lady Sudeley*. *A. Ward, Stoke Edith Park.*

THE KITCHEN GARDEN.

SMALL SALAD.—This is easily grown during the summer months by the merest novice, but its cultivation in winter is a very different matter; even in the best regulated establishments it is capricious at times, and not always to be had when required. The best system of cultivation I have met with is to sow in boxes about 3 inches deep, and nearly of the size of large blue roofing slates; the size of the latter varies a little with the sort, and they form one of the best coverings for the seed-boxes. These should be filled with a light compost, pressing all in firmly with a brick to within three-quarters of an inch of the top, leaving a smooth even surface. A very slight sprinkling of fine soil should be evenly distributed over this, and the whole well soaked with tepid water. As soon as this has drained through the box the seed may be sown, and in doing this it is well to sow more thinly than is usual during the summer months. No soil should be placed over the seed, but the slate placed over the box at once, before the surface soil gets dry, and kept there until the young plants are almost touching it; the boxes should then be placed where they will receive a good bottom-heat—for instance, over the pipes of a forcing house, where a minimum temperature of 65° is maintained, with a couple of bricks beneath to keep them from touching the pipes. Here they should remain until the seed is germinated and ready for the slates to come off. If the latter fit the boxes closely no water should be required after the seed is sown. Damping-off, which is often very troublesome in the winter season, is almost certain to ensue if any water is given. The slates should be removed gradually by raising them a little in the first instance, so as to inure the plants by degrees to the air and light. After the slates are removed the boxes should still remain in the same house at this part of the year, as any check to the growth causes damping at once. It is very important that none but new seed should be sown during the winter months, that which is old or has been in a damp place is sure to cause disappointment. The above remarks apply to both Mustard and Cress. The former should be sown about eight days before required for use, and the latter requires three or four days longer before it is ready. *W. H. Divers, Ketton Hall, Stamford.*

PRIZE SHOW OF ONIONS.—Encouraged by the success of their annual shows of Leeks and Cabbages, Messrs. Stuart & Mein, seedsmen, Kelso, resolved to hold a show of Onions on the same lines, viz., that the exhibits be grown from seed supplied by the firm. The competition, which took place on Friday, November 2, in Messrs. Stuart & Mein's premises, was open to the United Kingdom, and a good number of exhibits were sent from various parts of England and Scotland. Some heavy, well-matured bulbs were shown. The following were the prize-takers:—1st, Mr. E. S. Wiles, Edgecote Gardens, Banbury; 2nd, Mr. S. Buglas, Old Town, Ayton; 3rd, Mr. Charles Harris, Crossford, Lanark. The 1st prize lot weighed 18½ lb., averaging over 1 lb. per bulb.

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APPOINTMENTS FOR THE ENSUING WEEK.

MEETING.

WEDNESDAY, Nov. 21 { National Chrysanthemum Society ;
Floral Committee.

SHOWS.

TUESDAY, Nov. 20 { Edinburgh, Liverpool, Henley (two
days each), and Oxford.
WEDNESDAY, Nov. 21 { Birmingham, Rugby (two days
each), Croydon, Bristol, and
Banbury.
THURSDAY, Nov. 22—Hull (two days).
FRIDAY, Nov. 23 { Pontefract, Bolton, and Stockport
(two days each).

SALES.

MONDAY, Nov. 19 { Dutch Bulbs, at Stevens' Rooms.
Dutch Bulbs and Lily of the Valley,
at Smail's Rooms.
Dutch Bulbs, at Protheroe &
Morris' Rooms.
TUESDAY, Nov. 20 { Nursery Stock from sample, at Pro-
theroe & Morris' Rooms.
Roses, Plants, &c., at the City Auction
Rooms, by Protheroe & Morris.
WEDNESDAY, Nov. 21 { Dutch Bulbs, Liliun auratum, and
named Standard and Dwarf Roses,
at Stevens' Rooms.
Dutch Bulbs and Lily of the
Valley, at Smail's Rooms.
Liliun auratum, Azaleas, English
grown Lilies, &c., at Protheroe
& Morris' Rooms.
Nursery Stock, at the Burnt Ash
Hill Nurseries, Lee, by Protheroe
& Morris (two days).
THURSDAY, Nov. 22 { Dutch Bulbs, at Protheroe & Morris'
Rooms.
Landscape Nurseries, at Finchley
Road, by Protheroe & Morris.
FRIDAY, Nov. 23 { Dutch Bulbs, at Protheroe & Morris'
Rooms.
Dutch Bulbs and Lily of the Valley,
at Smail's Rooms.
SATURDAY, Nov. 21 { Imported Orchids, at Protheroe &
Morris' Rooms.
Dutch Bulbs and named Standard
and Dwarf Roses, at Stevens'
Rooms.

A Palliative
for the Potato
Disease.

A USEFUL piece of work has been accomplished at Chiswick this year, and one which illustrates our contention as to the use that may be made of the gardens as an experimental station. To make the matter intelligible we must go back to the years 1884 and 1885. In those years very elaborate experiments were carried out in order to test the value of the Jensenian system of moulding as a preventative of the spread of the Potato disease, and the results were as elaborately classified and noted under the direction and personal superintendence of a sub-committee of the Scientific Committee of the Royal Horticultural Society. A summary of the results obtained was given in our columns, January 9, 1886, p. 51, showing:—1, the methods of conducting the experiments; 2, the amount of produce under the varied conditions of the experiments; 3, the

comparative effects of long or of short periods of earthing-up or of not earthing-up at all; 4, the consequences of bending the haulm; and, 5, the results obtained from planting whole tubers and out sets respectively. Interesting as these results were, they failed of their primary object because the development of the fungus in those years was so slight that no trustworthy information was afforded by the experiments as to the effect of the new system of moulding in preventing the spread of the disease. Discouraged by such a result, the sub-committee, consisting, as it did, of busy men, all living at a distance from the garden, and all fully occupied with their own concerns, did not attempt to repeat the experiments in 1886 or 1887; and so far it is fortunate they did not, as the amount of disease in those years was also inappreciable. This year, however, circumstances turned out somewhat differently, and what happened was detailed in a short report presented to the Scientific Committee at its meeting on Tuesday last:—

"During the present season the Potato disease set in at Chiswick with virulence about July 29. Up to that time no attempt had been made to check its course or to note the conditions under which it occurred; but, at the suggestion of Mr. PLOWRIGHT, two rows in juxtaposition were submitted to experiment on August 10. The rows were 30 yards in length, the variety selected was Schoolmaster, and the conditions were as absolutely identical as possible, except that the one row was left moulded in the ordinary way, while the other was 'high-moulded'—that is to say, banked up on one side to form a ridge, while the haulm was slightly bent over to the other side. In the ordinary system of moulding, a furrow is left along the top of the ridge into which it is surmised that the spores must fall, washed off by rain or otherwise from the foliage. The high moulding, it is supposed, obviates this by securing the fall of the spores on the ground between the rows, and not on the rows themselves.

"As the disease appeared to be equally severe on both rows, and was, moreover, far advanced, but little expectation was indulged in that the results would be of any value. Nevertheless, on September 29, the Potatoes in the two rows were lifted and examined, as dug, by Mr. BARRON and Dr. MASTERS. It speedily became apparent that there was a considerable difference between the two rows, and that the tubers from the high-moulded row afforded a cleaner and more even sample. With a view to put this general impression to a numerical test, fifty tubers from each row were taken indiscriminately, twenty-five by one observer, the remainder by the other, so as to equalise, as far as possible, the 'personal equation.'

"These hundred Potatoes were then examined with a more careful scrutiny, each one being cut open to ascertain whether or no it was diseased. The result was as follows:—

"Out of fifty taken from the row moulded in the ordinary way, thirteen were found diseased, or 26 per cent.

"Out of fifty taken from the high-moulded row five only were noted as diseased, or 10 per cent.

"No doubt a more careful examination by the microscope would have indicated a larger proportion of disease in each case, but it is not likely that it would have very materially altered the proportion either in one direction or the other. In order, however, to obtain further information upon this point, twenty-five tubers from each row were put aside for future examination, and these being examined on November 10, gave the following results:—

"Of the twenty-five taken from the row earthed up in the usual way thirteen were diseased and twelve sound.

"Of the twenty-five taken from the row earthed-up in the Jensenian manner on August 10—when, as before said, the haulms of both rows appeared

equally rotten with disease—all the tubers were sound."

Of course it will be urged that this is only one experiment, and one only on a small scale, and that results might be different under other circumstances. Probably they would. Nevertheless, the experiment of 1888, surprising as it is in the uniformity of its result, is in strict accordance with the indications afforded by previous trials in the same direction at Chiswick and elsewhere, and we venture to think it is one well worthy the attention of practical men. It must further be recollected that the early experiments at Chiswick were conducted at an expenditure of time and labour which would have been quite impracticable from a commercial point of view; indeed, the cost of the experiment for the purpose of those experiments was designedly put out of consideration; but in 1888 the startling results obtained were gained by an expenditure which need not have exceeded, or only to a trifling amount, that ordinarily expended. The experiment, in fact, shows that even in the most advanced state of disease, so far as the haulm is concerned, a large proportion of the crop may be saved—one far larger than when the ordinary system is practised.

The Royal
Horticultural
Society.

ANYONE who chanced to look in at the Drill Hall on Tuesday last would have imagined that the old Society was indeed at its last gasp. Anyone, however, who happened to step across the street to the offices at 111, Victoria Street, would have come to a very different conclusion. From morning till a late hour in the afternoon, business of a very serious and important character, was in progress, and that it was both serious and important was proved not only by the numbers present, but by the character of the work done. The first business of a day crowded with work was the consideration of the question as to whether the meetings, or any of them, should be held at Chiswick, or whether all the meetings (as distinguished from exhibitions) should be held in the Drill Hall, or elsewhere. The meeting was opened by a speech from the President setting forth the objects of the meeting, a speech in which the claims of Chiswick certainly were not advocated with much zeal. Probably the President's remarks were based not entirely on his own personal convictions, but on the results of certain letters from influential exhibitors and others, the general result of which may be summed up in the statement that of twenty-nine letters received, eighteen were against meeting at Chiswick for various reasons assigned, and eleven in favour. This verdict presumably came from the trade and professional exhibitors, who were naturally thinking of "big shows," and of their own interests in connection therewith. The exhibitors of this class have been such staunch supporters of the Society, and their claims are so legitimate, that there is not one word to be said against them. Nevertheless, the Society does not exist for the sake of the exhibitors, nor does it appeal for public support because it holds flower-shows in which the interests of trade and professional exhibitors are more particularly involved. These do not by any means constitute the whole, or even the greater part of the objects for which the Society exists. Nor can a word be alleged against the propriety of holding occasional shows, large and small, in more central localities, and therefore more generally accessible to the exhibitors and to the general public. If big flower-shows and the award of prizes and certificates to clever gar-



GROUP OF ORCHIDS

deners and successful traders were all that were aimed at, the shows might be held at the Crystal Palace, the Aquarium, or any other convenient locality. The work of organising them and of awarding them might be undertaken, as indeed, it is already, by special societies like the Rose Society, the Chrysanthemum Society, and the now numerous organisations which threaten to outgrow their original limitations and to become general in their aim. General, however, only in the flower-show sense—not general in so far as the interests of horticulture in a wide sense are concerned. But in the case of the premier society the public has a right to look for broader aims and a more comprehensive scope. If these be not forthcoming, the Society, were such an operation possible, might as well—nay, rather had much better—be dissolved. Horticulture, as far as its public manifestations are concerned, would then be reduced simply to the bazaar element. Does anyone wish this? We think not, and we are supported in our opinion, first, by the unanimous vote in support of Mr. MALCOLM DUNN's resolution at the Chiswick Apple Congress, and specially—(specially because the meeting was convened for the express purpose of taking the vote on this particular subject)—because, the same verdict, after various other proposals had been made, was pronounced on Dr. MASTERS' resolution on Tuesday last. This was to the effect, that the Council be requested to make arrangements for the holding of a certain number of meetings at Chiswick during the ensuing summer and autumn. This proposal was advocated because it does not clash with any other, but particularly on the ground that it is desirable that the Fellows and the public should have an opportunity of seeing what the Society does at Chiswick. There is ample opportunity of seeing what the exhibitors can do, either at Chiswick or anywhere else; but what the Fellows have a right to demand is, that the Society itself shall do something towards carrying out the object for which it was founded—the advancement of horticulture, and that they shall have the chance of seeing and appreciating what the Society is doing. Of course this implies that the Society is already doing something at Chiswick. Those few who frequent that establishment know that a good deal is done, but they also know and feel that a good deal more might advantageously, and we may add profitably, be done there. The articles and letters in our last and in our present issues indicate what might and ought to be done.

That this view is substantially correct and in harmony with the feeling of the general body of horticulturists is shown, as we have said, not only by the results of the meeting at the Apple Congress, but specially by the vote taken on Tuesday last. In spite of the objections and doubts raised in all good faith by the President and Secretary, Dr. MASTERS' resolution was carried with one dissentient only.

It remains now for the Council to do their utmost to develop the resources of Chiswick, and to make arrangements for the holding of certain meetings during the year in the old home of the Society. This can be done without in any way interfering with the wishes of the exhibitors as to any meetings or shows which it may be deemed desirable to hold elsewhere. It pledges the Society to nothing further than that some meetings should be held at Chiswick. It may here be stated that some meetings of the Committees are already held during the season at Chiswick to inspect the trials of flowers, fruits, and vegetables, that take place there annually. Ex-

tend these meetings, give the Fellows an opportunity of seeing and appreciating what is being done in their interests and in that of horticulture, and the desired result will be obtained; only the scheme must be entered into in no half-hearted way, but with a resolute intention to achieve success as far as that may be possible.

The meeting of the Scientific Committee on this occasion was noteworthy for the report of some recent trials of the efficacy of the Jensen system of moulding, as narrated in another article. The doings of the other two committees are also reported in another column.

Here, too, we may allude to the meeting held to confirm the bye-laws. This meeting was well attended, and various points were discussed rather unnecessarily this time, as the laws in question had been, line by line, examined and re-examined by the Council, by the Committee of Fellows, and by the solicitors. The bye-laws are not all that could be desired; exception was taken to some of them—justly, perhaps, in the abstract—but still, after the assurance that all had been done in the way of scrutiny and revision that the charter would permit, it was ill-timed to persist in raising objections against the repeated expressions of opinion of the President and Secretary, who, knowing all that had been done, were in a position to speak with authority that ought to have been beyond question. At length, however, the bye-laws were passed, and now the Society must get on as best it can till the opportunity comes for applying for a new charter. That opportunity, it is universally admitted, does not present itself at the present time.

Lastly, and by no means least, the thanks of the community are due to the Council, who have, since they took office, laboured, with an assiduity beyond all praise to put the Society on a better footing, and who have succeeded to a degree that is not only astonishing, considering the time at their disposal, but which was considered by many to be impossible.

GIFT OF A PUBLIC PARK.—Sir JOHN HARDY THURSBY, of Ormerod House, Burnley, who was High Sheriff of Lancashire in the Jubilee year, has presented to the town of Burnley, through the Mayor (Alderman SUTCLIFFE), 28 acres of land, near the centre of the town, as the site for a public park. The value of the land is estimated at over £25,000.

HORTICULTURAL EXHIBITION, BERLIN, 1890.—With the year 1890 a period of five years will have elapsed since the last great exhibition of the *Vereins zur Beförderung des Gartenbaues in den Preussischen Staaten* was held, and now we find before us the provisional programme of another still more extensive. In one direction the exhibition is intended to illustrate the intimate connection between architecture and horticulture, and in this department it has already received the support of many competent persons. The schedule above-mentioned falls into eight chief divisions, viz., flowers and plants, and under these are decorative group novelties of the warm-house, of the greenhouse, of open-air plants, and of Orchids. Warm-house plants take 235 classes, greenhouse and out-of-doors plants, 377 classes; nursery commodities, 81; fruit, including articles made from the same, 25; vegetables, 16; and garden plants, 5 classes. Under the head of architecture and tools, implements, engines used in horticulture, there are 36 classes. The following section of the exhibition includes in its 59 classes plant morphology, anatomy of plants, growth of plants, physiology, instruments, and methods of research; useful and poisonous fungi, officinal and important technical plants, seeds, plant geography, &c. The exhibition, which will be open to all nations, will be held in the large premises of the Royal Exhibition buildings at the Lehrter Railway Station,

CHRYSANTHEMUMS AT MOOR PARK, RICKMANSWORTH.—A fine display of nearly 1000 plants in 200 varieties has been arranged in the various large houses of this well-known garden. The most beautiful varieties of the Chrysanthemum, in reflexed, Japanese, Anemone, &c., are well represented, exhibiting a fine display of colour. The groups are edged with well-grown plants of various winter-flowering plants and bulbs, which form a tasteful finish. Lord ENRY has kindly permitted the collection to be open to inspection by the public for the next week or so—a privilege lovers of the Queen of Autumn will be delighted with many of the new sorts that Mr. MUNDELL has grown this year.

CARNATIONS AT CHISWICK.—We learn that the proposal made in these columns recently with respect to having a trial of border Carnations at Chiswick next summer has been duly considered, but it being thought too late to arrange for its conduct next year, it has been determined to hold such trial in 1890. In the meantime it is to be hoped that proper conditions governing the trial will be elaborated and published in due course, and thus ensure the success of what could hardly prove to be other than of exceeding interest to all horticulturists.

BOTANICAL MAGAZINE.—The following plants are figured in the November part:—

Phaius Wallichii, t. 7023.—A large-flowered terrestrial Orchid, native of tropical India, with plaited leaves, and erect racemes of flowers, perianth $2\frac{1}{2}$ inches across, segments spreading lanceolate, chocolate-brown, with a narrow yellow edge; lip convolute, limb oblong, spreading, flat, violet, with a yellow blotch, and purple nerves. The colour of the flower is variable, as is also the tip of the lip.

Peumus fragrans, t. 7024.—A Myrtle-like shrub belonging to the order Monimiacæ, and remarkable for the delicious fragrance of its foliage and wood, and much valued in Chili for the manufacture of charcoal. The aromatic fruits are eaten; they attain the size and appearance of black haws, and the bark is used for tanning purposes. Kew.

Iris Korolkowi, t. 7025.—A species from Turkestan, with lilac ovate-acute standards, with a purple fringe at the base, and erect, oblong-acute, lilac standards. At the same time is figured a self-coloured variety from Professor Foster.

Calanthe striata, t. 7026.—A Japanese species, with leaves plicated, with erect, many-flowered racemes; flowers $1\frac{1}{2}$ inch across, segment, spreading, oblong, brown in the centre with narrow yellow margins; lip broad, roundish, deeply 3-lobed, with three projecting reels on the central lobe. Kew.

Azave Ellenmetiana, t. 7027.—Leaves narrow, lanceolate-acute, very fleshy, spineless, with a long, erect, cylindrical raceme of greenish flowers with very long projecting stamens and style. Kew.

THE CELEBRATION OF THE CENTENARY OF THE INTRODUCTION OF THE CHRYSANTHEMUM TO EUROPE.—It having been suggested that as the Chrysanthemum was introduced to Europe in 1789, its centenary should be celebrated, a preliminary meeting of representatives of Chrysanthemum Societies, judges and others, was held at the Crystal Palace on the 9th inst. Mr. E. SANDERSON, President of the National Chrysanthemum, in the chair. After some discussion it was proposed by Mr. JOHN LAING, seconded by Mr. WILLIAM EARLEY, and carried unanimously:—"That considering the year 1889 is the centenary of the introduction of the Chinese Chrysanthemum to Europe, it is advisable that the National Chrysanthemum Society be requested to prepare a scheme for the proper celebration of this event."

EXTRAORDINARY CARROTS.—At Waereghem, in Western Flanders, according to the *Bulletin d'Arboriculture*, a Carrot has been lately exhibited 1 metre 45 centimetres long; while at Beveren, in the same province, a Turnip has been shown measuring more than 1 metre in circumference. These giants recal-

the advertisements of the Mangels of such dimensions that sheep were grazing placidly on the roots while overshadowed completely by the foliage.

TEDDINGTON CHRYSANTHEMUM SHOW.—This was held on the 8th inst., and was well attended. Mr. G. A. Bishop, The Grove Gardens, Teddington, won the Challenge Cup, with a good stand, and other leading exhibits were from Messrs. Munro, Bates, Coombs, and Allen. In the section for fruits and vegetables the chief prizes were taken by Messrs. Bates, G. Smith, C. Garrod, W. Pain, T. Furrow, and J. Furrow. Cottagers and amateurs were well represented, and table decorations, bouquets, sprays, &c., were pretty.

PHALÆNOPSIS AMETHYSTINA.—Of this little gem—for such it must be described, being both small and elegant—two plants may now be seen flowering at Kew. An erect peduncle of but a few inches high is thrown out of the tuft of leaves, on which the flowers are borne. The sepals and petals are white, the front lobe of the lip rosy-purple, while the side lobes are beautifully marked with radiating lines of the same colour on a white ground. A woodcut of the plant may be found in the *Gardeners' Chronicle* for 1870, p. 1731. The native country has been somewhat vaguely stated as Soudanic Islands.

INSECTICIDES.—Mr. A. J. Cook, the Professor of Zoology and Entomology at the Agricultural College of Michigan, relates in the *Bulletin* of the College for September, that, "it pays remarkably well to spray" Apple trees to prevent the injuries inflicted by the Codlin moth. The poison used is arsenite of lime (London Purple), used in the proportion of one pound to 100 gallons of water. The spray should not be used till after the blossoms fall from the trees. "Spraying with insecticides is becoming exceedingly profitable," says the Professor. The pump used is a force-pump, which might be bought by one farmer and lent out to his neighbours, or purchased by co-operation. The spraying may be repeated once or twice in the course of the season. Obviously, it should not be used except when the fruit is in a very young immature state.

JULIETTE DORDON.—Among the new Chrysanthemums this is remarkable for the concentric way in which its colours are arranged; thus, the centre is white, surrounded by a broad belt of lilac, while the tips of the florets are white, thus forming a third circle outside the others.

TRURO CHRYSANTHEMUM SOCIETY.—The Truro people have established a society for the encouragement of the cultivation of the Chrysanthemum, and held their first exhibition on Tuesday and Wednesday, November 6 and 7. The show was regarded as a success by its authors, but the account of it sent to us would seem to point to the fact that a few cultivators took the lion's share of the prizes—a matter that will probably right itself in the future, when more competitors enter the field, and methods of growing and showing the flower are better understood.

DEVIZES CASTLE GARDENS.—Mr. THOMAS KING, who has had charge of these gardens for so many years, has made arrangements to take these into his own hands, for the purpose of growing fruit and flowers for market. As the present proprietor of the Castle does not at present intend to make it his residence this arrangement has been come to.

SPHINCTER GRIP ARMOURD HOSE CO.—This Company, with its rather grim title, is making a special issue of 25,000 shares of £1 each, in order to develop the resources of the Company, and enable it to meet the great demand upon its manufacturing capacity. The office of the Company is 63, Fore Street, E.C.

PUBLICATIONS RECEIVED.—*Native Flowers of New Zealand*, by Mrs. C. Hetley, part iii. (London: Sampson Low & Co.)—*Cultural Directions for the Rose*, by J. Cranston, 7th ed. (Hereford: King's Acre Nurseries).—*The Invisible Powers of Nature*, by E. M. Caillard. (London: J. Murray, Albemarle Street).—*The Orchids of the Cape Peninsula*, by Harry Bolus, F.L.S. (Cape Town, Cape of Good Hope.)

CHISWICK.

DEAR old Chiswick, "the Kew of horticulture!" Your leading articles (p. 540), and Mr. Dyer's remarkable letter in your last issue (p. 536), will, it is to be hoped, induce the Council of the Royal Horticultural Society and the Fellows generally to strain every nerve to raise their classical old garden into an institution of national importance and utility. Some portions of Mr. Dyer's letter might have been left unwritten with advantage, especially the innuendo that "in horticulture" opinions very seldom agree, seeing that the same is quite as true "in botany" or any other pursuit, as in gardening. After all, is not a healthy, frank, and courteous difference of opinion the very life and strength of any body of men working for a common cause? While I object strongly to some points in the letter referred to, I cordially agree with Mr. Dyer's main policy, that Chiswick should become to all intents and purposes the Kew of horticulture. This much is also, as I presume, the idea of the majority of those in any way interested in the question now raised.

Mr. Dyer's suggestions in the main are so good that I wish he had gone a step further in his suggestions, and given us his views as to the ways and means necessary for carrying out horticultural work and experiment in the Chiswick garden. Mr. Barron has done all that a man crippled for want of necessary funds could do to make Chiswick interesting, and the main difficulty with which the best friends of Chiswick have to deal is the question of funds. Money may, as wrongly applied, be "the root of all evil," but the want of it is, and has been of late years, equally against the Chiswick garden ever being "energetically worked in the spirit" which Mr. Dyer advocates so as to make of it "a really living thing." If a policy were all that the Council of the Royal Horticultural Society wanted at the present moment, Mr. Dyer's letter full as it is of acute suggestiveness, would be most satisfactory; but, as I have said, how can the requisite funds be obtained to restore Chiswick, and raise it to its proper position as an educational establishment on a par with Kew? Chiswick for gardening, and Kew for botany, is a dream we should like to wake up and find a true one. We are all very proud of Kew as the finest botanical garden in the world, and some of us know what it has cost Mr. Dyer to bring it up to its present rate of efficiency, but we do not forget that Kew has the benefit of a Government grant of £20,000 a-year, more or less. If "dear old Chiswick," under Mr. Barron's superintendence, could have had a half or a quarter of this sum annually for the past twenty years, there would have been little necessity for a policy to-day.

This brings me to a point worth some attention from the real friends of the Royal Horticultural Society at the present time. Mr. Dyer has distinctly shown that between Kew and Chiswick a division of labour and public utility could be carried on with national advantage. This being true, it follows that Chiswick may be as deserving of a Government grant on the one side as Kew is on the other. Now comes the vital question.—Can a Government grant be obtained for the Chiswick garden by the Royal Horticultural Society? Of course, I know that it will be a difficult thing to obtain; but the results are so promising, that such a subsidy from the State is worth striving for. But while working for and awaiting State aid, we must do the best we can for ourselves; and the Society must—as I believe it now really does (see p. 542)—recognise the main fact that its own claim for support and usefulness is entirely based on its garden at Chiswick and the work it can do therein. At present, I am afraid the Council of the Royal Horticultural Society are in much the same plight as the Israelites in Egypt, that is to say, we are all like the taskmasters eagerly demanding our tale of bricks, while denying the straw with which to make or bake them! The strenuous exertions made by the Council of the Royal Horticultural Society and others interested during the past year, are known only

to a few, but it is the general desire of all the friends of gardening that their efforts be successful. Amongst the failures the gloomy and deserted "Drill Hall" is, perhaps, the worst, and the one to be least regretted. My own notion is that, better attended and certainly more profitable meetings could be arranged in the Chiswick Garden—a garden, I am sorry to add, almost unknown to and unvisited by gardeners and the owners of gardens, as a body, when they take a holiday in town. The holding of meetings at Chiswick would lead to the advertisement of the Society's garden, which would soon become popular, and it might even derive some profit as a place of public resort by residents in its now populous and not unhealthy neighbourhood. It is pleasant to know that at the meeting of the Royal Horticultural Society's Council, held on October 31, the following resolution was passed—"That the Council of the Royal Horticultural Society fully appreciate the value attached to Chiswick garden, and are anxious to extend and develop its resources to the greatest possible extent for the advancement of horticulture as far as the means placed in their hands will allow." The italics are my own, and really prove, or at least indicate, pretty clearly, that a want of sufficient fund is at the bottom of the whole difficulty. F. W. Burbidge.

— Suggestions for making Chiswick Garden more useful and more attractive are now taking a practical form. We may hope that Mr. Thiselton Dyer's article in the *Gardeners' Chronicle*, and the Editor's comments upon it will be carefully considered by the Council of the Royal Horticultural Society.

While entirely agreeing with the proposals to establish trial grounds for fruit trees and vegetables, I leave this part of the subject to experts in kitchen gardening; but hardy herbaceous gardening is my particular hobby, and I cannot lose so good an opportunity of pleading for this being made a specialty at Chiswick.

There is not, as far as I know, any public garden in England where a collection of choice and uncommon hardy plants is grown in such a way as to display them to the best advantage, and to make them attractive to visitors. As Mr. Dyer says, Kew cannot be expected to supply this want. Botanic gardens must contain curious and rare as well as decorative plants, and when, for the sake of helping to instruct, specimens are grouped together in natural classes, the difficulty of making them ornamental is increased. Strangers who go to Kew only to see beautiful flowers are not edified by whole beds of Hemlocks, and Figworts, and Goosefoots, and Docks, which all the same help to make our national botanic garden contain the best collection of living hardy plants in the world. But visitors would very gladly go to Chiswick to learn what hardy plants are ornamental, and how they may be best displayed, and from Chiswick all weedy subjects would be excluded.

What I wish to propose may be done with very little expense and labour, if only sufficient space in a suitable situation can be supplied. As I have only been in Chiswick garden once in my life, I cannot from memory enter into local details, but I remember thinking that there was a great deal of room in the flower garden for more and for better flowers. This was perhaps ten years ago, and it may be different now. However, we should want for our purpose three or four long borders, either backed by shrubberies or open on both sides, and entirely free from the roots of trees. Aspect is of some importance, a long front to the east being by far the best. We will suppose these borders to be each 40 yards long, and about 3 yards wide, and four in number, so we ask for just one-tenth of an acre of surface. Allowing an average of 2 feet square for each specimen—some would take much more, and some much less—we should have room for more than 1000 plants. This would probably be twice as many varieties as we should wish to grow at once, but some kinds might be grown in more than one place. The selection of plants would be an important matter of detail; still more important would be the

amount of space assigned to each plant, to show it off to the best advantage, but the whole of each border should be planted at one time, and no vacant spaces left, but all vacancies noticed each spring should be at once filled with something suitable to them. The duration of each border should average perhaps four years; the borders should then be replanted in turn, one each year, leaving unmoved all such plants as continue in the same spot for many years without deteriorating, such as Oriental Poppies and Fraxinellas. This renewal of at least one of the borders each year would give the opportunity for excluding plants of doubtful merit and introducing new varieties.

There would be no difficulty in furnishing the borders. It would not, for instance, be a hard condition to make that a specimen of every hardy plant receiving a certificate from the Society should be sent to the garden; or, still better, that the plant should be proved in the garden before granting the certificate, which, of course, would be given to him who sent it first. A further question would be—what florists' flowers, if any, should be admitted to these mixed borders? Such plants as florists' Irises, as well as Pæonies and Phloxes, and all the Carnation tribe, are better when grown by themselves. Perhaps an ornamental border would hardly be complete without Delphiniums; if, however, room should be found for a very limited number of the choicest kinds, they should be from time to time superseded as fast as improvements take place. Nearly all bulbs should be excluded. If once introduced, it is hardly possible to prevent their becoming mixed with the soil in digging, and Crocuses, Snowdrops, Daffodils, and Squills coming up from an unknown depth all over the border, and defying extraction, spoil its appearance. Exceptions might be made to this rule.

Varieties improved by cultivation from specific types, other than florists' flowers, should be especially encouraged, and so should any hybrids of merit; but every unknown plant sent should be grown for at least a year in some spare piece of ground to test it before being promoted to show borders. The Editor of the *Gardeners' Chronicle* has shown how great an advantage it would be to have an opportunity of reducing garden plants to a uniform standard of nomenclature. The climate of Chiswick also affords a fair standard for testing their hardiness.

The cost of maintaining these borders would be small. On starting them we should want one or two tons of hurdle bar-iron, of various thickness, and cut into various lengths, worth about £7 a ton; after this the only material required annually would be a few pounds of soft string. But besides weeding and watering, a little skilled labour—that is, a simultaneous use of the hands and the head, combined with some knowledge of the habit of each plant—will be required once a week through the summer for tying up the tall specimens. Few but experts know the enormous difference in the effect produced by good and bad tying. It really takes very little more time to tie well than to tie badly, but it takes more rods. A clever hand can make his Michaelmas Daisies in October half cover the area of a border, where in August there seemed hardly room for their stalks to grow up amongst the other flowers.

But perhaps I have said enough for the present. I should like to have proposed the purchase of 50 tons of rough limestone, to construct a mound like those on which the Saxifrages are grown at Kew, so that a few hundred hardy dwarf alpine plants might be added to our collection; but this might be thought asking for too much at once. *C. Wolley Dod.*

— Mr. Dyer's note (p. 536), though no doubt unintentionally, and written with a different object, hardly, I think, does justice to the work carried on in Chiswick Garden. I entirely agree with what he writes about the great vinery, and the astonishing, successfully cultivated collection of Tomatos. There is the additional interest attached to this last that it is grown in the old orchard-house, built out of the

surplus from the first country show held at Bury St. Edmunds, where Mr. Fish helped so well; but my proclivities rather take me to the herbaceous border, and to the long ranges of frames containing plants for distribution by ballot to the Fellows, and alpine and other hardy plants which Mr. Barron grows so well. My Wisley garden has many interesting plants which came from these frames, and I hope that they have received an equivalent from it. I also owe to them and to Mr. Barron the lesson how to grow successfully one of the prettiest of the early flowering Saxifrages (*S. Burseriana*). The judging flowers, fruit and vegetables, grown for comparison, has been for a long time valuable work, one or two instances in past days have fixed themselves in my memory owing to not very pleasant attendant circumstances. One was where the Fruit Committee, of which I was then a member, had on a very hot day, in a long Vine-house with a very high temperature, to taste and judge Muscats, with the result, if I remember rightly, of reducing the number of names from above thirty to about six. On another occasion we had to taste above a hundred sorts of Lancashire Gooseberries. I was one of those who held out to the end, but could not bear the sight of a Gooseberry for some time afterwards! Another trial, that of Peas, I mention that I may answer a question which has often been put to me, what I have to do with G. F. Wilson Pea? After the committee had selected this as one of the finest before them Messrs. Carter's (the grower's) representative asked if he might name it after the chairman? Of course I was happy to have so pleasant an association. This is all I had to do with the Pea. Some of the trials of annuals have been very good. When I visit Chiswick the impression on my mind is how much a little more money to spend, would improve matters. As to cost of labour for the work done, this is a matter in which I have had some experience, and have often wondered how Mr. Barron could get on as well as he did with the money allowed him, I believe the explanation of this to be, that his happy disposition attaches young men to him, so that he gets a good deal of active willing service without payment. Of course we are all agreed that the garden should as speedily as possible be shaped to meet the altered circumstances, and that the being clear of South Kensington requirements, will give more power for purely horticultural work. I do not fear that Chiswick will be "made a department of Kew;" these, with so great a garden on their shoulders, are not likely to wish to have the work and responsibility of another. When comparing any part of the work of the two gardens it should be remembered that one has a good Government grant and that the other has lived in a state of chronic poverty; for, even in days when a good deal of money came in from South Kensington, most of it went back again in some form or other. Though not thinking Chiswick a suitable place for the "fortnightly" shows, I have, in common with many others, a great attachment to it, from remembering it in the days of its glory, and its great exhibitions when there were no great shows to be seen elsewhere—when the Duke of Devonshire's grounds were opened to the visitors, and when my old friend Mr. Rucker used to compete with Mrs. Lawrence for the great Orchid Medal, though even this memory is not wholly pleasant. I mention this, as it shows the class and number of the visitors. Turnham Green used to be covered with waiting carriages, and as a boy I had to hunt out ours and to go under the horses' heads, which was unpleasant. *George F. Wilson.*

— I have read with great interest all that has been said lately in the *Gardeners' Chronicle* about the future policy of the Royal Horticultural Society, and especially in respect to the development of the resources of Chiswick; and consider that the horticultural community is very much indebted to you for your advocacy of a reasonable line of procedure for the Society, and for a practicable application of the valuable resources which the Society commands in the Chiswick Garden. I am strongly in favour of making Chiswick the general place of meeting; in

fact, the "home of the Society," and, of course, of the "fortnightly meetings." I notice in the *Gardeners' Chronicle* for Saturday last that you think there should still be a divided "home," if I may so call it, with all the consequent expense attending it, for which there may be satisfactory reasons; although, in my ignorance of details, I am not aware of them. I notice your reference to the excellent accommodation for the Lindley Library and the ordinary business of the Council in the present offices in Victoria Street; and as they have been so recently acquired, and are found to suit the purpose so well, that undoubtedly forms a strong argument in favour of allowing them to remain where they are, at least for a time; but I may point out that a very little outlay would convert the office at Chiswick into a capital Council-room, and a small addition to the building would furnish all the needful accommodation for the whole management of the Society. The exhibits could be displayed to great advantage in the conservatory, or when it was not available, in one of the other large glass-houses: or, failing them, in a tent erected on the lawn adjoining the Council-room. Indeed, few places of the kind have so many facilities for accommodating a show of fruit, plants, flowers, or vegetables, either big or small. In respect to the locality, I am not aware of a better in or near London, and most certainly there is not one so generally popular among horticulturists. To all of us outside of London it is quite as accessible and as easily found as the present offices in Westminster and the Drill Hall, while there is nothing to attract us at Westminster at all comparable to what Chiswick offers, and the near chance of getting a sight of Kew, not to mention the notable private gardens, market gardens, and nurseries with which the locality is so thickly strewn. Mr. Dyer's article gives a fairly good sketch of what we should like to see done at Chiswick, but of course entirely free from all Kew interference. *X. [See also letter on p. 577. Ed.]*

FRUIT-FARMING.

READ Gladstone's advice about fruit-farming, jam, Cherries, Apples, and all the rest of it, with great interest. Why do the poor congregate in big towns, instead of doing this sort of thing in the country? So improvident! Believe there's a fortune to be made out of growing fruit and vegetables for London market, and mean to try.

Have bought a small farm. Nice light soil. Owner (who seems very anxious to get away), describes it as a "pebbly loam." More pebbles than loam, apparently. "Scratch your loam, and you find pebbles." Owner shows me orchard, paddock, cart-shed, &c., and induces me to take over his live and dead stock at valuation.

Settle at farm. Twenty miles out of town. Nearest rail $2\frac{1}{2}$ miles; cartage to railway costs more than I expected. Have to pay gardener, too; pay him more (I fancy) than either of us expected. Buy some books on fruit-farming, and feel rather proud of my position. Shall talk (to friends who don't know much about me), of "my place in the country." Hope they won't come down and find me hoeing Mangel Wurzel.

Rather disappointed with perusal of the books. Find Apples don't like a "pebbly loam." Also only a few kinds of Apples have any sale nowadays. Call in a horticultural expert, and ask him to inspect my orchard.

Expert comes. Condemns orchard root and branch. Says, "only thing to be done is to grub up these 'ere trees, and plant noo ones." Well, then, what advantage do I get out of the old trees? "None whatever," he replies; "might just as well have bought a bit of meadow." Depressed. I think of riddle—"What's the good of Acres when you can't get a Bob out of them?" Riddle depresses me still further.

Give up Apples. Plant no end of Cherries and Gooseberries. Gardener says, "important for fruit to go off directly it's ripe." Mine goes off before it's

ripe. Goes off altogether; boys steal it. Also plant Cabbages and Mushrooms. Gardener says, "A fine opening for Mushrooms." Spend a month or two buying spawn, making beds, &c. What a lot of attention Mushrooms do want! Call this "small culture," indeed! Find that the opening for Mushrooms has closed when I come to sell them. Buyers offer a price which just about covers cost of carriage to town. I ask why? They explain that "public fancy has changed; Mushrooms not in vogue—Tomatoes are."

Try Tomatos. Try 'em out-of-doors, and get 'em nipped by frost. Try again under glass. Putting up glass very expensive. Gardener suggests Grapes. After buying one or two choice varieties, find gardener doesn't understand planting them! Buy book on Grape-culture. While book coming, put Grape-plants in cellar. Cellar doesn't suit them, it seems. Finally, when book arrives, plants have to be thrown away. Result of first year's fruit-growing—loss of £300. Not making fortune yet.

"Can small farms be made to answer?" somebody wants to know. Yes, if you don't mind the answer being "No."

This year try Asparagus in corner of large field. Very successful. Think of making a "corner" in Asparagus in London vegetable market. Gardener falls in with idea, and we keep crop back for a time. Consequence is, when we offer it nobody wants to buy! Have to eat most of it myself. Get perfectly sick of Asparagus in a week. Sick of gardener too. Dismiss him. He tells me, just as he's going, that "them Pertaters has the disease awful bad, and there ain't a Cherry on the trees because of caterpillars." Winds up by saying, "There's a bill coming in for 'them Sparrergrass beds.'"

There is, indeed. Such a bill! Seems that nothing will grow on the "pebbly loam," but that first one has to "make" the soil, and afterwards grow thin gs. Always thought farms had good soil to begin with. What's the good of the Creation, if the ground has to be made all over again?

Losses increasing. As last desperate resource try jam. Erect small jam factory. Have one or two fields of Strawberries. Find a man who says he understands all about jam-making. "Get equal quantities of jam and sugar, and boil 'em up together," he says. It sounds very simple. Sugar bill enormous. When jam made, it really does look and taste very nice indeed. Send it to London. Letter in a few days from agent to say he can't sell my jam at any price. Too pure. Public like it with more "flavour" in it. And this comes of making real home-made jam. What a fool the public must be! Sell my farm at fearful sacrifice, and live in a "flat"—rather a suitable residence. Turn Tory. Understand now why poor congregate in large towns. Wonder if they've all been fruit-farmers like me, and made as much out of it? *Punch*.

TREES AND SHRUBS.

YELLOW-BERRIED YEW.

AT Clontarf Castle, near Dublin, the seat of J. E. V. Vernon, Esq., D.L., there is, amongst many other rare trees and shrubs, a fine specimen of yellow-berried English Yew, which in this neighbourhood is unique as to its golden berries. The tree is about 50 feet high, with laterals on the grass between 30 and 40 feet in length. At present the whole tree is densely covered with yellow fruit. Its beauty can easily be imagined, especially in contrast with many other varieties near it with red berries. The only difference observable in this specimen from the common English Yew is a somewhat denser growth and a lighter green colour. I have never seen or heard of a yellow-berried Yew anywhere else in Ireland, but do not know whether it is also unique in England. *W. Watson, Clontarf Nursery, Dublin*. [The yellow-berried yew originated, according to Loudon, about 1817, near Dublin. The Clontarf tree above mentioned is also described by Loudon, *Arboretum*, p. 2068. Ed.]

MAXILLARIA FUSCATA.

NOT a new, but a very rare and quaint, species, is here depicted, whose likeness most orchidists will here see for the first time. The flower from which the illustration (fig. 81) was taken was from a plant which recently flowered in the collection of Sir Trevor Lawrence, Bart., which is as famous for handsome and curious things not found elsewhere. In habit and appearance *M. fuscata* resembles a small-growing *M. grandiflora*, and its flowers are numerous produced, and in the same manner. The form of the sepals is peculiar, they being curled inwards, and partly concave at the base especially the upper one, all three being milk-white at the base, the outer portion yellow, marked with chestnut-red. The petals are white outside, and yellow within, and have also a few reddish spots, so also the curiously formed labellum. Apart from its botanical interest, it is a sufficiently showy garden plant.

VEGETABLES.

NEAL'S NE PLUS ULTRA RUNNER BEAN.

THIS is a great improvement on the old Runner—in fact, upon any other variety which I have grown or seen. Last year I gave it a fair trial against the old variety, and for productiveness the Ne Plus Ultra is far ahead of it, producing more pods, which are straighter, longer, and more fleshy. The Ne Plus Ultra is a strong grower, and the plants commence to form pods much nearer to the ground than other varieties, and the flavour and colour when cooked are all that one could desire.

This new variety will, no doubt, soon become a great market favourite, the pods, in addition to being larger and of a very fleshy nature, have not such a tendency to curl round at the ends when fully grown, and they are quite devoid of the ruddy tint, which is a drawback with the old variety. Mr. Neal, the raiser, must be congratulated upon the result of his careful selection for a number of years before introducing it into commerce, and Mr. Deverill, seedsman, Banbury (of great Union notoriety), is lucky to have had the first opportunity of distributing such an acquisition. *G. H. Richards*.

HOME CORRESPONDENCE.

Correspondents will greatly oblige by sending early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

Photographs or drawings of gardens, or of remarkable plants, trees, &c., are also solicited.

THE NATIONAL CARNATION SOCIETY.—I very much regret to observe that the executive of the National Carnation Society even proposes to take its annual shows to the Crystal Palace. No doubt the hope of getting from the Palace authorities some donation to the Society's small income is tempting, but one fails to see what connection there is between that vast place of amusement and the Carnation. I had hoped having reference to my recent advocacy of an outdoor trial of border Carnations at Chiswick; that the National Society, the assumed patron of Carnation culture in this country, would have readily supported such a proposal, and have gone a little farther and asked the sanction of the Council to hold its annual show of florists' flowers in a tent at Chiswick. The show of the pot-grown flowers in the one case and the trial of border varieties out in the garden conjointly would then have proved mutually helpful, and doubly attractive to lovers of a beautiful hardy flower. It cannot be said that the Crystal Palace is more accessible than is Chiswick. That would be an absurd suggestion. The Crystal Palace is created to furnish shareholders with dividends—the Royal Horticultural Society to promote and

foster horticulture. As to which should receive the encouragement of allied societies in such case it is not difficult to determine. *A. D.*

RHYNCHOSPERMUM (TRACHELELOSPERMUM) JASMINOIDES VARIEGATUM.—This is one of the best variegated greenhouse climbers we have, and it is very suitable to cover pillars and trellises in the conservatory. It is a plant which can be easily limited to a small space, or extended to cover a large one. I have a plant here which was planted nine years ago between two windows in the conservatory, where it now has a pleasing effect with its three coloured leaves and shoots, which keep the same colour the whole year round. It is an easily-managed plant when planted in light loam and peat; and cuttings root freely if put in sandy peat in heat. *Wm. Smyth, Basing Park, Alton*.

DIANTHUS SEGUIERI.—The Dianthus sent herewith is one of the best autumn flowers I know. I found it three years ago on the lower slopes of the hills by Riva on the Lago di Garda. It appears to me to be *Dianthus Seguieri* var. *collinus*, of Koch's *Taschenbuch der Deutschen u. Schweizer Flora* = *D. collinus*, W. K. It is certainly well worthy of cultivation, being showy, hardy, and indifferent to smoke, as shown by the way it flourishes on a sandstone rockery in my garden here. *Alfred O. Walker*. [The plant is correctly named as to the species. We prefer not to give an opinion as to varieties of this kind. It is an excellent border plant. Ed.]

THE POTATO DISEASE.—Mr. Murphy's facts in relation to the effects of the Potato disease in Ireland shows farther, if proof were needed, that there is nothing new under the sun. He thinks the saviour of our Potato crops henceforth is to be found in early ripening sorts. The same thing was said years ago; but then such is the erratic nature of the disease visitation, that early ripeners are sometimes the chief sufferers, as this year for instance, all first and second early ripeners in the South of England were by far the worst diseased, whilst the robust late ripeners were the least injured. That fine late Potato, Abundance, diseased with Mr. Murphy 60 per cent., is with me absolutely free from disease. Magnum Bonum, Chancellor, Governor and some seedlings, also, were absolutely clean; Prime Minister, Schoolmaster, and a few other strong growers, nearly so; coloured Potatoes, are in the majority of cases here, the greatest sufferers, but why it would be difficult to say. The inference drawn by Mr. Murphy from certain results in field land, that soil which has recently considerably grown Potatoes, and, as he advances, has become full of the fungus spores, is hardly supported by facts. My worst disease this year was found in ground trenched last winter, which had carried flowers for three years previously, and was, in my opinion, due solely to the heavy dressing of raw manure applied in the spring. Crops of some kinds in ground which has carried Potatoes two years in succession previously, were, of sorts above named, quite free from disease, but these had no raw manure added. The remedy for the disease is more likely to be found in deep culture with an abnegation of raw manures, and the planting of sorts of known robust growth. All the same, adverse seasons tell us from time to time that no absolute rule can be devised which shall effectually cope with disease attacks. *A. D.*

BEGONIA CLARKEI.—Apropos of Mr. Wynne's capital Begonia book, reviewed in your last issue, the history of *B. Clarkei* and *B. cinnabarina* may be of interest, as it is rather a curious one. Two unknown tubers were one day given to me by my old ally in such things, James Carter, at his shop in Holborn. They had been sent to him by a friend in Bolivia. The said tubers grew and prospered. The first to flower was *cinnabarina*, which I gave in the following year to Mr. Arthur Henderson, who exhibited it with success. The next year I presented to the Royal Horticultural Society a hundred seedling tubers of it. These were distributed, but the plant was difficult to grow, and soon went out of cultivation. Seeds were sent

home about the same time by Bridges, but I do not think any plants were reared from them. *B. Clarkei* flowered the following year. I showed it to various gardening friends, but it did not attract much notice, being leggy in habit, and rather delicate; the flowers, however, had an exquisite fragrance. Subsequently I gave almost my last plant to Mr. Harry Veitch, who made some use of it in hybridising. In the same year Sir Joseph Hooker, to whom I showed it, figured and named it after myself. *R. T. Clarke*.

LILY DISEASE.—I have always appreciated the neat drawings of interesting fungi which Mr. Worthington G. Smith produces in such large numbers; but it was with considerable surprise that I saw the figure on p. 184 of the *Gardeners' Chronicle*, and read the remarks on the disease of Lilies which was there regarded as due to the presence of a *Peronospora*. I was surprised, in the first place, because I have had an enormous quantity of material of this Lily disease through my hands during the last three years, and have devoted much attention to it, this year especially, that it seems incredible that I should have missed a *Peronospora*, had there been one present. In the second place, because the symptoms of the disease, so far as described by Mr. W. G. Smith, are just those due to the fungus I have been investigating; and when I mention that I have made more than a hundred cultures of the fungus under all kinds of conditions, besides examining some hundreds of preparations, it will be allowed that I have some claim to a hearing when I state my conviction, that the fungus in question is distinctly and positively not a *Peronospora* at all. Thirdly, because Mr. W. G. Smith's figure referred to, and the original drawing of *Ovularia elliptica* enable me to be still more definitely certain that the Lily disease is the same in all the cases, and that the (on other grounds extremely improbable) view that there are two very similar Lily diseases rife this year cannot be maintained. Moreover, the neat drawing of Mr. W. G. Smith itself bears witness to its not being a *Peronospora*—a point which, together with the paragraph about spores that "produce a convolute mass of mycelium as at n, which, on the opening of the spore, protrudes as a germinal thread;" and the sentence, "On coming to rest the zoospores in turn open and produce a germinal thread," I leave to the judgment of mycologists. No one is better aware than Mr. W. G. Smith that fungi are difficult things to deal with at sight, and it is one of the most lamentable of facts that so-called species are being introduced almost every week on crude and incomplete evidence, in just that department of botany where the greatest care is needed in getting at the truth. *H. Marshall Ward*.

PURPLE PINK LORD LYON OR PLATO.—At p. 474, in your issue of October 27, 1888, "R. D." alludes to this fine variety of early flowering and useful forcing Pink, and too much can hardly be said in its favour, so that Mr. Douglas was quite correct in pronouncing it to be the best purple Pink in cultivation. As stated by "R. D." it was raised by the late Mr. James Clarke, of Bury St. Edmunds, who was in his day a very successful amateur cultivator, as well as the raiser of many fine varieties of the Pink and other florists' flowers, including the well known Derby Day and many others. It may not, however, be known to "R. D." Mr. Douglas, and other admirers of this fine variety, that it, or, at least, one so like it in all respects that no one could perceive any difference, existed in Bury St. Edmunds years before Mr. Clarke raised from seed the variety sent out under the name of Lord Lyon. This variety in question was raised by Mr. Roland Dalton, an eminent surgeon in Bury St. Edmunds, as well as a very successful amateur florist, and the raiser of many fine varieties of the Pink, Carnation, and other florists' flowers, including his Isabella Dalton, a remarkably fine yellow Picotee, and many others, and these, with the Pink in question, which he named Plato, he generously distributed among his flower-loving friends. There is not the least doubt of Mr. Clarke having raised from seed the variety sent out under the name of Lord Lyon, and this, we believe, was done before he knew of the existence of Dalton's Plato or of the identity of the two. The writer of this had plants given him by Mr. Clarke of his Pink named Lord Lyon, and also plants of Plato given to him by Mr. Dalton, and grew them for years side by side, but could never perceive in them the slightest difference in flower, foliage, or habit of growth. Mr. Dalton is still alive, and although far advanced in years, still takes a lively interest in horticulture, and particularly in

florists' flowers, and could, no doubt, corroborate what has just been said regarding his favourite Pink, Plato, which was never, we believe, sent out by any member of the trade. *P. G.*

CERTIFICATED APPLES AT CHISWICK.—The list of Apples certificated at the recent Conference at Chiswick, whilst very interesting and valuable, must also be regarded in relation to the time any variety named in it has been in commerce. Several sorts, for instance, would hardly be exhibited by other than nurserymen, and where such get, in relation to the number of dishes shown, a good record, it may reasonably be inferred that the kind is even of greater merit than the limited number of certificates granted it indicates. Blenheim Orange, without doubt a grand Apple, and represented by no less than 170 dishes, comes out none the less so indifferently this season as to obtain only three certificates; while that splendid kind, Tyler's Kernel, out only some four or five years, and of which only a few dishes were staged, obtained as many certificates. Bismarck, again, out only about two years, gets two certificates, whilst the popular King of the Pippins, with sixty-nine dishes, gets one certificate only. Lady Sudely and Mrs. Barron, both quite new, get



FIG. 81.—*MAVILLARIA FUSCATA*: YELLOW WITH RED SPOTS.

two certificates; so also do such fine kinds as Lord Derby and Lord Grosvenor, whilst Saltmarsh's Queen, Grenadier, and Potts' Seedling relatively stand well with certificates also. It may thus be inferred that, in regard to newer Apples, we are improving in appearance. Without doubt there was a desire to deal with particularly good dishes liberally in the matter of certificates, but some would have received a much larger number had the season been more favourable to the development of form and colour in the fruits. That so many fine samples of various kinds, old and new, were produced under such adverse climatic conditions as the recent season presented must be regarded at once as the dominant feature of the show of Apples, and a triumph of British hardy fruit culture. If the Conference be repeated in some five years' time, after a really favourable season, without doubt many of the more recently introduced Apples will figure largely, but no two of the number will, I think, take higher rank than will Bismarck and Tyler's Kernel. *A. D.*

WALNUTS OF 1888.—I find that very few of the Walnuts of the present season, grown in this neighbourhood, are of any value. The fruit from many of the trees contains no kernel, but merely an empty skin; while that from other trees contains a soft kernel with an insipid taste, and enclosed in a blue fungoid-looking skin. How far is this general?

Perhaps other readers will state their experience. *J. J. Willis, Harpen-leen*.

CHISWICK (see also p. 574).—Mr. Dyer's admirable letter in your columns last week, coming, as it does, from one occupying so distinguished a position, and from one who is also a prominent member of the Council of the Royal Horticultural Society, commands the earnest attention of all horticulturists. It is the natural corollary of your recent articles upon Chiswick, and materially helps to indicate a path through which the Council may eventually push the garden at Chiswick into prominence and usefulness. It may seem, perhaps, somewhat hypercritical to find fault with an expression, or even a term, but knowing something of the "touchiness" of the gardening community, and the sentiment of jealousy which exists, lest Chiswick should become ultimately a branch of Kew and be under Kew control, I can but regret that Mr. Dyer should have alluded to Chiswick as a horticultural Kew. That Mr. Dyer felt something the same as I do, seems evident by his closing sentence, in which he strives to define what he really means by the term, and it is exactly of the nature all reading his previous observations intelligently would arrive at. What Kew is to botany, or rather is in relation to practical educational botany, let Chiswick be made in relation to horticulture. We cannot hope that it will ever become as that is—a Government establishment, and probably it is best that it never should be so, as in such case it might fail to meet the requirements of active or progressive horticulture. Apart from the term thus taken exception to, there seems to be nothing in Mr. Dyer's letter which will not meet with universal approval. The stumbling block to progress now that sheer indifference to Chiswick no longer exists, is the financial position. The Society wants money, and in view of the nobility of the object aimed at, assuming that Mr. Dyer's proposals be accepted by the Council, it does seem as if a special Chiswick fund might be raised with considerable success. Before any appeal is made to the country, however, a scheme of an exact and practical nature, not too ambitious, but still very clear and decided in character, should be prepared and published; and with such a programme it does seem that a ready response would result. Of course, it is evident that under the proposed change Chiswick could hardly be the market garden that it now is, and must of necessity submit to a large deduction from its present income as derived from the sale of marketable produce. It is to the shame of horticulture such should be the case, but Chiswick in doing so is in good company. It is very obvious that nothing but a strong determination to make Chiswick a living and practical horticultural reality, will serve to resuscitate the Royal Horticultural Society, or to place it on that elevation which it is so desirable it should occupy. If Chiswick fails to attract support it is hard to tell through what other force it is to be secured. For that reason proposals to reorganise Chiswick, should be bold and of a thoroughly practical, yet liberal nature. Possibly the large surrounding population might be made to help in the revival, and it is to be hoped that horticulturists universally would be only too ready to help the old Society to accomplish so much good work at the old home. *Spade*.

MINA LOBATA.—Referring to the remarks at p. 542 of your last issue, as to the hardness of this beautiful climber, we may mention, that during the month of August we saw it growing magnificently, the plant literally covering a large piece of trellis with its pretty orange and red blossoms. The situation was quite an exposed one in the open air, near the Hartz Mountains, in Germany; we are, therefore, of the opinion that the plant will prove hardy in every part of England. *James Carter & Co.*

THE TRADESCANTIAS.—Permit me to put in a plea on behalf of this group of hardy perennials. They are hardy, distinct in character, and remarkably handsome, continuing in flower from May until September, and doing well in any good garden soil. The type is *T. virginica*, a native of South America, producing deep violet-blue flowers, with anthers of golden-yellow. Very fine clumps of this are to be found in cottage gardens, where, being let alone, they flourish and bloom amazingly. Of the varieties there are alba major, with handsome pure white single flowers; the double purple, azurea, rich deep blue, one of the very finest, and a double form of this also; rubra, deep bright carmine, very effective and showy; a double form of this, and another named delicata, soft blush-pink. This makes

eight varieties,—a very good selection indeed. Under the name of *T. subaspera*, shot-purple, is one well worth cultivating. I have seen bunches of cut flowers of *Tradescantias*, and especially of the rich deep blue variety used in stands of bunches of cut flowers of hardy perennials; the blue, white, and carmine afford an excellent contrast. At the great Whitsun show at Manchester, where collections of hardy flowers are shown in pots, the *Tradescantias* play an important part. As a matter of course, nearly all of them have to be forced into flower, but the *Tradescantias* bear forcing well. As they grow to a height of from 12 to 18 inches, they should occupy about the third row in the herbaceous border; but ample room should be given them, as in suitable soil they make large tufts when they are well-established. As the *Tradescantias* do not appear to seed, the sole mode of propagation is by means of division of the roots. *R. D.*

WALL TREE BORDERS.—There is no rule without its exception, but in the case of wall tree borders the rule is to plant the borders perpetually with vegetables or flowers, and the exception is to find the border left unoccupied. That wall trees do not suffer appreciably under such double cropping of the borders is evident from the fact that almost universally good vegetable crops are taken off the borders, which are annually dug and manured up to within 3 feet of the tree stems, and yet trees do well and produce abundant crops of fruit. There seems to be no doubt whatever that wall trees, especially the tenderer stone-fruits, suffer far more from climatic conditions and frequent changes of temperature than from defective cultivation of fruit borders. The fact is that gardeners cannot afford, even if they would, to dispense with cropping of their wall tree borders. These, and especially the warmer ones, are invaluable for the growth of early vegetables; indeed, are indispensable. It is just possible that borders of, say, from 10 to 12 feet in width, if not thus surface moulded and cropped, would, if left constantly hard or mulched, soon become close and sour and inimical to root development (Vine borders do not become so). I know very well that at Ditton Park, Slough, with its 400 yards length of 10 feet wall, and double that length of cultivated border, the walls carrying superb trees of all ordinary kinds, and presenting, on the whole, one of the best examples of wall tree culture in the kingdom, all the borders up to within 3 feet of the trees are close cropped. Perhaps the chief secret of success there lies in the fact that prior to planting new trees, a foot depth of rubble and rough turf was always placed well below; and thus the roots were kept out of the sub-soil, and induced to run deep in the well-manured soil beneath the vegetable crop. *A. D.*

SOCIETIES.

LINNEAN.

THE first meeting of the session 1888—89 took place on Thursday evening, November 1, Mr. William Carruthers, F.R.S., President, in the chair. The following were elected Fellows of the Society:—William Overend Priestley, M.D., F.R.C.P.; John Way, M.D.; and John Evans, Esq.

Professor Bower exhibited and made remarks upon some adventitious buds on a leaf of *Gnetum gnemon*.

Mr. John Young exhibited (1) a rare bird, *Pluvianellus socialis*, unobserved for fifty years, and lately rediscovered by him in Patagonia; (2) a cluster of nests formed of lichen (*Usnea*) by a swift, as supposed of the genus *Collocalia*, from a cave in Eimes, one of the Society Islands; (3) remarkably elongated tail feathers of domestic cock (11 feet in length) artificially produced by the Japanese; (4), nest and eggs of the snow bunting (*Plectrophanes nivalis*) taken during the past summer in Scotland.

Mr. Thomas Christy exhibited a new method of transmitting light to a microscope by means of a curved rod of glass.

The Rev. R. Baron read a paper on the "Flora of Madagascar," in which he gave an interesting account of his explorations and collections in that island. In a second paper entitled, "Further Contributions to the Flora of Madagascar," Mr. J. G. Baker, F.R.S., described the principal novelties brought home by Mr. Baron, and paid a well deserved tribute to his energy and ability as a botanical explorer. The next meeting of the Society will be held on November 15.

ROYAL HORTICULTURAL.

TUESDAY, November 13.—At this meeting of the above Society there was but a small assemblage of garden productions, apart from a trade group of *Cyclamens* in bloom, the interest centering in the various business mentioned elsewhere.

Floral Committee.

Present: G. F. Wilson, Esq., in the chair; and Messrs. Rev. W. Wilks, J. O'Brien, J. Laing, J. Walker, G. Duffield, H. Herbst, B. Wynne, C. Noble, C. Filcher, J. Dominy, H. Ballantine, H. M. Pollett.

From the Royal Gardens, Kew, came a small but beautiful collection of *Nymphaea* blooms, viz., *N. lotus devoniensis*, bright pink; *N. l. pubescens*, very light rose, anthers orange-coloured; *N. lotus*, Linn., white and yellow; *N. kewensis* X, of the colour of *N. l. devoniensis*, but with more breadth in the petal; and lastly, *N. ortgiesiana*, flowers of light pink, with anthers of an orange hue.

Mr. H. Ballantine, Baron Schroder's gardener, exhibited *Lælia Victoria* (*L. crispata* X *L. Dominyi*). The petals and sepals are purplish-rose, lip dark purple—this colour running down into the lower end of the throat where it is margined with a yellow suffusion. The spike was twin flowered. Some beautiful flowers of warm-house *Rhododendrons* were shown by Messrs. J. Veitch & Sons, most of them being recent hybrids. We may mention a few of the best:—Maiden's Blush, pale flesh; Duchess of Edinburgh, scarlet; Primrose, the colour of its namesake; Aurora, salmon; Empress, crimson; President, orange; Rose Perfection, one of the choicest and with a large truss, too; Princess Alexandra, a pretty white; and Princess Christian, yellow.

Mr. W. Cummins, of The Grange, Wallington, showed *Disa graminifolia*, a slender-habited plant, with two flowers of a deep shade of blue.

From the garden of B. D. Knox, Esq., Caversham Park, Reading (gr., Mr. Lawrence), came a small species of *Oncidium*, with a small compact spike of yellow and brown flowers, which individually measured half an inch across.

Mr. G. Stevens, nurseryman, Putney, showed Japanese *Chrysanthemum* Mr. Garner, an orange-coloured flower, with florets slightly twisted; and also the better-known *Avalanche*.

A Japanese *Chrysanthemum* named Charles Delmas, of a chestnut-brown colour, was shown by Messrs. J. R. Pearson, Chillwell, Notts.

Mr. W. Warren, of Norton Gardens, Isleworth, staged 240 *Cyclamens*, in good bloom—excellent market stuff.

From Dropmore came fine cones of *Pinus Lambertiana*.

FIRST-CLASS CERTIFICATES.

Chrysanthemum Mr. Garner, from Mr. G. Stevens. *Chrysanthemum Avalanche*, from Mr. G. Stevens. *Lælia Victoria* X, from Baron Schroder.

MEDALS.

Silver Banksian.—To Mr. W. Warren, for group of *Cyclamens*.

Fruit Committee.

Present: H. J. Veitch, Esq., in the chair; and Messrs. P. Crowley, G. W. Cummins, R. D. Blackmore, J. Smith, W. Warren, S. Ford, A. Pearson, W. Marshall, J. Willard, J. Cheal, J. Roberts, and P. Barr.

Chiswick sent a collection of Beetroots, consisting of Egyptian, Pine-apple, Improved Black, Pragnell's, Nutting's Dwarf, and Veitch's Selected Red, Dewar's, Dell's Crimson and *Dracena*-leaved, all of these being from seeds obtained from Messrs. J. Veitch & Sons, Chelsea. Most of the roots appeared to be of good colour, and none was too large for ordinary use.

Ellacombe's *Victoria* and *Covent Garden Red* came from Messrs. Rutley & Silverlock, seedsmen, *Victoria* Embankment.

Dobbie & Sons' New Purple is a Beetroot of good colour and shape.

Chiswick likewise sent a large collection of Onions, amongst them being some few blood-red Onions which, in some instances, were raised from Messrs. Vilmorin & Co.'s seeds.

There was a remarkable similarity in shape and color amongst all of them, and the bulbs did not show to advantage when compared with the larger yellow and brown-skinned bulbs of more popular varieties of Onions. Southport red Globe (Veitch)

and Red Mezieres (Vilmorin) approached nearest to the perfection in form seen in the first-named. Thirty varieties or strains of varieties of light-skinned Onions were shown, a few being of French origin.

Mr. J. Willard, gr. to Lady Burdett Coutts-Bartlett, Holly Lodge, Highgate, exhibited some examples of the new vegetables mentioned in our columns recently.—*Asparagus Chicory*. By sowings made twice or thrice during late spring and summer a succession of edible flower-stalks can be obtained, the removal of the first stalk resulting in the formation of a number of others. It may be forced and blanched in the open by using a Seakale-pot to cover it; but it would seem that some kind of ventilation is then necessary to preserve the plant from the effects of damp.

Messrs. J. Carter & Co., High Holborn, showed a boxful of tubers of *Stachys tuberifera*; also some cooked tubers.

Mr. Tozer, Leamington, showed a seedling Potato, raised in 1887 from seed; it is a long, slender, white tuber.

W. Roupell, Esq., Streatham, showed sixty varieties of Apples and received a Bronze Banksian Medal. Some of the fruit was of remarkable goodness, notably Peasgood's Nonsuch Apple, Pitmaston, Duchess, and Baltet Père Pears.

H. A. Lane, Esq., Mileham, Streatham, exhibited a small collection of Apples and Pears.

A seedling Grape, the produce of a cross of Gros Colmar with an unknown variety, was shown by E. H. Woodall, Esq., St. Michael's House, Scarborough. It is a large black fruit, with crisp flesh, and indifferent flavour.

FIRST-CLASS CERTIFICATES.

Stachys tuberifera, from Messrs. James Carter & Co.

Onion Southport Red Globe, from Messrs. James Veitch & Son.

MEDAL.

Bronze Banksian.—To Mr. W. Roupell, for collection of Apples.

PORTSMOUTH CHRYSANTHEMUM SHOW.

NOVEMBER 7, 8, AND 9.—The fourth annual exhibition of the Portsmouth Chrysanthemum Society was held as usual in the capacious Drill Hall, Landport. The entries were more numerous than on any former occasion, and the show itself was a great success.

Cut Blooms.—These were the most important part of the exhibition, as many as 1800 being staged in the various classes. The competition in the class for thirty-six incurved and Japanese was close, a handsome Challenge Trophy, valued at £25, and £6 in money, being the prizes for the best stand. Messrs. W. & G. Drover, Fareham, secured the 1st place rather easily, the incurved blooms being large, fresh, and well finished; the Japanese were of good quality, and were well put up. The more noticeable blooms were E. Molyneux, Boule d'Or, M. J. M. Pigny, Fimbriatum, Madame Baco, and *Avalanche* among Japanese varieties; the best incurved were Lord Alcester, the premier bloom in the show; Golden Empress, Empress of India, and Mrs. Shipman. 2nd, Mr. W. Neville, gr. to F. W. Flight, Esq., Twyford, Winchester, with a neat collection of smaller flowers; 3rd, Mr. Penfold, gr. to Sir F. Fitz Wygram, Leigh Park, Havant.

In the class for twenty-four incurved and Japanese varieties there were seven competitors. 1st, Mr. E. Molyneux, gr. to W. H. Myers, Esq., Swanmore Park, Bishop's Waltham, with blooms in his customary well-finished style, the varieties, however, containing no novelties; 2nd, Mr. G. Trinder, gr. to Sir Henry St. Mildmay, Bart., Dogmersfield Park, who staged well; Boule d'Or in this stand, taking honours as the premier Japanese bloom in the show.

For twelve Japanese blooms, distinct, 1st, Mr. Inglefield, gr. to Sir J. W. Kelk, Tedworth, Marlborough, with massive clean bloom, E. Molyneux and Ralph Brocklebank being the best. Mr. E. Molyneux was a close 2nd.

For the same number of incurved varieties the last named exhibitor was 1st, with blooms of medium size, fresh, and well finished; 2nd, Messrs. Drover, whose blooms were marked by a slight want of freshness.

For twelve blooms each of Mrs. G. Rundle, Mrs. Dixon, and G. Glenny there were three competitors. The last-named exhibitors were 1st, with symmetrical and fresh blooms.

For the best twelve reflexed blooms, in not less than eight varieties, Mr. W. Woodline, gr. to Captain Boyd, Emsworth, was 1st, the blooms being of medium size.

Messrs. Drover were easily victors in the large-flowered Anemone class against five others; the blooms were conspicuous by the fullness of their centres and their capital colour. The same firm had the best twelve Japanese Anemone blooms we have so far seen this season, notably Fabian de Mediana, Marjoriline, and Jeanne Marty.

Messrs. Neville and Russell's pompons were attractive for the quality and variety of the blooms shown.

A new class was formed for twelve bunches of fimbriated varieties, three blooms to a bunch. The exhibits of these made an attractive feature, especially the winning stand of Mr. Hatch's, Victoria Park. Chardonnet is a dark purple variety which showed to great advantage. Mr. Agate, Havant, was 2nd.

For growers on Portsea Island a Silver Cup was offered for twenty-four blooms in equal numbers of incurved, Japanese, reflexed, and Anemone varieties. The much coveted prize was taken by Mr. Hatch.

The best two blooms in separate classes were shown by Mr. E. Molyneux, who had fine examples of E. Molyneux and Empress of India.

The display made by the amateurs was extensive and the rivalry very keen.

Plants.—Eight specimens, one half to be Japanese and the other to be either incurved or reflexed at the option of the exhibitor.—Mr. W. Joy, nurseryman, Shirley, Southampton, was well to the front with very fine examples measuring 4 feet in diameter, neatly trained, and well flowered; 2nd, Mr. E. Wills, gr. to Mrs. Pearce, The Firs, Bassett, Southampton, with neat and smaller plants.

Twelve competed in the class for a group of Chrysanthemums arranged in a space of 50 square feet, and so very meritorious were the exhibits that six awards were made, the 1st going to Mr. N. Gate, gr. to G. Cook, Esq., Gosport, whose blooms were exceptionally fine, although the arrangement of the plants might have been improved on. Mr. Hatch was 2nd, with plants artistically arranged.

Fruit.—The exhibits under this head were, on the whole, creditable, and what was lacking in quantity was made up in quality. For six bunches of black and white Grapes Mr. E. Molyneux was easily 1st, with Alicante and Muscat of Alexandria. Mr. Penford, to whom was awarded the 2nd prize, depended upon Barbarossa and Muscat of Alexandria, and the latter variety was rather small in the bunch.

Mr. W. Tait, gr. to General Napier, Cosham, was 1st, for two bunches of black Grapes, the sort staged being Alicante, good both in bunch and colour.

Mr. Covell secured 1st honours for the same number of bunches of white Grapes.

A bunch of Trebbiano weighing 5 lb. 12 oz. secured the 1st prize for Mr. Molyneux in another class, and one of Black Alicante of 4 lb. in weight gained the 2nd prize for Mr. Smith, gr. to Mrs. Learmouth, Cosham.

Hardy fruits were well shown by Mr. J. Watkins, Wellington, Hereford; Mr. Jacob, Petworth; and Mr. Trinder.

The vegetables of Mr. J. Cox, gr. to R. K. Wyndham, Corhampton House, Bishop's Waltham; and those of some others were excellent.

BATH CHRYSANTHEMUM SHOW.

NOVEMBER 7 AND 8.—The show—the fourth of the season—which the Bath Floral Fête Committee held in the Assembly Rooms on the above date, must be classed as one of the best Chrysanthemum shows held in Bath.

Plants.—The Veitch Memorial Medal and £5 in money, offered as 1st prize for eight plants, four Japanese and four large-flowered varieties (Anemone excluded) on one stem, was well won by R. B. Cater, Esq.; Rev. E. Handley was a good 2nd. In the class for six distinct varieties (Japanese and Anemones excluded), Mr. W. S. Tredwell was 1st. The flowers on the plants shown in this class were not fully developed. Mr. E. B. Titley had the best four plants of pompons pyramidally trained. Mr. R. B. Cater had the best specimen (Anemone excluded) showing a Mrs. G. Rundle, 7 feet high, in fine condition, but the flowers were hardly expanded. Dr. Budd was 2nd with the same variety. Mr. E. B. Titley had the best specimen Anemone, showing George Sander, Mr. T. Joly being 2nd with Fleur de Marie, which promised to be a splendid specimen a week hence. Mr. W. J. Brown was 1st for a flat-trained plant, showing a good plant of Mrs. G.

Rundle, 6 feet over; Mr. Cater being 2nd with the same variety. Mr. W. J. Brown was awarded a Silver Medal for the best Chrysanthemum plant in the show for a finely-flowered Mrs. G. Rundle.

Groups.—Mr. R. B. Cater had the best group of Chrysanthemum plants arranged for effect. Messrs. Cooling & Sons were a good 1st for a group of miscellaneous plants put up for effect. Mr. A. A. Walters had the best six table plants, as well as the best dozen Cyclamens, showing well in both classes. Mr. W. Pumphrey had the best six Bouvardias; and Mr. Cater had the best six plants of Orchids, staging good plants, including *Oncidium tigrinum* and *Odontoglossum Sanderianum*, with excellent spikes of flower.

Cut Flowers.—With twenty-four blooms, distinct varieties, (Anemones and Japanese excluded) Mr. John Aplin, gr. to Mrs. B. Baker, Hasfield Court, Gloucester, was 1st, being closely pressed by Mr. Ward, Longford Castle, and Mr. Horsefield, Heytesbury. Mr. Aplin's best blooms were Queen of England, Alfred Salter, Lord Wolsley, Lord Alcester, Golden Empress, Pink Venus, White Venus, and Mr. Bunn. Mr. Ward's best bloom was Empress of India, which won the Silver Medal given by the National Chrysanthemum Society for the best bloom in the show. Last year this medal was awarded to a bloom of Lord Alcester in the Longford stand. Mr. Horsefield was 1st, with twelve blooms of a like description to those staged in the preceding class with large solid blooms of the most popular varieties, Lord Wolsley and Golden Empress being especially good. Mr. Ward was a very close 2nd, and Mr. A. Cole a good 3rd. Six lots were put up. Major Clark and Dr. Budd were 1st and 2nd for stands of six blooms, showing well. With twenty-four blooms of Japanese, distinct, Mr. Lucas, gr. to Wilfred Marshal, Esq., Taunton, was 1st, Mr. Ward a good 2nd. Mr. Lucas' best blooms were Boule d'Or, a grand bloom with very long richly coloured florets; Baron de Prailly, Val d'Andorre, J. K. Pigny, Avalanche, W. Robinson, and Elaine. Mr. Ward's best blooms being Grandiflora, E. Molyneux, Duchess of Albany, and Thunberg. With twelve blooms, Mr. Lucas was 1st, Mr. Aplin 2nd, both showing well. Mr. Ward had the best twelve blooms of large flowered Anemones, showing Fabian de Mediana, Madame Clos, Sœur Dorothee Souille, Acquisition, &c.

Miscellaneous.—Primulas were shown well by Mr. W. S. Tredwell who was 1st, staging large well flowered plants. With six plants, any colour, single flower, Mr. J. Inwick was 1st, and Mr. Inwick was also 1st for four doubles. Mr. E. E. Bryant was 1st for six ornamental foliage plants, his best being Crotons.

Fruit was plentiful and of first-rate quality, Grapes being shown in fine condition and finish. Mr. Taylor, gr. to Mr. Alderman Chaffin, Bath, was 1st, for four bunches, showing two grand clusters of Muscat of Alexandria, weighing about 3 lb. each, well coloured but slightly shrivelled; Alicante and Lady Downe's, splendidly coloured. 2nd, Mr. J. Jones, showing two well coloured Gros Colmar, one fairly well coloured Alnwick Seedling, and one Lady Downe's.

For three bunches of black Grapes Mr. Pymm, gr. to Mrs. Goldsmith, Trowbridge, was 1st, staging unusually large bunches of Gros Colmar, splendidly coloured; Mr. Jones being 2nd, with good examples of Black Alicante.

With three bunches of white Grapes, Mr. Taylor and Mr. Green, gr. to Earl Cowley, were 1st and 2nd, both showing Muscats.

Mr. Pratt, gr. to the Marquis of Bath, Longleat, was 1st for a collection of fruit, showing large well coloured bunches of Alicante and Muscat Grapes, Late Admirable Peaches, Coe's Golden Drop Plums, &c.

Messrs. Pragnell, Weaver, E. Hall, Pinder, Payne, and Aplin exhibited excellent examples of Pears and Apples; and the first-named gardener was very successful with vegetables.

CRYSTAL PALACE.

NOVEMBER 9 AND 10.—This was the last Chrysanthemum show of the year at this place. The blooms were generally of good quality, and the competition close in some cases.

Cut Blooms.—In the large class for forty-eight cut blooms, twelve incurved and twelve Japanese, Messrs. W. & G. Drover, Fareham, led, with uniformly good blooms; the Japanese were of fine size too, but the incurved were not very large, but even and clean, the

most conspicuous blooms being Belle Poule, Ralph Brocklebank, E. Molyneux, Boule d'Or (deep colour), J. Delaux, Lord Alcester, Golden Empress, Barbara (fine), Prince Alfred, and Empress Eugenie. Mr. J. Horsefield, gr. to Lord Heytesbury, Heytesbury, Wilts, was 2nd, also with good blooms; Jeanne d'Arc was very fine here, and Barbara, Lord Alcester, Jardin des Plantes, Queen of England, Val d'Andorre, Carew Underwood, E. Molyneux, and Belle Paule. Messrs. W. Ray & Co., Sittingbourne, were 3rd, having Jardin des Plantes, Refulgens, Roi de Japonais, and Criterion as their finest.

Mr. M. Sullivan, gr. to D. B. Chapman, Esq., Downshire House, Roehampton, was the leader for eighteen incurved blooms, distinct, with rather small but fair samples, Mr. Bunn, J. Salter, Empress, and Jardin des Plantes were shown. 2nd, Mr. A. G. Hookings, gr. to Sir H. Thompson, West Moulsey, who followed closely, having Lord Alcester, Cherub, Empress of India, and Jardin des Plantes as his best.

There were fifteen entries of six blooms (one variety), Mr. J. Doughty, gr. to Mrs. Tomlin, Angley Park, Cranbrook, leading, with fine blooms of Golden Empress, of large size; and Mr. Hewett, gr. to H. B. Mackeson, Esq., Hythe, was a close 2nd, with Lord Alcester, in fine form.

The best eighteen Japanese were from Mr. W. Packman, gr. to C. E. Shea, Esq., The Elms, Foot's Cray, Kent, who had bright even blooms of fair size, embracing the usual most popular varieties; a very close 2nd was Mr. T. Glen, gr. to Mrs. Montifore, Worth Park, Crawley, with uniformly bright blooms slightly smaller than the foregoing. Messrs. W. & G. Drover were the most successful (out of fourteen competitors) in the class for six Japanese, one variety, with fine blooms of Boule d'Or, and Mr. Doughty with Belle Poule, very finely coloured, was 2nd. Messrs. Drover were also 1st in the three classes for reflexed, Anemone and Japanese Anemone blooms, showing well in each instance.

For twelve pompons and also for twelve pompon Anemones, Mr. Duncan, gr. to C. T. Lucas, Esq., Warnham Court, Horsham, was placed 1st with bright flowers of good size in both cases, and Mr. E. Chadwick, gr. to E. M. Nelson, Esq., Hanger Hill House, Ealing, was similarly placed, leading easily, for twelve single varieties, staging a very pretty stand of blooms.

Pot Plants.—These were well shown on the whole, but the competition was not close. Messrs. Davis & Jones, Camberwell, had a neat group of well-flowered incurved varieties, in which class they were the only exhibitors, and the 1st place was justly accorded. For a group of Japanese flowered plants, Messrs. J. Laing & Sons, Forest Hill, S.E., led well with a number of large flowered plants, in which besides the popular varieties there was Mons. Bernard, a long petalled reflexed Jap., after the style of Madame de Sévin, but of deeper colour. Among other recent introductions Messrs. Davis & Jones were 2nd, with the ordinary varieties in smaller flowered specimens. The best group from an amateur was that of Mr. F. Ball, gr. to Sir H. Doulton, The Woodlands, Tooting Common, with tall grown plants bearing large, bright, and clean blooms—Lord Alcester, Empress, and Peter the Great being prominent. Mr. J. Gravett, gr. to Dr. Hetley, Upper Norwood, was a fair 2nd with several good Japanese specimens.

Six trained incurved plants were very good from Mr. E. Cherry, gr. to Mr. Gabriel, Norfolk House, Streatham, who had bush-trained plants, strong and well flowered, Golden Empress and Queen of England being the best, and the same exhibitor led again for six trained Japanese, and for six trained pompons, with low trained plants in both instances. Of the Japanese, L'Île des Plaisirs, Lady Selbourne, and Cossack were the best; all, however, being strong, well-flowered, and healthy. Mr. W. Clarke, gr. to J. H. Lile, Esq., Devon House, Brixton Hill, was 2nd for Japanese with very fine plants of Margot and Source d'Or.

Primulas.—Mr. J. Rodbourn, gr. to Baroness Heath, Coombe House, Croydon, led for twelve Chinese Primulas red, and for the same number of doubles, having well-flowered plants. Mr. A. Carter, gr. to Alderman Evans, Ewell Grove, Ewell, Surrey, occupying the 1st place for white Primulas, with the best lot of all, the plants bearing large flowers of good clean colour.

Special Prizes.—These were offered by Messrs. Sutton & Sons, Reading; Messrs. J. Carter & Co., High Holborn, London; and by Mr. C. Fidler, Reading. Mr. W. H. Smith, Horpit Warborough, Shrivvenham, took the leading prizes offered for Potatoes by Messrs. Sutton, with clean and sound

tubers; and Mr. Cherry and Mr. G. Goldsmith, grs. to Sir E. G. Loder, Bart., Flore, Weedon, were 2nd in different classes, the last-named leading for Onions with large bulbs but rather soft. Mr. Ridgewell, Histon Road, Cambridge, took both the 1st's offered by Mr. Fidler for Potatoes, showing sound healthy tubers.

Non-competing Exhibits.—A centre of attraction here was a large collection of Apples grown in Nova Scotia (Port William), and exhibited by Messrs. Nothard & Lowe, Tooley Street, London. They were samples of fruit now arriving for sale in the English market, and were remarkable for their high colouring; the following were the leading varieties:—Gravenstein, Willoughby, Yellow Bellefleur, King Pippin, Blenheim Orange, Two Ounce Pippin, Emperor Alexander, Baldwin, Bailey's Golden, Ribston Pippin, Pennock, and Northern Spy.

An extensive collection of Potatoes was sent from Messrs. Sutton & Sons, embracing a large number of varieties, all well-grown and clean.

Mr. Fidler also sent a collection of Potatoes, and Messrs. Sutton, and also Messrs. Carter had *Stachys tubifera*.

Messrs. H. Cannell & Sons, Swanley, Kent, had Dahlias, Pelargoniums, and Begonias.

Apples were shown by Messrs. J. Laing & Sons, and by Messrs. J. Cheal & Sons, Crawley, both having clean and well-grown fruits. Messrs. Cheal also had Pears.

HITCHIN CHRYSANTHEMUM.

Nov. 9.—This Society held its third annual exhibition of Chrysanthemums in the Corn Exchange on Nov. 9. There was a fair amount of entries; and perhaps the best lot of blooms that has ever been shown at Hitchin was on this occasion put up by Mr. R. Adams, gr. to G. B. Hodson, Esq., Frogmore Hall, Hertford. Mr. J. Kipling, gr. to the Earl of Lytton, Knebworth, also showed well.

For forty-eight incurved, 1st, Mr. Adams; 2nd, Mr. Kipling. For forty-eight Japanese, 1st, Mr. Adams; 2nd, Mr. Springham, gr. to J. H. Tuke, Esq., Hitchin. For twenty-four Japanese, Mr. J. Anning, gr. to W. S. Brown, Esq., Digswell House, Welwyn, was 1st. For twelve incurved, 1st, Mr. Jos. Upchurch, gr. to T. S. Lucas, Esq.; 2nd, Mr. Anning. For six trained specimens in pots, Mr. Springham was 1st, Mr. Upchurch 2nd. For three trained specimens, Mr. Millard, gr. to W. Ransome, Esq., was 1st. For twelve Japanese, Mr. E. Osman was 1st, and Mr. Sharp 2nd.

In the amateurs class, Mr. Wm. Abbiss was 1st, with three specimens; Mr. W. G. P. Clark, was 1st for nine incurved; Mr. E. Catton, 2nd. Mr. Wm. Abbiss was 1st for six incurved; Mr. A. E. Halsey, 2nd. Mr. G. P. Clark was 1st with nine Japanese; and Mr. W. Abbiss, 2nd.

Groups.—These were nicely arranged, and most of the plants were loaded with fine flowers—1st, E. Mr. Osman; 2nd, Mr. W. Springham.

Medals.—Mr. Adams was awarded the Silver Medal for the best bloom in the show. There was some difference of opinion as to which should take it, the Japanese or the incurved; it was in the end given for a nice bloom of Empress of India. Mr. Springham had a similar award for the best plant in the show; and for the best bloom in the amateurs class, Mr. W. G. P. Clark took the Bronze Medal for Golden Emperor. *A Correspondent.*

TWICKENHAM HORTICULTURAL.

NOVEMBER 13.—Favoured with almost summer-like weather this show was held in the Twickenham Town Hall, on the above date. The entries showed some falling off, but the exhibits were excellent. Amongst material not for competition were an interesting collection of *Lycastes* and *Cypripediums*, backed by African Marigolds in pots, sent by Mr. Henry Little, which received high commendation. Mr. Bates, Poulett Lodge Gardens, had a fine *Cypripedium* insigne, some decorative plants, and a fine lot of blooms of Japanese and incurved Chrysanthemums, one flower of Maiden's Blush being half blush and half rich yellow. Mr. Howard, Teddington, exhibited four fine plants of *Calanthe vestita*, carrying numerous spikes of bloom. Messrs. Hooper & Co., Twickenham, had a box of twenty-four bunches of *Gloxinia* flowers from late-sown seedlings, wonderfully rich in colour and marking—a very fine strain.

Mr. Fordham, a local florist, showed a group of

Chrysanthemums faced with foliage and flowering plants, and specially pleasing, a quantity of *Pernettyas* in pots, very fully berried.

Mr. Walker, of Whitton, and Mr. Warren, of Isleworth, both exhibited plants of their fine strains of *Cyclamen* in bloom. The latter showed fully a hundred plants in numerous colours.

Very remarkable as well as interesting were the fine collections of Apples and Pears, with vegetables, shown by Mr. Walter Mann and Mr. W. Poupart, market growers, of Twickenham. Mr. Mann had superb Market Red Celery, Cauliflowers, Beet, Tomatos, &c., and many dishes of fruits. Mr. Poupart showed fifty dishes of Apples, all leading market kinds, and twenty-five sorts of Pears, as also some of his famous Celery.

In the competitive classes the 1st prize for an arranged group of plants, here neatly faced with Ferns, fell to Mr. J. Parsons, gr. to T. Twining, Esq., Twickenham, whose grouping was as excellent as his flowers were good. Mr. Street, gr. to Lady Freake, was 2nd, his plants having capital flowers, being too crowded, and Mr. Waldie, gr. to J. Bigwood, Esq., M.P., was 3rd. The best trained plants came from Mr. Fallows, gr. to the Misses Vaughan, who had Mrs. G. Randle, George Glenny, Lord Wolsley, and L'Île des Plaisirs. Scarlet Pelargoniums, Chinese Primroses, and *Cyclamens* were moderate in quality.

Table plants were excellent, the best six coming from Mr. Parsons. Mr. Filsell was placed 1st, with a table-stand of flowers, but Mr. W. Brown's seemed to be the more elegant. A very charming stand of berries and hardy foliage from Miss Redspey, St. Margarets, took 1st place in its class.

The chief places in the cut flower competitions were taken by Mr. Coombs, gr. to W. Furze, Esq., Teddington, who was in form with incurved flowers, and Mr. Munro, gr. to J. D. Paul, Esq., Twickenham, who was equally strong in Japanese. Mr. Coombs was 1st, and Mr. Munro 2nd, with twenty-four flowers, half incurved, and half Japanese. Mr. Coombs also came 1st with twelve fine incurved flowers, Mr. Davis being 2nd; and Mr. Coombs also took 1st place in the class for six incurved, one variety with purple flowers of Queen of England, Mr. Munro coming 2nd with White Empress. Mr. Munro was 1st for twelve Japanese, in two classes, all beautiful flowers; and also had the best six of one variety in grand flowers of Boule d'Or.

Of fruits, Mr. Street had the best Grapes in Alicante. Mr. Hardham, fruiterer, showed grand Gros Colmar, but not for competition. Mr. Smith, Whitton Park Gardens, had the best four dishes of Apples; Mr. Fitzwater, gr. to H. Labouchere, Esq., M.P., being 2nd—all capital samples. Mr. Davis was 1st for four dishes of Pears, with Mr. Garrod, gr. to J. R. Tindall, Esq., 2nd.

The best collection of vegetables, really capital samples, came from the Metropolitan Police Orphanage, Mr. Stroud, Superintendent, being the exhibitor.

MOLESEY CHRYSANTHEMUM SHOW.

The annual exhibition under the auspices of the East and West Molesey and Hampton Court Chrysanthemum Society was held at the Conservative Hall, Walton Road, East Molesey, on Tuesday and Wednesday, Nov. 13 and 14. The finest group of Chrysanthemums was shown by Mr. Hookings, gr. to Sir H. Thompson, while Mr. Peters, gr. to A. Keeling, Esq., was next best. In the class for smaller groups Mr. Brazier, gr. to H. Jenkyns, Esq., came off 1st; Mr. A. Masters, gr. to R. Earp, Esq., 2nd; and Mr. Tarrant, gr. to Mrs. Gilliot, 3rd. The class for twenty-four blooms, distinct, (twelve incurved and twelve Japanese) produced keen competition. Mr. Hookings was again successful, Mr. Turner, gr. to F. Francis, Esq., taking 2nd place. The former collection included fine specimens of Maiden's Blush, Japonais, Ralph Brocklebank, Golden Empress of India, and Prince of Wales. Mr. Turner's two dozen had among them commendable specimens.

Mr. Hookings was also the winner of the 1st prizes in the class for the best six incurved blooms of one variety, and that for Japanese ditto. Empress of India was the winner of the first-mentioned; and of the Japanese, Madame C. Audiguier.

The amateur and cottager's classes produced some interesting exhibits; and some fine fruit was shown, Messrs. Turner, Gower, Brazier, and Hayes being to the fore in the latter department.

Several local gardeners lent plants, &c., not for competition.

BRIGHTON AND HOVE CHRYSANTHEMUM.

NOVEMBER 13 AND 14.—The above exhibition was, without doubt, the best the Society has ever brought together, the flowers and plants being of great merit, and strong competition ruled throughout.

Cut Blooms.—In the highest class, that for forty-eight, half to be Japanese, and half incurved, W. & G. Drover, florists, Fareham, were 1st—Edwin Molyneux, Avalanche, being amongst the fine Japanese varieties shown; whilst the incurved contained the usual fine varieties. This was a good all-round exhibit, with scarcely a weak bloom in it. Mr. Hopkins, gr. to Robert Thornton, Esq., High Cross, Framfield, was 2nd, his best blooms being Thunberg, Carew Underwood, and Belle Etoile; and John Salter, Bronze Queen, and Golden Empress in incurves. There were eight competitors.

For twenty-four incurved, the last named exhibitor was 1st, with even blooms, John Salter being again in fine condition; 2nd, Mr. M. Russell, gr. to Dr. Lewis, Henfield. The same number competed as in the former class.

Twenty-four, Japanese.—1st, Messrs. Drover, with another extra fine lot of blooms; the 2nd prize going to Mr. F. Glen, gr. to Mrs. Montefiore, Worth Park, Crawley, for an exhibit scarcely inferior. There were seven entries.

For twelve incurved, 1st, Mr. Fowler, gr. to Mrs. Hall, Henfield, with very even flowers. Nine competed. The same exhibitor was also the winner for twelve Japanese with another extra strong lot. Thunberg was very fine—Mr. Jupp, gr. to G. Boulton, Esq., Torfield, Eastbourne; and Mr. Snow, South Park, Wadhurst, taking two respective 2nd prizes.

For six incurved, Mr. Hall was again 1st, and for a similar number of Japanese Mr. Snow was 1st, his Duchess of Albany and Edwin Molyneux being extra fine.

Messrs. Drover took another 1st for six reflexed blooms in the best known varieties.

Mr. Glen won the 1st for six Japanese, any variety, with grandly developed blooms of Mdle. Lacroix. Mr. A. W. Fieldwick, an amateur grower, also showed well in this class.

For twelve pompons Mr. Russell was a strong 1st, with remarkably fine blooms in trusses of three each.

With an excellent bouquet Mr. Miller, Southdown Nursery, Shoreham, stood 1st, with an arrangement devoid of formality. Mr. Geere, Hurstpierpoint, was a good 2nd. There were thirteen entries.

For table decorations in Chrysanthemums, Mr. Kent was 1st, and Mr. Spottiswood, gr. to Mrs. Duddell, Queen's Park, Brighton, 2nd.

The several classes provided for amateur growers brought forth many examples, scarcely inferior to those shown by professional gardeners.

Plants.—For four dwarfs, 1st, Mr. Meachen, gr. to Mrs. Armstrong, Withdeane, with a well-grown lot in abundant bloom, the best being Source d'Or and Bouquet Fait; 2nd, Mr. Hill, gr. to M. Wallis, Esq., Withdeane, who had a fine plant of Princess of Wales.

Mr. Hill was 1st for a fine set of four standards; Roseum superbum, Mrs. Dixon, and Peter the Great were extra good. 2nd, Mr. Scutt, gr. to G. T. Jenkins, Esq., Burgess Hill, for four that were very freely flowered, but scarcely good enough in quality.

Mr. Meachen again won with four capital pyramids, and Mr. Hill for a single specimen of the same.

With groups there was also a strong competition. In the larger class (100 square feet), arranged in a semi-circle, Mr. Bunney, gr. to W. Campion, Esq., Danny Park, Hurst, came off victorious, with an effective group, composed of plants that displayed the best of culture—Source d'Or, Mdle. Lacroix, Val d'Andorre, and Mrs. Geo. Rundle were here used to the best advantage; Mr. Taylor, gr. to Major Way, Wick Hall, Hove, following, with a capital exhibit of the best decorative kinds, including, besides those already mentioned, good plants of Cullingfordii.

In the smaller class of groups (60 feet), Mr. G. House, gr. to F. Mowatt, Esq., Withdeane Hall, was 1st, and staged many plants therein with extra fine blooms; 2nd, Mr. W. Collins, gr. to R. Clowes, Esq., Hassocks, with a group containing an abundant display of bloom.

Pompons in six varieties were shown in good order and abundantly bloomed by Mr. Godby, gr. to Dr. Moore, Burgess Hill; and Mr. Bunney was again 1st, this time for twelve plants in 6 inch pots with excellent examples of decorative plants.

Primulas, single and double, were shown in large

numbers. For the former Mr. Wickham, gr. to J. Humphrey, Esq., Keymer, was 1st, with twelve whites in capital order.

For double kinds, Mr. Tullett, foreman at the West Brighton Nurseries (Mr. W. Miles), was placed 1st, with twelve grandly flowered plants; Mr. Bunney being a good 2nd.

For twelve Cyclamens, Mr. Tullett was an easy winner, with very floriferous examples of the best strains.

Mr. Meachen secured a 1st for six pots of Mignonette among several good exhibits.

With six table plants, Mr. Snow gained the 1st award, with plants of medium size; Mr. Turner being 2nd, with very light examples.

Fruit: Grapes.—Muscat of Alexandria was shown in fine condition by Mr. Goldsmith, gr. to Mrs. C. A. Hoare, Kelsey Manor, Beckenham; being followed by Mr. Spottiswood, with larger bunches, but not quite so well up in colour.

Black Grapes were best represented by Black Alicante, the 1st award going to Mr. Buxton, gr. to J. Butler, Esq., Withdrane; Mr. George Miles, Victoria Nursery, following him closely. Some well-kept Black Hamburgs were shown by Mr. Godby.

Mr. Goldsmith was 1st with four dishes of Pears, showing fine examples of Pitmaston Duchess, Duchesse d'Angoulême, Durondeau, and Beurré Diel; Mr. Cornwell, gr. to F. G. Courthorpe, Esq., Lewes, being a good 2nd.

With dessert Apples, Mr. Goldsmith was 1st, showing standard varieties, in good form. Messrs. Goldsmith, Duncan, and Bunney showed good fruit.

Vegetables.—These were shown in large numbers, and of first-rate quality, the 1st prize winners being Mr. W. May, gr. to G. Neame, Esq., Littlehampton, who was strong in roots; and by Mr. Goldsmith, who had a good all-round collection in the class for Messrs. Sutton & Sons' prizes; in the latter class Mr. Spottiswood staged a capital lot, and secured the 2nd prize.

Miscellaneous Exhibits were shown in good numbers, the chief of which were a group of large decorative plants, in which some finely grown Tree Ferns were most conspicuous. These were finished off with small flowering and foliage plants, and formed the central point of decoration in the dome on the orchestral platform, and came from the West Brighton Nurseries, being arranged by Mr. Longhurst.

Messrs. Balchin, of Cliftonville and Hassocks, had groups of finely-grown Ericas, foliage plants, and some forty or more dishes of the best varieties of Apples of Sussex growth.

Messrs. Cheal & Son also showed from their Crawley Nurseries between eighty and ninety dishes of Apples and Pears of the best kinds.

Some fine Grapes and a huge cross in white Chrysanthemums came from Mr. W. Miles; the cross, being arranged on black velvet, produced a splendid effect.

The Colonies were represented by many fine dishes of Apples, remarkable for their colour; these were exhibited by Mr. Starr, of Port William, Nova Scotia.

DEVIZES CHRYSANTHEMUM.

NOVEMBER 13.—This took place as usual in the Corn Exchange, in connection with the annual bazaar in aid of the Benevolent Society, the exhibits being as usual admirably arranged by Mr. T. King, of Devizes Castle Gardens. The exhibition has to be kept within certain bounds, but the plants were very fine indeed, and the cut flowers, both incurved and Japanese, highly finished.

Plants.—The best four specimens, grandly grown and flowered, came from Mr. Hale, gr. to C. N. May, Esq., The Elms, Devizes, the varieties Empress of India, Mrs. Dixon, G. Glenny, and Lord Alcester; 2nd, Mr. Clack, gr. to C. E. Colston, Esq., Roundway Park, Devizes, his best specimens being Barbara and Mrs. G. Rundle. Mr. May was also 1st with a plant each of Mrs. G. Rundle, Mrs. Dixon, and G. Glenny, superbly grown and bloomed. Mr. Colston being 2nd. With four specimens of Japanese varieties Mr. May was again 1st, having admirable grown and flowered specimens of *Blanche Fleurie*, *Bouquet Fait*, *Soleil Levant*, and *Madame Bertha Rendatler*. 2nd, Mr. Colston, his two best specimens being *Madame Sévin* and *Madame Bertha Rendatler*. Mr. May had the best four specimen Pompons; the varieties being *Mdlle. Marthe*, *Golden Mdlle. Marthe*, *Sour Melaine*, and *Black Douglas*. 2nd, Mr. Colston.

Cut Blooms.—There were six collections of twenty-

four blooms of incurved varieties in eighteen varieties, and here Messrs. W. and G. Drover, nurserymen, Fareham, were placed 1st, having large and finely finished flowers of Lord Alcester, Alfred Salter, Empress of India, Queen of England, Golden Queen, Lord Wolseley, Jeanne d'Arc, Princess of Wales, Nil Desperandum, and Mr. W. Shipman. 2nd, Mr. J. Horsefield, gr. to Lord Heytesbury, Wiltshire, who also had some excellent blooms, his best flowers being Empress of India, Jeanne d'Arc, Golden Empress, Queen of England, Bronze Queen, Mrs. W. Shipman, Mrs. Heale, *Jardin des Plantes*, and Alfred Salter.

The best twelve varieties, distinct, came from Mr. W. Thomas, gr. to Wilfrid Marshall, Esq., Taunton, a very good lot, the leading varieties Golden Queen, Jeanne d'Arc, Baron Beust, Lord Wolseley, &c.; 2nd, Mr. G. Ingleford, gr. to Sir J. W. Kelk, Bt., Tedworth, Wilts.

Mr. May had the best twelve shown with 4 inches of stem and foliage, having excellent examples, some of the varieties already named, including Mr. Bunn. There was no other exhibitor in this class.

Mr. May also exhibited the twelve best Anemone-flowered varieties, not less than four varieties, showing good blooms of Lady Margaret, Fabian de Medina, Sœur Dorothee Souille, Gluck, and Mrs. Pethers.

The cut blooms of Japanese varieties were numerous and very fine. Messrs. W. & G. Drover were again 1st, with finely finished blooms of Marguerite Marrouch, Gloriosum, Belle Paule, Jean Delaux, Edwin Molyneux, Ralph Brocklebank, Avalanche, &c.; 2nd, Mr. G. Inglefield.

Mr. May also had the best twelve reflexed varieties, showing some very fine blooms of Amy Furze, Chevalier Damage, King of Crimsons, Cullingfordi, Mr. Forsyth, and Dr. Sharpe; 2nd, Mr. W. Allen, The Gardens, Shallowfield Park, Reading.

Baskets of hardy autumn foliage, including berries, were a charming feature, a goodly number of baskets being prettily arranged. The best came from Mr. Thomas Lewis, Devizes; Messrs. K. J. Medicott, Devizes, being 2nd.

Primulas, both single and double-flowered, formed a pleasing exhibition of themselves, but space forbids our mentioning the names of the exhibitors of these.

THE BRITISH FRUIT GROWERS' ASSOCIATION.

A MEETING of the above Association was held in the Royal Aquarium, on Thursday last, November 8, to discuss the subject of railway rates in relation to fruit transit. Mr. T. F. Rivers took the chair at 5 P.M.

In the course of a few introductory remarks the Chairman congratulated the Association on the encouraging success which has attended its formation. We have, he said, succeeded in drawing public attention to the necessity of thoroughly examining the possible outcome of the decadence of industrial fruit-growing in this country, and I hope of arresting the serious loss which would undoubtedly occur if measures were not taken to arrest such loss before the evil had gone too far to mend. It is proposed in the ensuing year to hold meetings in the provincial districts to invite the co-operation of all who are willing to help us in the good work by reading papers and assembling to discuss matters which are of vital importance to this particular industry. We intend to deal with matters of important interest in a thoroughly impartial spirit. One of the important points is the cost of the conveyance of fruit, and we shall be glad if we can, by obtaining information, enable growers, handicapped by distance from the centres of distribution, to compete with those more happily situated. We trust that we shall be able to obtain by reports from competent persons sufficient knowledge on this head to submit our case to the Board of Trade. There are good grounds for believing that the cost of the transport of fruit is much greater than it need be, and that this cost presses heavily on one of our native industries. I must remind those who make the reports that the facts must be accurate, and that a case which is to be submitted to the Board of Trade must be very clear and distinct.

We also hope by inquiry and discussion to raise the standard of quality of fruits sent to market, and as planting is likely to be carried on for some years on a more extensive scale than has hitherto been known, any information as to the relative value of sorts in different districts will be of very great importance to the planter, and it will, I hope, be one of the aims and objects of the Society to classify

and determine as far as possible the suitability of sorts of fruits to different localities; the fewer sorts the better, both for the fruit tree grower and the planter. It is, I think, known to many that a very decided liking is exhibited by certain fruits to particular districts. I may instance the Winesour Plum in Yorkshire, the Apple orchards of Herefordshire and Devonshire, the Bullaces of East Anglia, and in my own district the singular success of the Early Prolific Plum. A society which can visit the different fruit-growing districts will be able to gather more facts than a society which is fixed permanently in any one locality, and will, I imagine, much extend its sphere of usefulness.

Mr. Watkins of Hereford remarked in a letter that the present rates are amongst the greatest hindrances to the extension of fruit-cultivation. Mr. J. Udale, Tamworth, wrote—"Railway rates for the transit of fruit and vegetables under some circumstances are quite prohibitive. Twelve months ago I was in the habit of sending all classes of fruit to two fruiterers in Birmingham. Choice fruit was sent by passenger train, coarse fruit and vegetables by goods train, thinking it would be much cheaper. However, after one or two consignments had been delivered at the ordinary goods rate, I received notice from my customer that the railway company had a higher tariff for fruit and vegetables, and that they demanded extra payment of either 1s. 3d. or 1s. 6d. on previous payments for the same weight of the same class of goods in the same hamper. This additional charge, in conjunction with the rate upon returned empties, caused me to cease sending such goods to Birmingham, and I dispose of them nearer home. This excessive charge by the railway company causes a direct loss to four classes of the community:—1st, the grower; 2nd, the railway companies themselves; 3rd, the fruiterer; 4th, the public. My experience is, that the railway rates are prohibitive of the rapid transport and wider distribution of all classes of garden produce except fruit and flowers of the highest quality, beyond a distance of twenty miles; and I have long been of opinion that the time had come when it was desirable that growers should combine for the purposes of dealing with railway rates, selecting the most suitable markets, and disposing of their own produce, if possible, direct to the consumer."

From Mr. W. E. Bear a suggestive letter was received in which he said—"It seems to me that the only really important thing for your Association to do in this connection, is to form a Parliamentary Committee, and to get the Association recognised as a body entitled to be represented before the Board of Trade. All members who have real grievances should send details to the Committee, and those that prove on examination to be valid should be brought before the Board of Trade. It is no use to read a paper showing that rates on fruit are too high; everybody knows that. The time has come to get such rates reduced."

Mr. Albert Bath said he had made some careful comparisons between the rates per ton for fruit conveyed by rail from different stations at an equal distance from London, and he showed, by a series of figures, the extraordinary disproportion that existed on some lines. He contended that a system of equalisation was needed in the interest of growers who had to send their fruit long distances.

Mr. R. Dean followed with some facts and figures relating to the irregularities of railway charges, showing how the foreign preferential rates press very heavily on the home producer, the difference in a railway rate often meaning the whole of the profit. It was stated that English Potatoes and fruit cost 23s. 4d. per ton to bring from Selling (near Faversham) to London, yet foreign produce of the same character were brought to London *via* Selling for 20s. per ton.

Mr. Figgures, of the Railway Clearing Office, remarked that the railway companies were mostly willing to make any reasonable concessions, and that there was a danger if rates were much decreased it would have a tendency to flood some markets, with a consequent reduction in prices to the producers. He thought the best plan was to encourage people to send their goods to the nearest markets. The business of the meeting was concluded by a resolution, to the effect "that the Executive Committee of the British Fruit Growers' Association be requested to collect all available information on the subject of railway rates in fruit transit and distribution, to enter into communication for this object with the Railway and Canal Traders' Association, and to submit the results in the form of a report at the earliest convenient meeting."

THE WEATHER.

[Accumulated temperature indicates the combined amount and duration of the excess or defect of temperature above or below 32° F. for the period named, and is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.				
	Above or below the Mean for the week ending Nov. 12.	ACCUMULATED.			
		Above 42° for the Week.	Below 42° for the Week.	Above 42° difference from Mean since Jan. 3, 1888.	Below 42° difference from Mean since Jan. 3, 1888.
Principal Wheat-producing Districts.		Day-deg.	Day-deg.	Day-deg.	Day-deg.
0. SCOTLAND, N. ...	1 above	19	8	- 248	+ 198
1. SCOTLAND, E. ...	2 above	13	8	- 460	+ 132
2. ENGLAND, N.E. ...	0 (aver.)	13	8	- 524	+ 71
3. ENGLAND, E. ...	2 below	8	19	- 411	+ 193
4. MIDLAND COS. ...	2 below	8	21	- 501	+ 191
5. ENGLAND, S. ...	1 below	22	7	- 494	+ 226
Principal Grazing, &c., Districts.					
6. SCOTLAND, W. ...	2 above	21	7	- 374	+ 87
7. ENGLAND, N.W. ...	2 below	10	17	- 369	+ 123
8. ENGLAND, S.W. ...	1 above	33	1	- 504	+ 263
9. IRELAND, N. ...	2 above	25	2	- 281	+ 45
10. IRELAND, S. ...	3 above	41	0	- 279	+ 104
— CHANNEL ISLANDS	2 above	65	0	- 348	+ 154

DISTRICTS.	RAINFALL.			BRIGHT SUNSHINE.	
	More or less than the Mean for the Week.	No. of Rainy Days since Jan. 3, 1888.	Total Fall since Jan. 3, 1888.	Percentage of possible Duration for the Week.	Percentage of possible Duration since Jan. 3, 1888.
Principal Wheat-producing Districts.	Tenths of Inch.		Ins.		
0. SCOTLAND, N. ...	8 less	203	34.2	35	28
1. SCOTLAND, E. ...	0 (aver.)	175	24.8	5	29
2. ENGLAND, N.E. ...	2 more	159	23.1	24	26
3. ENGLAND, E. ...	2 less	163	21.9	21	30
4. MIDLAND COS. ...	9 more	118	22.3	5	28
5. ENGLAND, S. ...	6 more	155	24.5	8	29
Principal Grazing, &c., Districts.					
6. SCOTLAND, W. ...	1 more	161	34.9	14	30
7. ENGLAND, N.W. ...	3 more	167	25.3	17	29
8. ENGLAND, S.W. ...	15 more	173	31.3	15	34
9. IRELAND, N. ...	0 (aver.)	178	30.3	15	27
10. IRELAND, S. ...	9 more	161	31.5	11	33
— CHANNEL ISLANDS	7 more	191	27.1	8	40

THE PAST WEEK.

The following summary record of the weather for the week ending Nov. 12, is furnished from the Meteorological Office:—

"The weather has continued very cloudy or dull in almost all parts of the kingdom. In the extreme north of Scotland, however, it has been fair, with scarcely any rain, but in most parts of England and Ireland very heavy rain fell during the latter part of the period, and the conditions were rough and squally generally.

"The temperature has been rather above the mean over Ireland, Scotland, the 'Channel Islands,' and 'England, S.W.,' but a little below it over the greater part of England. The highest of the maxima, which were registered in most places on the 12th, ranged from 51° in 'Scotland, E.' to 58° in 'England, S.W.,' and the 'Channel Islands.' During the earlier days of the period the daily

maxima were low over central and 'England, S.E.' the highest readings on the 7th varying between 36° and 38°. The lowest of the minima were generally recorded either on the 7th or 8th, when they ranged from 30° in 'England, N.W.,' to 34° in 'England, N.E.,' 'Scotland, W.,' and 'Ireland, N.,' to 37° in 'Ireland, S.' and to 42° in the 'Channel Islands.'

"The rainfall has been much less than the mean in 'Scotland, N.' and rather less in 'England, E.,' but in nearly all other districts a very considerable excess is shown. Over central and south-western England, the fall has been more than twice as much as the average value. At Culhampton the fall during the 8th amounted to 2.29 inches.

"Bright sunshine has again been very little prevalent excepting in 'Scotland, N.' The percentage of the possible amount of duration ranged from 5 to 24 over the kingdom generally, but in 'Scotland, N.' it was 35."

MEAN TEMPERATURE OBSERVED AT CHISWICK DURING THE WEEK ENDING NOV. 24. (AVERAGE OF FORTY-FOUR YEARS.)

Nov. 18 ...	41° 9	Nov. 22 ...	41° 6
" 19 ...	41° 8	" 23 ...	41° 6
" 20 ...	41° 7	" 24 ...	41° 5
" 21 ...	41° 6	Mean for the week ...	41° 7

MARKETS.

COVENT GARDEN, November 15.

SUPPLIES heavy, with little business doing. *James Webber, Wholesale Apple Market.*

FRUIT.—AVERAGE WHOLESALE PRICES.

Apples, half-sieve ...	2 0-4 6	Lemons, per case ...	12 0-21 0
— Canada and Nova ...	10 0-20 0	Peaches, dozen ...	2 0-6 0
— Scotia, per barrel ...	10 0-20 0	Pine-apples, Eng., lb. ...	1 6-2 0
Cobs, 100 lb. ...	100 0-...	Plums, half-sieve ...	2 6-4 6
Grapes, per lb. ...	0 6-2 6	— St. Michael, each ...	2 0-8 0

VEGETABLES.—AVERAGE RETAIL PRICES.

Artichokes, p. doz. ...	4 0-...	Mustard and Cress, punnet ...	0 4-...
Beet, red, per dozen ...	1 0-2 0	Onions, per bunch ...	0 5-...
Carrots, per bunch ...	0 6-...	Parsley, per bunch ...	0 4-...
Cauliflowers, each ...	0 3-...	Potatoes, per cwt. ...	4 0-5 0
Celery, per bundle ...	1 6-2 0	— kidney, per cwt. ...	4 0-5 0
Cucumbers, each ...	0 9-...	Shallots, per lb. ...	0 6-...
Endive, per dozen ...	3 0-...	Spinach, per bushel ...	2 6-...
Green Mint, bunch ...	0 6-...	Tomatoes, per lb. ...	1 0-...
Herbs, per bunch ...	0 6-...	Turnips, per bunch, new ...	0 5-...
Leeks, per bunch ...	0 4-...		
Lettuce, per dozen ...	2 0-...		
Mushrooms, punnet ...	2 6-...		

POTATOS.—Beauty of Hebron, 70s.; Imperators, 60s. to 100s.; and Magnums, 70s. to 80s. per ton.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

Aralia Sieboldi, doz. ...	6 0-18 0	Ferns, in var., doz. ...	4 0-18 0
Chrysanthemums, doz. ...	4 0-9 0	Foliage plants, various, each ...	2 0-10 0
— large plants, each ...	2 0-4 0	Ficus elastica, each ...	1 6-7 0
Coleus, dozen ...	2 0-4 0	Fuchsias, doz. ...	3 0-6 0
Cyperus, per dozen ...	4 0-12 0	Hyacinths, Roman, dozen pots ...	10 0-12 0
Dracena terminalis, per dozen ...	30 0-60 0	Liliums, var., doz. ...	18 0-30 0
— viridis, per doz. ...	12 0-24 0	Marguerites, doz. ...	6 0-12 0
Erica bymalis, doz. ...	12 0-24 0	Palms, in var., each ...	6 0-21 0
— caffra, dozen ...	9 0-12 0	Pelargoniums, scarlet, per dozen ...	4 0-9 0
— gracilis, dozen ...	9 0-15 0	Primulas, per dozen ...	4 0-6 0
Eunonymus, in var., per dozen ...	6 0-18 0	Solanums, dozen ...	9 0-15 0
Evergreens, in var., per dozen ...	6 0-24 0		

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

Abutilons, 12 bun. ...	3 0-6 0	Mignonette, 12 bun. ...	2 0-4 0
Bouvardias, per bun. ...	0 6-1 0	Narciss., paper-white, (French), 12 bun. ...	3 0-6 0
Camellias, 12 blms. ...	3 0-4 0	Pelargoniums, 12 spr. ...	1 0-1 6
Carnations, 12 blms. ...	2 0-3 0	— scarlet, 12 spr. ...	4 0-8 0
Chrysanthemums, 12 blooms ...	0 6-3 0	Primulas, double, 12 sprays ...	1 0-1 6
— dozen bunches ...	4 0-12 0	Roses, Tea, per doz. ...	1 0-3 0
Eucharis, per dozen ...	3 0-6 0	— coloured, dozen ...	2 0-4 0
Gardenias, 12 blooms ...	3 0-6 0	— red, per dozen ...	1 0-2 0
Heliotropes, 12 spr. ...	0 6-1 0	— Safrano, dozen ...	1 0-2 0
Lilium longiflorum, 12 blooms ...	4 0-6 0	Stephanotis, 12 spr. ...	4 0-6 0
— lancifolium, 12 bl. ...	1 0-3 0	Tuberose, 12 blms. ...	0 6-1 0
Hyacinths, Roman, 12 sprays ...	1 0-1 6	Violets, 12 bunches ...	1 0-2 0
Lapageria, 12 blooms ...	1 0-2 0	— dark, Fr., bunch ...	1 6-2 0
Marguerites, 12 bun. ...	3 0-6 0	— Parme, Fr., bun. ...	3 6-5 0

SEEDS.

LONDON: Nov. 14.—Messrs. John Shaw & Sons, seed merchants, of 37, Mark Lane, E.C., report to-day's market thinly attended, with scarcely any business doing. With regard to Clover-seeds a not

unhealthy lull has taken place; the recent speculative fever having for the time abated. American red Clover seed shows a substantial reduction from the highest point. There is no quotable variation in either Alsike, white, or Trefoil. For bird seeds the sale is slow. Fine large blue Peas are inquired for; prices keep firm. In Haricot Beans the tendency continues upwards. Linseed is dearer.

CORN.

Averages.—Official statement showing the average price of British corn, imperial measure, in the week ended November 10:—Wheat, 31s. 8d.; Barley, 28s. 2d.; Oats, 16s. 2d. For the corresponding week in 1887:—Wheat, 31s. 5d.; Barley, 29s. 6d.; Oats, 15s. 5d.

FRUIT AND VEGETABLES.

SPITALFIELDS: Nov. 14.—There were abundant supplies to-day, and the trade dull, causing prices to rule low. Potato trade fair for best samples, but for inferior sorts. Quotations:—Pears, 2s. 6d. to 3s. 6d. per bushel; English Apples, 3s. to 5s. do.; do., 1s. 6d. to 2s. 6d. per half-bushel; American do., 9s. to 18s. per barrel; Cauliflowers, 2s. to 5s. per tally; Savoy, 1s. to 3s. do.; Cabbages, 1s. 3d. to 2s. do.; Brussels Sprouts, 1s. to 1s. 6d. per half-sieve; Greens, 1s. to 1s. 3d. per dozen bunches; Turnips, 1s. 6d. to 2s. do.; Carrots, 1s. 3d. to 1s. 9d. do.; Parsley, 1s. 6d. to 2s. do.; Horseradish, 10d. to 1s. 2d. per bundle; Celery, 4s. to 12s. per dozen bunches; English Onions, 4s. to 4s. 6d. per cwt.; Dutch Onions, 2s. 6d. to 3s. per bag; Belgian Onions, 2s. 3d. to 2s. 9d. do.; pickling Onions, 4s. to 5s. do.; Endive, 1s. 6d. to 2s. per dozen; Cos Lettuces, 4d. to 8d. per score of 22; Carrots, 20s. to 30s. per ton.

STRATFORD, Nov. 13.—Both trade and supply have been good during the past week. Cabbages, 2s. to 2s. 6d. per tally; Savoy, 3s. to 3s. 6d. do.; Greens, 1s. 3d. to 1s. 6d. dozen; Turnips, 30s. to 40s. ton; Carrots, household, 35s. to 40s. do.; Mangels, 14s. to 21s. do.; Swedes, 16s. to 22s. do.; Onions, Dutch, 2s. 6d. to 3s. 6d. per bag; Watercress, 6d. per doz.; Apples, 2s. 9d. to 6s. per bushel; Pears, 2s. 6d. to 4s. do.; Chestnuts, 7s. to 10s. per bag; Walnuts, 3s. 9d. to 4s. 9d. do.; Sprouts, 2s. to 2s. 6d. per half-sieve; Celery, 10d. to 1s. per roll.

POTATOS.

BOROUGH AND SPITALFIELDS: Nov. 13.—Supplies on offer are in moderate compass, and a steady trade is passing. Best samples tend rather dearer. —Regents, Scotch, 80s. to 100s.; English, 60s. to 100s.; Hebrons, 60s. to 110s.; Magnum Bonums, 60s. to 100s. per ton.

SPITALFIELDS: Nov. 14.—Quotations:—Beauty of Hebron, 80s. to 100s.; Magnums, 65s. to 90s.; Imperators, 80s. to 90s.; Champions, 55s. to 70s.; Regents, 60s. to 90s. per ton.

STRATFORD: Nov. 13.—Quotations:—Beauty of Hebron, 60s. to 80s.; White Elephants, 70s. to 90s.; Light-land Magnums, 65s. to 85s.; dark-land do., 60s. to 70s. per ton.

Imports.—The following are the imports into London during the past week:—9479 bags from Hamburg, 210 bags from Bremen, 11 bags from Amsterdam, 20 packages from Flushing, and 110 sacks from Stettin.

HAY.

Averages.—The following are the averages of the prices obtained at the various metropolitan markets during the past week:—Clover, prime, old, 120s. to 150s.; new, 80s. to 110s.; inferior, 45s. to 84s.; prime meadow hay, 120s. to 130s.; good new hay, 80s. to 100s.; old straw, 42s. to 48s.; new, 30s. to 44s. per load.

NOTICES TO CORRESPONDENTS.

ADIANTUM HYBRID: *W. H. H.* It is a very robust plant, and may have a value in certain positions.

BOOKS: *Student.* Apply to Messrs. W. Rider & Son, 14, Bartholomew Close, E.C.

CATTLEYA MOSSIE: *C. E. H.* We cannot explain the reason that your plants have two leaves springing from the pseudobulb. It must be an improvement in appearance, and you should not look for a

remedy for the redundancy. Moreover, there is none.

CORRECTIONS.—In our report of the National Chrysanthemum Society, in our last issue, p. 547 (miscellaneous Exhibits), for G. Bunyard & Co., read, T. Bunyard, Ashford, had a collection of Apples; and on the same page in the twelve Japanese blooms, Metropolitan class, for Buck read Beech.

FRUIT FOR PROFIT: G. C. We cannot, in these pages, afford you the special information you seek, but refer you to the recent numbers of the *Gardeners' Chronicle* dealing with this matter, viz., the issues for October 6, 13, 20 and 27.

GRAPES: P. D. W. They appear to have been rubbed severely with the hand, or to have been syringed heavily continuously. Red-spider will damage Grapes sometimes by consuming the bloom on the berries.

"LUFFENTLICHESLEDE": Dr. L. We are quite unable to surmise what is meant. There is, probably, some error in transcription.

MUSTARD AND CRESS: T. Smith. See our "Kitchen Garden" calendar in this issue.

NAMES OF FRUIT: D. E. 1, local Cider Apple; 2, Blenheim Orange.—W. P. 1, rotten; 2, Beurré Capiaumont; 3 and 4, not recognised; 5, Ribston Pippin; 6, Warner's King.—M. J. B. 1, Hawthornden; 2, Fearn's Pippin; 3, not recognised; 4, Cox's Orange Pippin.—W. N. 1, Grange's Pearmain; 2, unknown; 3, Scarlet Nonpareil; 4, Wadhurst Pippin; 5, Golden Reinette; 6, Royal Russet.—G. S. Apples: 1, Peasgood's Nonsuch; others unknown.—S. D. 1, Marie Louise d'Uccle; 2, Beurré Gris; 3, Thompson's; 4, Emile d'Heyst; 5, Beurré Bosc; 6, unknown.—J. T. Pear: King Edward.—S. Pope. 1, Wadhurst Pippin; 2, Warner's King; 3, Hambledon Deux Ans.—W. W. 1, Beurré Capiaumont; 2, Passe Colmar.

NAMES OF PLANTS: P. D. W. Embotrium coccineum; Athrotaxis laxifolia; Thuia gigantea.—F. S. M. Single flower, Odontoglossum tripudians; the other is Oncidium prætextum.—H. G. E. Crinum Mooreanum.—J. Fisher. 1, Epidendrum sp., cannot determine without flower; 2, Brassavola Digbyana. Your other question next week.—J. B. Way. 1, Eria pubescens; 2, Catasetum fuliginosum; 3, Cattleya Dowiana aurea.—G. Mantin. 1, Goodyera sp.: send a leaf with flower, otherwise we cannot determine the species; 2, Phalanopsis Esmeralda; 3, Odontoglossum grande (fine flower).—T. Gell. Matricaria multiflora (South Africa).—F. H. 3, Erica propendens (a rare plant); 4, E. spumosa.—P. H. Gosse. Polygala chamæbuxus.—Constant Reader. The Oak is one of the innumerable seedling forms of the common Evergreen Oak.—A. C. H. Both Picea Morinda.—J. H. Cymbidium Lowianum.—South Devon. 1, Thuiopsis nutkaensis (borealis); 2, Juniperus recurva; 3, Cupressus, next week; 4, Lamium purpureum, golden-leaved variety; 5, Geranium sanguineum.—E. M. Pleione, next week.

PERVERSION OF FRENCH NAMES: E. P. W. It is not fair to expect an ordinary gardener to be a French scholar, and we do not think your proposed scheme would do anything to lessen the torturings of which you complain. As you are going to try the effect of inducing your gardener to pronounce Dupuis Jamain as "Dupwee Jam-mang," and Gloire de Dijon as "Glwoere der Deejon," and so forth, you will soon be enabled to judge for yourself how your proposed plan will work; but we are quite certain no Frenchman would recognise French as you propose it should be spoken in English gardens, any better than according to present arrangements.

PLANTING SANDHILLS: A. D. W. The MS. is mislaid, and if found it shall be returned to you.

POULTRY: W. Chitty. The articles you would supply do not come within the scope of the paper.

SOLANUMS: G. H. We suppose you mean the ordinary berried species, which is easily raised from seed or cuttings. Young plants raised from either may be planted out in moderately good ground in the full sunshine, or they may be kept in pots, giving only slight shifts as they seem to require them. Let the pots stand on a bed of coal-ashes, or plunge them in the same to the rim. The essentials are—syringing to keep down red-spider, careful watering, and not permitting them to suffer from dryness at the root, which is fatal to leaf and bloom. The drainage of the pot should be efficient,

and the compost, sandy loam and leaf-mould. After August is out, the plants in the open ground should be potted, and all of them be put into frames, so as to be quite under control. From November onwards treat them as greenhouse plants, and some, even a little warmer, if the berries are wanted to colour early. They require in the winter months plenty of light and ventilation, but not draughts of cold air.

THE HEAVIEST BUNCH OF GRAPES: F. H. F. On September 16, 1875, at Glasgow show, Mr. Cartton showed a bunch of Trebbiano of 26 lb. 4 oz. in weight.

TOMATO CULTURE: A. N. Y. W. There is no book which treats of this subject, nor is there any need of one. Any book on gardening matters treats the subject explicitly enough.

VINES: E. M. They are not, as you suppose, affected with Phylloxera, but seem to have suffered at the root from some deleterious substance, or from excessive heat at the root. Your note gives no clue as to cause, and we cannot assist you further.

CATALOGUES RECEIVED.

LITTLE & BALLANTYNE, Carlisle—Trees and Shrubs. WILLIAM ETHERINGTON, The Gardens, Swanscombe, Kent—Chrysanthemums.

ENOCH WHITE, Royal Bournemouth and Victoria Nurseries, Bournemouth—Roses, Fruit Trees, &c.

THE LIVERPOOL HORTICULTURAL COMPANY, The Vineyard and Nurseries, Garston, near Liverpool—Ornamental and Fruit Trees, Roses, &c.

THOMAS KENNEDY & Co., 106 and 108, High Street, Dumfries, N.B.—Forest, Fruit, and Ornamental Trees.

JAMES BACKHOUSE & SON, The Nurseries, York—Roses.

EMILE CAPPE, Rue de l'Eglise, Vesinet, Seine-et-Oise, France—Hybrid Begonias, Orchids, Bromeliads, &c.

RITTERGUT, Zoschen, near Merseburg, Germany—Shrubs, Forest Trees, Roses, &c.

COMMUNICATIONS RECEIVED.—E. Steward.—O. T.—J. D.—A. H.—W. B. H. J. Veitch & Sons.—J. R. J.—H. M.—S. M.—J. Peed.—J. Rust.—E. C.—E. J.—J. S.—Theta.—W. E.—S. C.—J. Carter & Co.—Sutton & Sons.—J. Geddes, W. W. L'Allegre (next week).—J. T. B.—W. T. T. D.—J. C.—P. W.—D. J. Y.—C. H.—N. E.—M. D.—H. H. D'O.—C. W. D.—R. H. M.

Correspondents sending plants or fruits to be named, or asking questions demanding time and research for their solution, must not expect to obtain an answer to their enquiries in the current week.

THE CORK INDUSTRY IN SPAIN.—The British consul at Barcelona, in a report just published, states that during the past year there has been much improvement in the cork industry, because there has been an extraordinary demand for the superior kinds of corks for champagne. The export of corks to England, the Continent, and the United States, has been greater than in former years. Gerona is the most important centre of the cork industry in Spain, and an idea of the magnitude of the manufacture may be gathered from the following figures:—In 1885 the export of cork in pieces amounted to 15,883 cwt., while the number of corks exported was 1,137,217,000, representing a total value of about £600,000. In 1886 this increased to 19,635 cwt. of pieces, 16,357 squares, and 1,194,902,000 corks, of a total value of £710,000. The corks are made with diminutive machines of the simplest kind. Hundreds of factories are scattered over the province of Gerona, the town of Palamos alone having forty. In some places the Cork trees have been suffering from the invasion of a pest which threatened to destroy them. A voracious caterpillar, or worm, appeared by millions in the Cork forests, and in a very short time stripped the trees of all the leaves from the tips of the branches to the trunks. These worms are now in their turn attacked and devoured by another insect, a species of beetle of a dark green colour, and armed with a horn with which it cuts the worms up. Another insect in the form of a crab (*eangrejo*) pursues the worms and destroys them. Moreover, when the caterpillar has passed through its metamorphosis, and the butterflies have deposited their eggs, another insect, until now unknown, attacks and pierces the bags containing the new germs, and destroys them. It is hoped that by means of these three agencies the complete extinction of the destructive caterpillars may be accomplished.



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ton; 26s. per ton, in 2-bushel bags, 4d. each.

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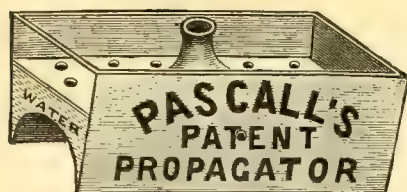
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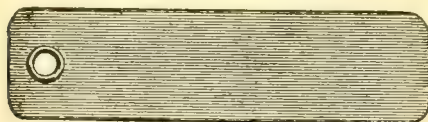
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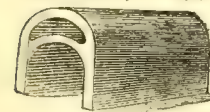
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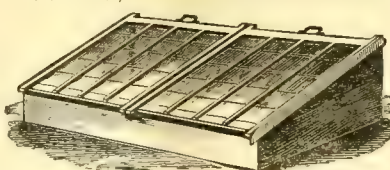
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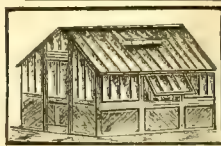
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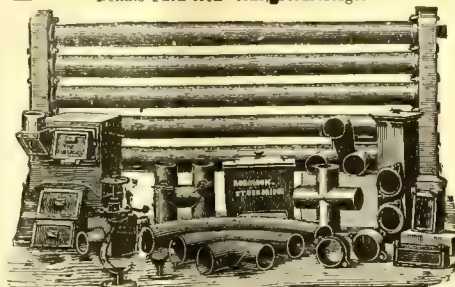
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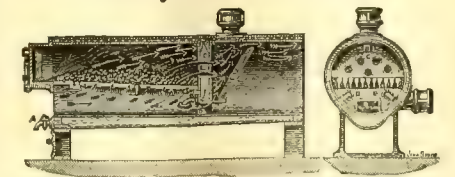
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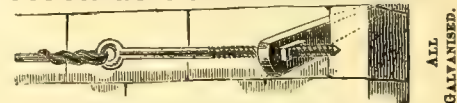
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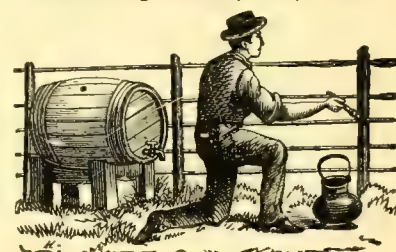
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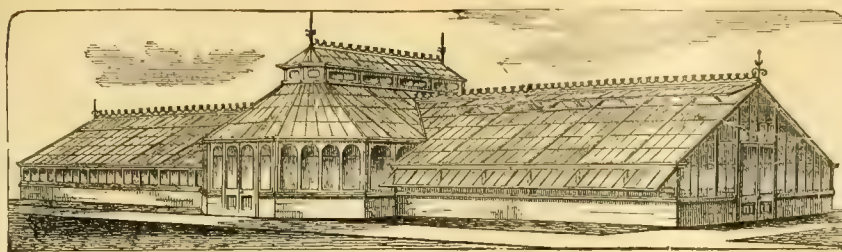
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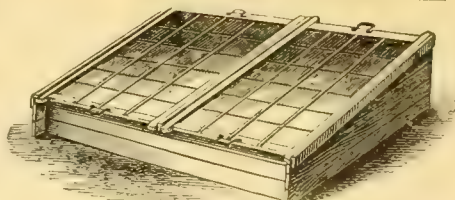
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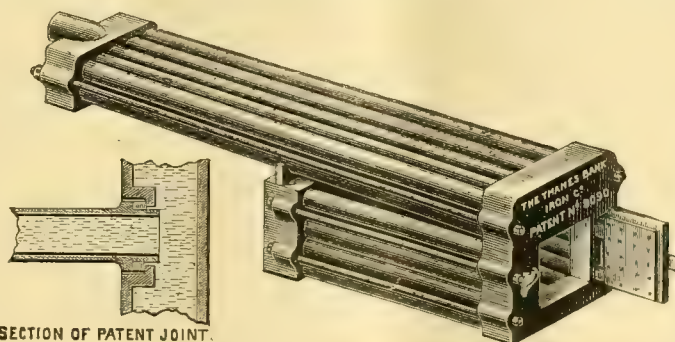
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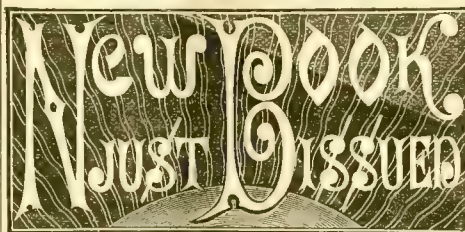
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PASTUPLANTA, the best Artificial Manure. It enriches the soil with the fertilizers drawn from it by plants; no unpleasant smell; admirably adapted for all pot plants. In bags: 112 lb., 19s.; 56 lb., 11s. 3d.; 28 lb., 6s. 9d.; 14 lb., 4s.; 7 lb., 2s. 3d. In tins, 1s. each. Sole Manufacturers, PHILIP HARRIS AND CO. (Limited), 9, Bull Ring, Birmingham.

NICOTINE SOAP.—An effectual eradicant of all insect pests affecting plants, without injury to foliage. Jars, 1s. 6d., 3s., 5s. 6d.; Tins 15s. 6d., 25s., 95s. All See ismen and Florists.

SALES BY AUCTION.

Dutch Bulbs.
Every MONDAY, THURSDAY, and SATURDAY.
Great Unreserved Sales.

MESSRS. PROTHEROE AND MORRIS will sell by AUCTION, at the Central Sale Rooms, 67 and 68, Cheapside, London, E.C., every MONDAY, THURSDAY, and SATURDAY, at half-past 11 o'clock precisely, extensive consignments of first-class HYACINTHS, TULIPS, CROCUS, NARCISSUS, and other BULBS, from Holland, lotted to suit the Trade and Private Buyers.

On view morning of Sale, and Catalogues had.

Tuesday Next.

English-grown CAMELLIAS and AZALEAS, and a fine assortment of GREENHOUSE PLANTS, Standard and Dwarf ROSES of the best sorts, selected FRUIT TREES, Hardy EVERGREENS, DUTCH BULBS, &c.

MESSRS. PROTHEROE AND MORRIS will sell the above by AUCTION, at the City Auction Rooms, 38 and 39, Gracechurch Street, E.C., on TUESDAY NEXT, November 27, at half-past 12 o'clock precisely.

On view morning of Sale, and Catalogues had at the Rooms; and of the Auctioneers, 67 and 68, Cheapside, London, E.C.; and Leytonstone, E.

Tuesday Next.
ORCHIDS in FLOWER.
ESTABLISHED ORCHIDS.

MESSRS. PROTHEROE AND MORRIS will sell by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on TUESDAY NEXT, November 27, at half-past 12 o'clock precisely, a large quantity of ORCHIDS in FLOWER and BUD from various collections, consisting of Cattleya, Lælia, Odontoglossum, Oncidium, &c.

Also a fine lot of ESTABLISHED ORCHIDS, including Cattleya Wagneri (true), C. calaminata, Dendrobium Schroederi (true), Cypripedium, Mormannia, C. Eranthis superbum, C. carnifera, C. Amesiana, C. Læcanium superbum, C. alinum, C. carolinense, C. cristata alba, and others; IMPORTED ORCHIDS in variety, the *Orchid Album*, &c.

Together with 200 ODONTOGLOSSUM CRISPUM, semi-established plants of great strength, all unfloored, from this year's importation. Several plants from the same importation have already opened flowers of fine variety. Fifty specimen plants of CATTLEYA MENDELII, semi-established, also unfloored in England; and other ORCHIDS, by order of R. B. White, Esq.

On view morning of Sale, and Catalogues had.

Wednesday Next.

5000 LILIUM AURATUM, from Japan, splendid Bulbs, just received; 3000 LILIES of the VALLEY, Barr's DAFFODILS, 500 AZALEAS and CAMELLIAS, STOVE and GREENHOUSE PLANTS in variety, including some fine specimens; very fine EUCARIS plants, English-grown LILIES, and other Hardy Bulbs, &c.

MESSRS. PROTHEROE AND MORRIS will sell the above by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on WEDNESDAY NEXT, November 28, at half-past 12 o'clock precisely.

On view morning of Sale, and Catalogues had.

Hornsey Nursery.

SALE of the whole of the extensive Stock of FERNS, Specimen White and other CAMELLIAS, HORSE, CARTS, &c., by order of Mr. J. Page, who is relinquishing the business.

MESSRS. PROTHEROE AND MORRIS will sell by AUCTION, on the Premises, the Hornsey Nursery, Hornsey, N., on WEDNESDAY, November 28, at 12 o'clock precisely, the whole of the extensive stock of about 50,000 FERNS, of sorts, in Lots to suit the Trade and Private Buyers, consisting of Pteris, in variety; Adiantums and others; PALMS, DRACÆNAS, CARYSTANTHEMUMS, large White AZALEAS, for forcing; magnificent Specimen Double White and other CAMELLIAS, profusely set with bud, and other Stock; Grey Horse, Four-wheeled Van, Tumbril Cart, two light Carts, Rollers, Heaps of Loam and Manures, &c.

May be viewed two days prior to the Sale. Catalogues had on the premises, and of the Auctioneers, 67 and 68, Cheapside, E.C., and Leytonstone, E.

N.B.—THE NURSERY TO BE LET, with early possession—an unusual opportunity for a young beginner. Full particulars of the Auctioneers.

Barnet, N.

By order of the Court of Chancery. Cornwell v. Cornwell. SALE of the old-established NURSERY BUSINESS by a going concern, and also about 6 acres of FREEHOLD and COPYHOLD LAND.

MESSRS. PROTHEROE AND MORRIS are instructed to sell by AUCTION, at the Mart, Tokenhouse Yard, London, E.C., on FRIDAY, November 30, at 2 o'clock precisely, the following properties:—

Lot 1.—The old-established NURSERY, SEED, and FLORIST'S BUSINESS, known as the HADLEY NURSERY, Barnet, N., occupying a good position in the best part of the High Street, within eight minutes' walk of the High Barnet Railway Station. The Property comprises about 10 acres of Ground, with eight Greenhouses, Dwelling-house, and Seed Shop, the whole held for an unexpired term of about fifteen years at the moderate rental of £45 per annum. The Goodwill of the Business carried on for so many years will be included in this lot.

Lot 2.—About 6 acres of valuable FREEHOLD and COPYHOLD BUILDING or NURSERY LAND, known as the COMMON NURSERY, Barnet Common, possessing long frontages to the main road, and to Union Lane in the rear.

Lot 3.—Two acres of LAND, opposite Lot 2, held at £7 per annum.

This Sale offers an unusual opportunity for any one desirous of embarking into the Nursery Business. The whole of the STOCK IN TRADE will be sold by Auction, thus enabling purchasers to secure only such stock as may be required for carrying on the business at unreserved auction prices.

Particulars and Conditions of Sale may be had on the Premises, of Messrs. HOUGHTON and BYFIELD, Solicitors, 85, Gracechurch Street, E.C.; and at Barnet, Herts; of Messrs. MONTAGU SCOTT and BAKER, Solicitors, 10, Gray's Inn Square, W.C., and Hatfield; and of the Auctioneers, 67 and 68, Cheapside, London, E.C., and Leytonstone, E.

Friday Next.

ESTABLISHED and IMPORTED ORCHIDS.

MESSRS. PROTHEROE AND MORRIS will sell by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY NEXT, November 30, at half-past 12 o'clock precisely, a quantity of choice well-grown ESTABLISHED ORCHIDS, by order of Messrs. F. Sander & Co., including the following rare varieties:—Aganisia cyanea, Ballia Lalindi, Cattleya Rothschildiana, C. Walkeriana, Cypripedium Asburtonianum, C. Læcanium superbum, C. Barlettii, C. Curtisii, C. Laforcadii, C. vexillarium, Dendrobium nobile Sandersiana, Lælia anceps alba, L. a. Dawsonii, Lycaste Skinnerii alba, grand specimen plant, 11 flowers; Odontoglossum Humeana, O. Pardinum, Oncidium splendens, Maxillaria Sanderiana, Trichopilia Galliantha, together with a large importation of Cattleya Gaskelliana, a grand lot of Lælia harpophylla, Odontoglossum vexillarium, a fine lot of Oncidium crispum, Rodriguezia planifolia, Stanhopea Wardiana, fine masses of Zygopetalum crinitum grandiflorum, and many other splendid ORCHIDS. Also a quantity of ESTABLISHED ORCHIDS, many in Flower and Bud, and a small importation of CATTLEYA CITRINA.

On view morning of Sale, and Catalogues had.

Tuesday, December 4.—Sale by Sample.

MESSRS. PROTHEROE AND MORRIS desire to announce that their NEXT SAMPLE SALE will take place as above, for which they will be glad to receive NOTICE OF ENTRIES as soon as possible.

Beckenham.—The Gardens, Kelsey Manor.

About a mile from Beckenham Junction Station. Clearance Sale of STOVE and GREENHOUSE PLANTS, Handsome DRESDEN CHINA, FOUNTAIN, HORSES, CARRIAGES, and Effects.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions from C. A. R. Hoare, Esq., (who is giving up the Gardens) to sell by AUCTION, on the Premises as above, on THURSDAY and FRIDAY, December 5 and 6, at 12 o'clock precisely, each day, the whole of the choice Collection of STOVE and GREENHOUSE PLANTS, including very fine specimen Camellias and Azaleas, large PALMS, about 200 ORCHIDS, specimen Eucharis in splendid condition, 2 powerful CARTHORSES, Brown COB, several Sets of HARNESS, Convertible WAGONETTE, CARRIAGES, 2 CARTS, Market WAGGON, large Iron Field ROLLER, 4 MOWING MACHINES, a handsome Self-acting 3-tier Dresden China FOUNTAIN, standing 6 feet high, a large quantity of Oak Panelling, several 2-light Boxes and numerous other effects. May be viewed on presentation of Catalogue the day prior to the Sale. Catalogues may be had of Mr. Goldsmith, the Head Gardener, at the Gardens; and of the Auctioneers, Estate Agents and Valuers, 67 and 68, Cheapside, E.C.

Friday, December 7.

Selected DUPLICATE PLANTS from the well-known collection of R. J. Measures, Esq., consisting almost entirely of rare and valuable hybrid CYPRIPEDIUMS.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions from R. J. Measures, Esq., to sell by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY, December 7, 1888, at half-past 12 o'clock precisely, selected DUPLICATE PLANTS from his well-known Collection, including the following:—

Cypripedium Measuresianum	Cypripedium expansum
" apiculatum	" melanthophallum
" thibautianum	" Fraserii
" Germinyanum	" leucorrhodium
" orphanum	" Wallerianum
" reticulatum	" Hartwegianum
" Carrieri	" pluneurum
" Williamsii	" regale.
" Turpe	

On view morning of Sale, and Catalogues had.

Barnet, N.

In the High Court of Justice, Chancery Division, Cornwell v. Cornwell. Six days' Clearance Sale of the whole of the extensive and well-grown NURSERY STOCK and GREENHOUSE PLANTS.

MESSRS. PROTHEROE AND MORRIS (the persons appointed by Mr. Justice Stirling, the Judge to whose Court the cause is attached) will sell by AUCTION, on the Premises, the Hadley Nursery, High Street Barnet, and the Common Nursery, Barnet Common, within a short distance of the High Barnet Railway Station, on MONDAY, December 10, and five following days, at 12 o'clock punctually each day, the whole of the unusually well-grown NURSERY STOCK and GREENHOUSE PLANTS, including the following:—

20,000 Conifers, of sorts	10,000 Standard Roses
500 Specimen Conifers	10,000 Dwarf Roses
3,500 Aucubas	1,000 Standard Roses, Gloire de Dijon
3,000 Laurels	10,000 Privet
2,000 Green and Variegated Hollies	3,000 Fruit Trees
6,000 Ivy	6,000 Gooseberries and Currants
5,000 Standard Ornamental Trees	6,000 Fruit Stocks
1,500 Euonymus	2,500 Tea Roses, in pots
6,000 Fruit Trees	250 Camellias and Azaleas

and large quantities of other Stock. Grey MARE, 4 CARTS, Spring VAN, HARNESS, UTENSILS in Trade, &c.

May be viewed one week prior to the Sale. Catalogues may be obtained at the Home Nursery, High Street, Barnet; of Messrs. HOUGHTON and BYFIELD, Solicitors, 85, Gracechurch Street, E.C., and Barnet; of Messrs. MONTAGU SCOTT and BAKER, Solicitors, 10, Gray's Inn Square, W.C., and Hatfield; and of the Auctioneers and Valuers, 67 and 68, Cheapside, E.C., and Leytonstone.

Bulbs from Holland.

Sales every MONDAY, WEDNESDAY, and SATURDAY, in Large and Small Lots, to suit all Buyers.

MR. J. C. STEVENS will sell by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., every MONDAY, WEDNESDAY, and SATURDAY, at half-past 12 o'clock precisely each day, first-class consignments of HYACINTHS, TULIPS, CROCUSES, and other BULBS, arriving daily from well-known Farms in Holland.

On view morning of Sale, and Catalogues had.

Tuesday Next.—(Sale No. 7807.)

SPECIAL SALE of BULBS from Holland.

MR. J. C. STEVENS will sell by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on TUESDAY NEXT, November 27, at half-past 12 o'clock precisely, several hundred Lots of first-class BULBS just arrived from Holland, in fine condition, comprising Hyacinths, Tulips, Crocuses, Gladioli, Narcissus, Anemones, Snowdrops, &c.

On view morning of Sale, and Catalogues had.

Wednesday and Saturday Next.

Choice Dwarf-trained and Pyramid FRUIT TREES, several hundred first-class Standard and Dwarf ROSES, hardy Ornamental SHRUBS and CONIFERS, BORDER PLANTS in great variety, &c.

MR. J. C. STEVENS will include the above in his SALES by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY and SATURDAY NEXT, November 28 and December 1.

On view morning of Sale, and Catalogues had.

Thursday Next.—(Sale No. 7809.)

5000 grand Bulbs of LILIUM AURATUM and other LILIES, IRIS, &c., from Japan, in the finest possible condition; also 20,000 extra fine Double South African TUBEROSES, just received direct; 2500 AMARYLLIS, Home-grown LILiums in great variety, several thousand Berlin LILY of the VALLEY Crowns for Forcing, &c.

MR. J. C. STEVENS will sell the above by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, November 29, at half-past 12 o'clock precisely.

On view morning of Sale, and Catalogues had.

Special Sale of Orchids in Flower and Bud.

MR. J. C. STEVENS begs to announce that his NEXT SPECIAL SALE of ORCHIDS in FLOWER and BUD, will take place at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, December 13, at half-past 12 o'clock precisely, and he will be glad if Gentlemen desirous of Entering Plants for this Sale, will SEND LIST AS SOON AS POSSIBLE.

Penge Nursery.

Within 10 Minutes' Walk of Three Railway Stations on the London, Brighton, and South-Coast, and London, Chatham, and Dover Railways.

MR. W. LEVENS is instructed to sell on the Premises as above, on SATURDAY, November 24, 1888, and FOLLOWING SATURDAY, at 11 for 12 o'clock, about 1500 Standard and Dwarf ROSES, 15,000 Evergreen SHRUBS, of the usual varieties (including very fine Aucubas), FRUIT and FOREST TREES, Quantity of White, Pink, and Scarlet PEONIES, &c. The whole are well rooted, and adapted for immediate planting.

May be viewed any day previous to the Sale. Purchasers will be allowed one month to clear their Lots. Catalogues on the Premises, and of the Auctioneer, Railway Bridge, Beckenham.

Cheap Bulb Sales.

MESSRS. SMALL AND CO. will sell by AUCTION, at 123, Fenchurch Street, City, E.C., every MONDAY, WEDNESDAY, and FRIDAY, at 12 o'clock each day, large consignments of GLADIOLI, LILY of the VALLEY, DIELYTRA, DUTCH BULBS, &c., specially lotted to suit all buyers.

Horticultural Auction Rooms, 123, Fenchurch Street, E.C.

GREAT AUCTION SALE

OF

5000 LILIUM AURATUM,
LILIUM SPECIOSUM RUBRUM,
LILIUM SPECIOSUM ALBUM
LILIUM LONGIFLORUM EXIMUM,
just arrived in splendid condition.
DUTCH BULBS, BUSH ROSES, &c.

Friday, November 30, at 12 o'clock.

MESSRS. SMALL AND CO.,
123, Fenchurch Street, City, E.C.

Cheddleton, near Leek.

PROSPECT COTTAGE, with an old-established Nursery, containing about 8 Acres; and GARDENER'S COTTAGE, STABLES, and OUTBUILDINGS, situate at Heath House, Cheddleton, near Leek, for many years in the occupation of Mr. Grosvenor, will shortly be SOLD by PUBLIC AUCTION.

CHALLINOR and CO., Leek, November 8, 1888.

To Market Gardeners. Florists. Nurserymen, &c.

HAMPTON-ON-THAMES.

FOR SALE, choice FREEHOLD LAND, in Acre Plots, suitable for above. Rich Garden Soil with gravel and sand sub-soil. The land is considered by the Trade the best near London for Grapes and all other Market Products. Apply, SECRETARY, Estates Investment and Villa Farm Company, Estate Office, Tangley Park, Hampton-on-Thames.

NURSERY PREMISES.—Most compact, on the Main Road, 5 miles from Marble Arch. Lease of 87 years at a Ground Rent for Disposal. Comfortable living accommodation; plenty of Glass. Price £900, which includes good Stock. Portion can remain on mortgage if desired. HERBERT DRAKE, 343, Harrow Road, Paddington, W.

TO GRAPE and TOMATO GROWERS.

A splendid Range of GLASSHOUSES for SALE, well stocked with 150 Vines, over 2000 Maidenhair Ferns, &c., and ample scope for Tomato Growing. Good opportunity. Satisfactory reasons for disposal.

Apply, HARTLEY and CO., 18, Highgate, Kendal.

TO BE SOLD, as a Going Concern, a valuable FREEHOLD NURSERY and BUSINESS, containing about 4 acres, twenty-eight large and well-built Greenhouses (all fully stocked), two Coach-houses, two Stables, large Office, four Sheds, three Van-, Cart, and two Horses, and other requisites. Situate within 4 miles of West End. A first-class opportunity for the promotion of a Company, there being every convenience for carrying on an extensive business. Further particulars of Messrs. W. EYDMANN AND SON, Auctioneers, Acton.

South of England.
LARGE GARDEN, 20 Acres, with Twenty Greenhouses and Vineries. £7000 has been spent on the property. Seven years' lease. Two Cottages inclusive, £150 a year. **ELDRIDGE, Portsmouth.**

ORCHIDS.

THE LIVERPOOL HORTICULTURAL CO.
(JOHN COWAN), Limited,
ARE CONSTANTLY RECEIVING

IMPORTATIONS OF ORCHIDS
from various parts of the World,
AND THEY HAVE AN IMMENSE STOCK OF

Established and Semi-established
ORCHIDS.

Full particulars sent free on application.

THE VINEYARD AND NURSERIES,
GARSTON, LIVERPOOL.

Palms, Foliage Plants, Heaths, &c.
FRANCIS R. KINGHORN will be pleased to forward LIST of above with low prices. Leading decorative **PALMS** in all sizes, great quantities, and in finest health. Richmond, Surrey; and 191 and 192, Flower Market, Covent Garden, W.C.

EVERGREEN HEDGES.
EVERGREEN HEDGES.

YEWs, English, 1½ to 2 feet, 30s. per 100; 2 to 2½ feet, 45s. per 100; 2½ to 3 feet, 65s. per 100.
HOLLIES, Green, 2 to 2½ feet, 40s. per 100; 2½ to 3 feet, 60s. per 100.

LAURELS, Common, 1½ to 2 feet, 12s. per 100; 2 to 3 feet, 15s. per 100; 2½ to 3½ feet, 20s. per 100.

THUJA LOBBII, 2½ to 3 feet, 30s. to 40s. per 100.

We hold immense stocks of the above, all bushy and well rooted plants.

Special offer for Covered Plants, &c. free on application.
JOHN PERKINS and SON, The Old Established Nursery and Seed Business, 52, Market Square, Northampton.
TELEGRAPHIC ADDRESS—"QUICK," NORTHAMPTON.

TREES and SHRUBS suitable for Towns and Smoky Districts. CATALOGUE free on application.—**RICHARD SMITH and CO.,** Nurserymen and Seed Merchants, Worcester.

KENT GROWN FRUIT TREES.

Thousands of Standard, Pyramid, Bush and Espalier Fruit Trees, comprising most of the best sorts of Apples, Pears, Plums and Cherries, strong healthy trees with fibrous roots.

300 SCOTCH FIRS, 5 to 6 feet, well furnished.

500 KENT COE NUTS, large bushes, 5 feet.

500 LAVENDER, 3 yr. transplanted, very bushy.

500 SWEET BRIERS, 4 feet, well furnished.

Price LISTS of above and General Nursery Stock post-free on application to

EVES AND DALTON, Nurserymen and Fruit Growers, Gravesend

VINES—VINES—VINES.—Good strong, well-ripened planting Canes of Hamburgh, Gros Colman, Gros Maroc, Muscat of Alexandria, and Alicante, 5 to 11 ft., from 3s. 6d. each; also a few BARTLETT Black RASPBERRY CANES, strong clumps, 1s. 6d.—**BARTLETT, Chalmery, Hampton.**

Having Grown

ADIANTUM CUNEATUM ELEGANS five years, I have proved its value as a Cut Frond for Market. Will put on Rail Plants in 8-inch pots, 7s. 6d. each, cash.
E. TUDGEY, Home Farm, Walton-on-Thames.

CARNATION "GLOIRE DE NANCY."

We are sending out for the fourth season our true strain of this the grandest White Carnation in cultivation, quite nardy, and for pot culture for cut bloom it has no equal. Robust and free bloomer. £1 per 100, 11s. for 50, 6s. for 25, good rooted layers. We have a fine stock of **GARDENIAS**, the best sorts in cultivation, from 1s. to 40s. each, Cash with Order.

E COLLINS and SONS, Cumberland Park Nursery, Wilsden Junction.

CLEARANCE SALE (at sacrifice) of

PALMS, DRACENAS, &c.

LATANIA BORBNICA and **PHENIX RECLINATA**, 12 inches high, 4s. per dozen, 30s. per 100. Package and carriage free.

LATANIA BORBNICA, **SEAFORTHIA ELEGANS**, **CORYPHA AUSTRALIS**, and **PHENIX RECLINATA**, 20 to 24 inches high, 1s. 6d. each, 16s. per dozen; same kinds, 2 feet 6 to 3 feet high, 3s. to 5s. each.

Handsome **PALMS**, 4 feet high, 18s. each, 6 feet high, 40s. each.

Twelve assorted **PALMS** and **DRACENAS**, averaging, with pots, 24 inches high, in wood case, free, 18s.; six do., 10s.

KENTIAS, 3s. to 21s. each.

DRACENAS, 24 inches to 5 feet high, 2s. to 40s. each.

Inspection invited.

GARDENER, Holly Lodge, Stamford Hill, N.

IF YOU CANNOT GET FRUIT TREES TRUE TO NAME,

Write to **GEORGE BUNYARD AND CO.**

IF YOU WANT ANY CHOICE SORTS that your Local Firms cannot Supply,

Write to **GEORGE BUNYARD AND CO.**

FOR FRUIT TREES by the Dozen, Hundred, or Thousand,

Write to **GEORGE BUNYARD AND CO.**

SEND INTO KENT, and get the **FINEST TREES**—No Starvelings, No Blight—at **GEORGE BUNYARD AND CO'S.**

ILLUSTRATED CATALOGUE OF FRUIT

TREES, 800 Kinds, Six Stamps.

SKELETON LIST—Names and Prices—also all Outdoor Stock, Gratis.

ROSE LIST, CONIFER and SHRUB LISTS, Free.

One Hundred Acres Nursery. Liberal terms.

GEORGE BUNYARD AND CO.,

POMOLOGISTS and GENERAL NURSERYMEN,

MAIDSTONE, KENT.

OLD-FASHIONED HEDGES.—English

Yews, bushy, and with a profusion of fibrous roots, 1½ to 2 feet, 6s. per dozen, 35s. per 100; 2 to 2½ feet, 8s. per dozen, 50s. per 100; 2½ to 3 feet, 9s. per dozen, 60s. per 100; 3 to 3½ feet, 12s. per dozen, 84s. per 100. Prices of larger sizes and other Evergreens, suitable for Hedges—e.g., Tree Box, Holly, Laurel, Privet, Cypress, Juniper, Thuia, &c., on application.—**RICHARD SMITH and CO.,** Nurserymen and Seed Merchants, Worcester.

H. I. HARDY'S NEW PRIMROSE

NOVELTIES.—Choice varieties of about thirty beautiful colours, from pure white to dark maroon. Strong plants, 5s. per 100, 45s. per 1000.

HARDY'S NEW "PRIMROSE POLYANTHUS" NOVELTIES, in about eight splendid colours, mixed.—These are very beautiful, forming magnificent trusses or flowers. Strong plants, 5s. per 100, 45s. per 1000.

POLYANTHUS.—Hardy's Finest Selected Gold-laced Show Flowers. Strong plants, 5s. per 100, 45s. per 1000.

STRAWBERRIES.—Vicomtesse H. de Thury, President, Sir Joseph Paxton. Strong plants, 2s. 6d. per 100, 15s. per 1000; ditto, in pots, 10s. per 100.

Cash. Extra plants for carriage. Package free.

H. I. HARDY, F.R.H.S., Stout Valley Nurseries, Bures, Suffolk.

LILIAM AURATUM.—Good, plump, sound

Bulbs, 6s., 9s., 12s., 18s., and 24s. per dozen.

All other good LILLIES at equally low prices.

Mr. **WILLIAM BULL'S** Establishment for New and Rare Plants, 536, King's Road, Chelsea, London, S.W.

TREES and SHRUBS for the Sea Coast.

CATALOGUE free on application.—**RICHARD SMITH and CO.,** Nurserymen and Seed Merchants, Worcester.

SPECIAL OFFER.—30 Acres of **RHODO-**

DENDRONS, Seedling, Hybrids and ponticum, 4 to 6 in., 6 to 9 in., 9 to 12 in., 12 to 15 in., 15 to 18 in., 18 to 24 inches. All good plants, at exceptional low prices. Apply to

ISAAC MATTHEWS and SON, The Nurseries, Milton, Stoke-on-Trent.

PHEASANT-EYE NARCISSUS (Poeticus)

for sale.—About 10 Bushels of Bulbs.—For price, apply, **JOHN NEIGHBOUR, Albion Lodge, Cranford, Hounslow.**

ROSES!! ROSES!! ROSES!!!—The best and

cheapest in the World. 40 choice Perpetuals for 21s. Purchaser's selection from 400 best varieties. CATALOGUES free on application. Ten acres of Roses, 100,000 grand plants to select from. Plant now.

JAMES WALTERS, Rose Grower, Exeter.

TO FRUIT GROWERS.—On offer, at the

Quarry Farm, Bardon Hill, near Leicester, a quantity of short useful **RASPBERRY CANES** (red). Would divide up into many thousand plants. There are 35 rows, covering about 2½ acres.

Price for the lot, on rail at Bardon Hill Station, to be sent to **J. B. ELLIS, The Gynsills, near Leicester.**

Offers by the thousand will be considered, if the lot is not disposed of.

The New Raspberry.

LORD BEACONSFIELD.

(A Seedling.)

The finest Raspberry and best cropper ever known. First-class Certificate, Royal Horticultural Society. Canes £2 per 100; 6s. per dozen. Trade supplied; Cash with Order.

A. FAULKNER, Inkpen, Hungerford.

100 Herbaceous and Alpine Plants for 25s.

RICHARD SMITH and CO'S Selection as

above contains a most interesting and valuable assortment of beautiful and Hardy Plants for the Border or Rock-work, which produce flowers and render the garden attractive all through the year. Descriptive CATALOGUE post-free for 6 stamps.—**RICHARD SMITH and CO.,** Nurserymen and Seed Merchants, Worcester.

BARR'S SPRING-FLOWERING BULBS

should now be potted for Indoor Flowering, or planted out in beds, borders, or naturalised in Orchards, Meadows, Woods, &c. CATALOGUE on application. Abundance of Bedding **HYACINTHS, TULIPS, CROCUS, SNOWDROPS, ANEMONE FULGENS, &c.,** in fine condition.

BARR and SON, 12, King Street, Covent Garden, W.C.

SPECIAL OFFER.—50,000 **RHODODEN-**

DENDRONS, all the early varieties, White and Scarlet, well set with buds, fine plants for forcing. Low prices. Apply to

ISAAC MATTHEWS and SON, Milton Nurseries, Stoke-on-Trent.

THE GARDENERS' ORPHAN FUND.

DONATIONS and SUBSCRIPTIONS

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FOR

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THE

Gardeners' Chronicle.

SATURDAY, NOVEMBER 24, 1888.

THE CHRYSANTHEMUM.

IT has been remarked by competent observers that the incurved varieties of the flower show some slight falling off as regards quality, while a corresponding advance has been noted in Japanese varieties. The progress of the latter during recent years has been marvellous, and one may well ask the reason for this phenomenon. The ground for it is not far to seek, as those who undertake the raising of new Japanese varieties are not bound down by any rules or to any form of flower or petal; the last may be narrow or the reverse, twisted, straight, reflexed or curled inwards, or all of them together on the same flower. The new seedling must be an object of beauty in itself, and commend itself to the public, who are willing to pay for it; but as usual with the demand comes the old cry of over-production; there are far too many candidates for popular favour—too many seedlings sent out from one firm. The good old English custom of selecting something like half-a-dozen new varieties from a large batch of seedlings to send out is being departed from here, as in other things. Last year as many as 130 new varieties were sent out as the production of one firm; but here again purchasers have to a large extent the selection in their own hands; they can refuse to purchase new varieties until they themselves have seen the flowers, or until they have been seen by some one competent to form an opinion. There are so many really good varieties already in cultivation, and most collections are already so overcrowded with names, that there cannot be any great hurry to increase their number. I act on this principle, and never purchase a new plant until I have seen it; others may not have so many opportunities to see and judge for themselves; but the horticultural Press well supplies this want.

A word as to the slow progress in raising new incurved varieties. As a matter of fact, there are not any attempts being made that I can hear of to raise seedlings from incurved flowers. The subject is talked about at the exhibitions every year, but no one seems to be enterprising

enough to make the attempt. I have been told that seeds cannot be obtained. Probably not, in this country; but there are other things besides *Chrysanthemums* of which no seeds can be obtained in England. They can, however, be obtained on the northern or southern shores of the Mediterranean. There is yet ample room in incurved flowers for greater diversity of colour, on the lines of more brilliancy, and, moreover, decided shades of crimson, pink, and rich purple are required, with the size and the form of *Empress of India*. Such flowers should be worth years of patient hybridising to obtain.

Mr. Holmes, with his keen insight into the fitness of things, has reminded us that for all practical purposes the year 1889 marks the centenary of the introduction of the *Chrysanthemum* into Europe. It had been introduced two centuries ago, and was also cultivated about the middle of the last century by Miller, of the Botanic Gardens, Chelsea. The plant was evidently lost to cultivation until it was re-introduced by a certain Blanchard, of Marseilles, in the year 1789. When it was introduced to England, I am unable to say—probably very soon after, for we find it was cultivated by Colvill, nurseryman, King's Road, Chelsea, in 1795: a purple-flowered variety flowered with him in November of that year, and it was figured in the *Botanical Magazine* for 1796. It has no distinctive name, and is merely designated *C. indicum*.

Mr. F. W. Burbidge, in his excellent treatise on the *Chrysanthemum*, states, in a note at p. 3, that the *Botanical Magazine* figure resembles in all respects very closely the variety named *Dr. Sharpe*. I have *Dr. Sharpe* now in flower, and have compared it with the plate, and the resemblance is very striking, and is equally marked in the half-opened buds. No other variety was known to Curtis as being cultivated in England. His remark, that "We rejoice in the opportunity afforded us of presenting our readers with a coloured engraving of a plant recently introduced to this country, which, as an ornamental one, promises to become an acquisition highly valuable," were prophetic.

If it is intended to commemorate the introduction of this plant by a centenary celebration, no doubt the united wisdom of those best able to judge will be called into requisition, and something be done worthy of the occasion. The probability is, that some extension of the ordinary flower-shows might be suggested; this is all very well in its way, and may be a good adjunct to something else. A Conference might be attempted, and a complete collection of varieties might be grown in one place. At a preliminary meeting held at the Crystal Palace, at which Mr. Sanderson presided, it was thought that sufficient time would not be available to organise the whole thing in one year, and that it would be better to celebrate the centenary in 1890. It was stated at the meeting that the plant was introduced from France to England in that year, consequently it would be even more suitable than the earlier date.

At some shows where I have acted as judge, the specimen plants have not been of such good quality as they were about fifteen years ago. Some varieties do not make very strong growth, and yet when well managed they make excellent specimens. A pretty variety named *Little Pet*, with bluish coloured incurved flowers; *Aurea multiflora*, yellow; *Lady Hardinge*, peach colour; *Antonelli*, *Dr. Sharpe* (reflexed), and one or two others are of this class, and should be grown from old roots. The plan is to grow the varieties required with tall stems to produce large blooms, and at this season of the year they will sometimes produce shoots from the old stems, an inch or two above the surface of the ground. The old stem should be cut over close to the top growth, the plant dug out of the pot with a trowel, and the shoots that are pushing from the base of the plant removed. It should be potted in a 7-inch pot, in good soil and be placed near the glass in a greenhouse. The plants should

be kept from frost during the winter, so that they may be kept growing in what may be termed a cool greenhouse temperature. They should be put into 9-inch pots, and about the end of May into 11-inch pots, and in these they will produce their flowers. Mrs. George Rundle, and the sports from it do best from cuttings put in at once. All the pompon section succeed best from cuttings. *J. Douglas*.

EUCALYPTUS VIMINALIS.

THE specimen figured at fig. 82 was obligingly sent to us by Captain Brown and the Rev. D. Landsborough, from the Island of Arran, under the name of *E. amygdalina*. On referring the specimen, however, to M. Naudin, of Antibes—who not only has a special *Eucalyptus* herbarium, but also cultivates a large number of species in the open air—we were informed by that eminent botanist that the specimen in question was *E. viminalis*. Turning to Baron von Mueller's *Eucalyptographia*, we find this called the *Manna Eucalypt*, by reason of the manna-like substance which exudes in drops from the stem in consequence of the puncture of a kind of grasshopper (*Cicada mœrens*). The manna in question is, however, of little medicinal value. The tree in a wild state extends through New South Wales, Victoria, and Tasmania, attaining a height in some cases of 320 feet, with a base of 17 feet in diameter. It grows in poor soil, and flowers when in a young state. The branches are slender and pendulous. The leaves are linear-lanceolate, and the flowers are borne in axillary three-flowered shortly stalked cymes. The flower-tube is obconical, the flower whitish. The tree from which our figure was taken was sown in 1872, and is now 30 feet in height and 16 inches in girth at 5 feet from the ground, and it would probably have been larger, but that it was transplanted ten years ago.

NEW OR NOTEWORTHY PLANTS.

LÆLIA PACHYSTELE, n. hybr. nat. (?)

MR. R. H. MEASURES has kindly sent me an inflorescence, originally three, then two-flowered, of a plant that is said to have the growth of a middle-sized *Lælia elegans*. It was imported by Mr. Horsman, Colchester, and appears to flower twice a year. "No one who has seen it here can tell us what to call it." These are the *ipsissima verba* of Mr. R. H. Measures.

The flowers are equal to those of a rather good *Lælia elegans*. The petals are broader than the sepals, and wavy, wholly light rose. The lip is very narrow. Side-lacinia long, narrow, nearly rectangular, white, with light purple borders, broadest on the projecting angles. Mid-line of the disc with a purple line from the base of the mid-lacinia to the base of the lip, then divided into two shanks. Mid-lacinia narrow, oblong, acute, projected, rose, with darker purple veins, which looks exceedingly pretty, and which gives a peculiar aspect to the plant. Column very plump, white, with purple on the back, and with two broad ligulate marks running from the stigma to the base. Pollinia very unequal. *H. G. Rehb. f.*

CATTELEYA CASSANDRA ×, n. hybr.

This is another of Mr. Seden's hybrids, for which I am indebted to Messrs. Veitch & Sons, of Chelsea, from whom I have just received a three-flowered peduncle. It was raised from *Cattleya Loddigesii*, fertilised with the pollen of one of the forms of *Lælia elegans*; itself a *Lælia-Cattleya*, that is, a natural hybrid between the two genera. The seed was sown in 1877; so that it has taken eleven years to reach the flowering stage.

At present the plant is said to have a stoutish rhizome, as in *L. elegans*, with seven sub-clavate or sub-cylindrical pseudobulbs, 7–9 inches long, and diphyllous. Leaves oval-oblong, spreading, 5–6 inches long. The flowers measure 3½ inches across,

the sepals are acute, the petals twice as broad, and more obtuse; all of a delicate rosy-lilac. The lip is very strongly three-lobed, and has much of the appearance of the mother plant; the side lobes very large, and the front one constricted at the base into a very short and broad claw, broadly rounded in front, and very much crisped. In colour this front lobe is bright amethyst-purple, while the side-lobes are nearly white; the exceptions being a little rosy-lilac at their apex, and more faintly along the margin behind; a little rosy-purple running down the centre of the lip, principally along the minute keels; and the radiating veins of a very pale yellow. The column is much like that of *C. Loddigesii* in shape, white, with a little rose down the face. Four of the pollen-masses are excessively rudimentary; doubtless due to the fact that it has three-fourths *Cattleya* blood in it. Except the front lobe of the lip the flower is very delicately coloured. *R. A. Rolfe*.

CYCNOCHES VERSICOLOR, n. sp.*

Something very like this was known to me nearly thirty years ago from a sketch. Much later came a description of a similar plant. Finally Sir Trevor Lawrence, Bart., M.P., P.R.H.S., surprised me in the most agreeable manner by sending me a seven-flowered inflorescence, whose comparatively short green rachis affords a fine contrast to the yellowish bracts. The pedicels are erect, the ovaries bent in a retrorse way. The sepals and petals are ligulate acute, petals a little broader. The colour is exceedingly interesting; it begins of a fine dark garlic-green, with darker veins, and a certain texture of velvet; finally, the whole is of a deep brown. The lip is quite characteristic; it is oblong acute, having an excavation between the middle and the base, and on each side is an erect introrse tooth. The inner surface of the lip is convex, the outside surface is quite flat; the colour is whitish, ultimately yellowish, with a few purple spots on the anterior half inside. The substance is very thick, and reminds me of ivory. The thin curved column is clavate at the apex, with three teeth at the apex behind. It is green, with some small black spots at the base. Sir Trevor received it from Brazil. The flowers are nearly equal to those of *Cynoches Egertonianum*, but are in a stiff upright raceme.

A *Cynoches* Haagii has been described by Barbosa Rodriguez (*Genera et Species Orchidearum Novarum*, 1882, p. 221). It is said to have a labellum obovatum acuminatum ventricosum. The sepals and petals are said to be spotted at the upper margin and the apex of the green column is stated to be white. Those are very considerable differences provided the terms are correctly used.

My first acquaintance with a species of this affinity was made by copying a sketch of Wallis', representing such a plant and with more than usual care Wallis noted what follows: "Very fine epiphyte; lip exceedingly thick, like china, with red spots and two processes. Sepals and petals reddish-green, shining like velvet. Column very thin, green, with small black spots. Not much smell. Bulbs and leaves of *Catasetum*."

Wallis represented a cross section of the lip, which shows a longitudinal keel on the mid-line underneath, and the two teeth on the inner surface are median. There is no indication of a groove between the teeth and the blade of the lip is almost circular and apiculate (not acute). There may thus be three nearly allied species. *H. G. Rehb. f.*

COLONIAL TOBACCO.—The London Chamber of Commerce, Botoiph House, Eastcheap, E.C., offers a prize for the best specimen of colonial grown Tobacco, of not less than 400 lb.

* *Cynoches versicolor*, n. sp.—Racemo paucifloro stricto; bracteis pedicellis longe non aequantibus flavis; pedicellis cum ovaris genueflexis; sepalis tepalisque cuneato-ligulatis acutis; labello eboraceo oblongo acuto, extus planissimo, intus convexo cum callis dentiformibus conniventibus geminis, supra excavationem antebasilarem; columna gracillima et apicem versus ampliata, apice postice tridentata. Ex Brasilia imp. ill. Eques Trevor Lawrence. *H. G. Rehb. f.*

NURSERY NOTES.

ST. OSYTH PRIORY.

VISITORS to Clacton-on-Sea (which is a rapidly "improving" and even now a very popular seaside resort), who are admirers of beautiful flowers, and interested in objects of historic antiquity, should not fail to visit the village of St. Osyth, with its ancient Priory, and the seed grounds of Messrs. Carter & Co., the well-known seed merchants of High Holborn. St. Osyth lies some four or five

miles a fine view of the German Ocean. It has a very extended and fine sloping beach, with an excellent pier nearly 1300 feet long. The houses are of superior character, and the streets, as well as the footpaths, are wide, the latter being mostly formed of cement. The streets are all planted with trees, as are also numerous avenues, which are expected to ere long form part of the town. The trees consist mostly of the Elm, the Lime, and species of the Poplar, and, notwithstanding the proximity of many of them to the sea, they all appear to be doing succeeding well, although several other species have, we believe, been tried, but which were not found to do so well.

is fixed a strong stake, which stands some 5 or 6 feet high, secured at the top and in the middle by a light wooden frame, of similar dimensions to the space on which the tree stands; by means of soft string the stems are secured to these stakes, in such a way as to prevent them from chafing upon the stakes, while a broad splint is perpendicularly fixed between each stake, and this effectually preserves the stems of the trees from external injury. Altogether, this appears to be a very cheap, and certainly a most effectual tree protector.

The seed-grounds of Messrs. Carter & Co. are some 100 acres or more in extent, and lie on each



FIG. 82.—EUCALYPTUS VIMINALIS: FLOWERS WHITE. (SEE P. 596.)

miles north-west from Clacton-on-Sea, and about the latter a few words may here be said. It is some seventy miles from London, and has, as it were, sprung into healthy existence as a watering place within the last fourteen or fifteen years. It is considered an exceedingly salubrious locality, on account of its invigorating breezes, pure air, combined with the advantages of an abundant supply of excellent water, a moderate rainfall, and its (so said) comparative immunity from violent atmospheric disturbances.

The town appears to be very judiciously laid out, with a southern aspect, and stands upon cliffs some 40 or 50 feet above the level of the sea, and com-

The Elm appears to be the tree most extensively used, and very close to the sea are several stunted specimens of some variety of this tree, having very small leaves, which at a distance have more the aspect of Scotch Firs than deciduous trees; these have evidently been hedgerow trees a few years ago. A line of Fig trees is also growing vigorously in front of the "Royal" Hotel, which is close to the sea, but they are bearing no fruit this season. The street trees are all planted on the margins of the footpaths, which are about 25 feet wide, and are thus placed at a proper distance from the buildings. Each tree stands in the centre of a small triangular space some 18 inches in the side, and in each angle thus formed

side of the public road, just before entering the village of St. Osyth, and are entirely devoted to the production of flower-seeds, and of choice culinary vegetables. The land is light but rich, and doubtless well adapted to this purpose; and notwithstanding the cold and sunless character of the present season, which can hardly be considered to have been favourable for the purpose of seed growing, few if any of the crops at the time of our visit (early in August) appeared to have suffered from the unfavourable weather.

Those of your readers who may have seen and admired beds or isolated plants of some of our finest annual flowers, may imagine the effect pro-

duced by something like a quarter or even half an acre of such varieties as some of our finest Delphiniums, Godetias, Phlox Drummondii, &c. Conspicuous among many fine things we were struck by a very splendid variety of Godetia named the Lady Satin Rose, not yet sent out, as well as a beautiful variety of the same species named Princess of Wales, and several others. There was also a great breadth of the pretty Rhodanthe Manglesii, and a new variety of the same named Purple Queen. Mimulus grandiflorus and Mimulus Brilliant, several very fine varieties of Nasturtium, including Cloth of Gold, with very pretty flowers and still prettier golden foliage; together with Helichrysum Fire Ball, Eschscholtzia Mandarin, Antirrhinum Ruby Gem, not yet out; Mimulus Brilliant, Viola lutea, and several fine bedding Pansies, including Carter's fancy striped, Lord Beaconsfield, and a very fine pure white variety. There were also immense breadths of the finest varieties of Mignonette; and the newest and best sort of Sweet Peas. These, with many other varieties of the latest introduced, and best annual and other flowering plants, too numerous to mention, are cultivated here with the greatest care, and also subjected to a vigilant system of "roguing"—a term well understood in the trade, and which means the prompt removal and destruction of all plants which may happen to show symptoms of inferiority, or deviation from the true type, in form, colour, or habit of growth.

Nearly all, however, at the time of our visit, were aglow with bright and beautiful colours, and many of them diffusing the most delicious perfume, rendering this approach to the ancient village of St. Osyth so pleasant that the traveller may well be excused if he lingers in passing through the same. To the kindness of Mr. Gardener, who has for some twenty or more years been the successful manager of this extensive and interesting seed farm, we were indebted for what our time permitted us to see of the same.

THE VILLAGE AND MANOR HOUSE.

St. Osyth is a somewhat large and very ancient village. Its Saxon name appears to have been "Chick," and it derives its present name of St. Osyth from the Lady Osyth, who was the daughter of Frithwald, the first Christian king of East Anglia, and of his wife Walburga, who was daughter to Penda, king of Mercia. She is said to have founded a church and a nunnery here, the latter being supposed to have been one of the earliest monastic establishments in England. She was murdered, and her nunnery plundered and destroyed by the Danes, about the year 653, in one of their not infrequent incursions on the east coast.

The church of St. Osyth stands in the village, and is a very ancient structure, and it is also said to be one of the largest in the county of Essex, originally built of rubble and flint, in the same style as the external walls of the ancient Priory, from which it is only a short distance. The tower of the church is a very massive structure, and the interior arrangement consists of a nave and two aisles, with a very lofty timbered roof, while, in the centre of the chancel is a singular inclosure of an oval or horseshoe form; this is known as the fold, into which communicants enter and kneel. It is said there is only one other church in England in which this is to be found. The church also contains many sculptured monuments to the memory of former owners of the manor and Priory, &c.; and conspicuous on the north wall is one to the memory of the founder of Charing Cross Hospital, while a window on this wall also presents a figure of St. Osyth, and another on the south wall represents her martyrdom.

The Priory and its manor appears to have had many owners. King Canute granted it to the great Earl Godwin, who, it appears, gave it to Christ's Church at Canterbury, and soon after the Norman Conquest it became the property of the Bishops of London, one of whom founded the monastery. After the dissolution Henry VIII. granted it to his favourite, Thomas, Lord Cromwell, and after his

execution it again reverted to the crown. It subsequently came into the family of Darcy, and Lord Darcy was created Earl Rivers in the year 1611.

It afterwards passed by marriage to the third Earl of Rochford, who built the principal part of the present mansion. In 1857 the Priory and estate became the property of the present owner, Sir John Henry Johnson, who has made considerable alterations and greatly improved the property.

The gardens, pleasure grounds and glass structures now cover some 9 acres of land, and everything is kept in excellent order. The mansion is in the form of a vast quadrangle, and being built at sundry periods is of various styles of architecture. The noble gatehouse or entrance to the grounds is a very handsome structure in the late Norman style. It is built of flint and hewn stone, covered with beautiful tracery. On the right are the extensive ruins of the ancient monastery, the chapel of which has been restored, and is unique in character and in good preservation, as is also a lofty tower from which charming views are to be obtained of the surrounding country, including the estuary of the Colne and Blackwater, the German Ocean and the island of Mersea.

The gateway alluded to faces the south, and towards the east, in the ancient wall, may be observed what must have been the principal entrance to the monastery, but which is now built up. The glass structures consist of a central conservatory, from which extend to the right and left houses for the cultivation of Grapes, Peaches, and other exotic fruits. The conservatory contains some fine specimens of old-fashioned plants in good condition. On a wall near to this, some 30 or more feet high are trained some very fine climbing plants, including a magnificent specimen of the *Wistaria sinensis*, which, in addition to clothing a large portion of this lofty wall, extends itself at a right angle from the same, so as to form a canopy or covering for a broad walk, and must, when in full flower (which was lately the case) have been an object of great beauty. Another portion of this high wall is covered to the top with healthy Fig trees bearing abundance of fruit, which, notwithstanding the unfavourable season, had every appearance of ripening soon. The grounds also contain many examples of beautiful trees, such as a gigantic Tulip tree (*Liriodendron tulipifera*), supposed to have been planted more than a hundred years, and blooming profusely; also a very fine example of the *Cedrus Deodara*, which was planted in 1861. On the west side of the mansion is a fine geometric flower garden, the beds of which are well filled with the most choice varieties of bedding plants, adjoining which is a fine lawn or tennis ground. This very beautiful and interesting garden establishment has for many years been under the care and management of Mr. Howard, and the excellent condition in which all is kept does him credit, while his intelligence and civility leave a very favourable impression upon all who may visit St. Osyth Priory. P. G.

THE DOUGLAS FIR IN SCOTLAND.

(Concluded from page 589.)

ASSUMING, then, that the average tree in the Taymount plantation will show a future development similar to that shown on the above mentioned cross-section, I have endeavoured to forecast the volume of solid wood, or growing stocks (3 inches and upwards in diameter), which an acre of land belonging to the first quality is likely to contain at various periods.

In order to facilitate my task I shall commence by giving such data for the Silver Fir, obtained by careful and extensive measurements on the Continent. The volume, or cubic contents of a standing tree, is best calculated by the following formula:

$$s \times h \times f.$$

Here s represents the sectional area taken at a convenient height above the ground, usually the height of the chest of a man, or about $4\frac{1}{2}$ feet; h indicates the height or length of bole; and f indicates a

certain coefficient called "the form figure." The product of $s \times h$ represents a cylinder with a base equal to that of the tree at 4 feet 6 inches from the ground, and a length equal to the height of the tree, the volume of which is considerably larger than that of the tree, as the latter tapers from the base upwards; hence f is a fraction of 1, and as the product, $s \times h$, is thus reduced by multiplying it with f , the latter is sometimes called the reducing factor.

During late years a large number of Silver Fir woods, of varying age, from early youth up to maturity, have been carefully measured, arranged in different qualities—best, middling, and inferior—by ascertaining their height, sectional area at height of chest, and their cubic contents; by dividing with the product of height by sectional area ($h \times s$) into the volume, the form figure has been ascertained. The tables thus constructed can now be applied to the measurement of standing woods without any fellings whatever, by merely measuring the height and sectional area, and by taking the form figures from the tables.

The following extract shows the mean volume of solid wood in a well-stocked Silver Fir wood growing in a locality classed as belonging to the first quality up to an age of 140 years, beyond which age no figures are available:—

Age, yrs.	No. of trees per acre.	Mean ht., feet.	Sectional area at height of chest, for square feet per acre.	Form figure of solid wood.	Volume of solid wood (3 inches diam. and upwards) cubic feet per acre.	Mean Tree. Sectional area, square feet.	Diam. in.
32	1745	17	93	·65	1,032	·053	3.1
50	931	42	177	·47	3,458	·190	5.9
75	433	75	243	·47	8,532	·561	10.1
100	213	97	295	·46	13,291	1·385	15.9
125	126	109	335	·45	16,291	2·659	22.1
140	101	114	353	·44	17,720	3·495	25.3

In order to prepare a similar table for Douglas Fir, it is necessary to ascertain the total sectional area per acre, the mean height, and the form figures for the years 50, 75, 100, 125, and 140 years; and this, with the scanty material at present available, can only be done in a rough and preliminary manner.

Sectional Area.—We know that the sectional area of a dominant (or leading) tree is as follows:—

At the age of 50 years ...	=	1·115 square feet.
" 75 " ...	=	1·847 "
" 100 " ...	=	2·845 "
" 125 " ...	=	3·715 "
" 140 " ...	=	4·307 "

In order to ascertain the total sectional area per acre at these periods, we must ascertain the number of trees which a well stocked acre is likely to contain at the same periods. We know (1) that a well-stocked acre contains 202 Douglas Firs at the age of thirty-two years; (2) that 101 Silver Firs 140 years old, of a mean sectional area of 3·495 square feet, find room on an acre; (3) that generally a Douglas Fir requires at least as much room as a Silver Fir of the same sectional area, and, in fact, somewhat more, owing to the somewhat more spreading nature of the branches; and (4), that a Douglas Fir 140 years old shows a sectional area of 4·307 square feet.

Taking these facts into consideration, the following numbers of Douglas Firs per acre have been estimated:—

At the age of 32 years ...	202
" 50 " ...	150
" 75 " ...	125
" 100 " ...	100
" 125 " ...	88
" 140 " ...	80

By multiplying these numbers with the mean sectional area per tree, the total sectional areas of all trees per acre are obtained.

(b.) **Height.**—The following facts are at our disposal:—(1). A Douglas Fir thirty-two years old has a mean height of 60 feet; mean annual height growth = 2½ inches; (2), a Douglas Fir fifty-seven years

old has a mean height of 90 feet; mean annual height growth (from thirty-second to fifty-seventh year) = 14 inches; both grown in Perthshire. (3). Mature Douglas Firs in the most favourable localities of North America are reported to reach a mean height of 213 feet; such trees are often up to 500 years old, but it is not known, at what age the height growth ceases: let us assume that it is very slight after the age of 250 years. With these facts before us, the heights up to an age of 140 years may be estimated as follows:—

At the age of	32 years	...	60
"	50 "	"	82
"	75 "	"	105
"	100 "	"	125
"	125 "	"	141
"	140 "	"	150

(c.) *Form Figure.*—The form figures for Silver Fir are:—

At the age of	32 years	...	65
"	50 "	"	47
"	75 "	"	47
"	100 "	"	46
"	125 "	"	45
"	140 "	"	44

The form figure of the Taymount plantation shows 39 for an age of thirty-two years. This is very considerably below the form-figure for Silver Fir, and it is in accordance with the facts of the case. The Douglas Fir is a much more tapering tree than the Silver Fir, and the highest form figures which can be expected may perhaps be placed as follows:—

At the age of	32 years	...	39
"	50 "	"	38
"	75 "	"	38
"	100 "	"	37
"	125 "	"	36
"	140 "	"	35

By utilising the figures thus estimated the following table for the Douglas Fir has been calculated:—

Age, yrs.	No. of trees per acre.	Mean ht. in feet.	Sectional area at height of chest, square feet, per acre.	Form figure for solid wood, cubic feet, per acre.	Volume of solid wood (3 diam. and upward), cubic feet, per acre.	Sectional area, square feet.	Mean Tree, Diam. in.
32	202	60	158	34	3,738	782	17.0
50	150	82	167	34	5,204	1,115	11.3
75	125	105	231	33	9,217	1,847	18.4
100	100	125	288	37	13,322	2,885	23.0
125	88	141	37	38	16,509	3,715	26.1
140	80	150	345	35	18,112	4,307	28.1

Let us now compare the volume of the Douglas Fir with that of the Silver Fir:—

Age.	Growing stock, per acre in cubic feet.		Mean annual increment in cubic feet per acre.	
	Douglas Fir.	Silver Fir.	Douglas Fir.	Silver Fir.
50	5,204	3,458	104	69
75	9,217	8,532	123	114
100	13,322	13,291	133	133
125	16,509	16,291	133	130
140	18,112	17,720	129	127

This table indicates that under a rotation of up to about ninety years the Douglas Fir, owing to its more rapid development in early growth, yields larger returns of solid wood than the Silver Fir. Under a rotation of 90 to 120 years the returns in volume are about equal. Under a rotation of more than 120 years the Douglas Fir will again yield larger returns of volume than the Silver Fir. The latter is of little consequence in this country, because no landed proprietor would think of working his plantations under a rotation of more than 120 years, unless he had a particular fancy to see large trees on his estate. Attention must also be drawn to the fact that the mean annual increment culminates between the years 100 and 125, so that a rotation of,

say, 110 to 120 years will yield, in the long run, a larger number of cubic feet of solid wood, than either a shorter or longer rotation, both in the case of Silver Fir and, as far I can judge, also of Douglas Fir.

The above data, it must always be remembered, refer only to the final cuttings. I have no data whatever which would enable me to compare the intermediate returns (thinnings) of Douglas Fir and Silver Fir. I may also draw attention to the fact, that the numbers of cubic feet given above refer to the actual volume of solid wood. In order to obtain the number of cubic feet calculated from the quarter girth, as is usual in this country, the numbers must throughout be reduced by about one-fourth (more accurately 22 per cent.).

I have compared the returns of the Douglas Fir with those of the Silver Fir, because we possess accurate tables giving the volume-yield of the latter at different ages. It would have been more to the purpose to substitute the Larch for the Silver Fir, but unfortunately the laws of increment of the former have not as yet been so minutely studied and recorded as in the case of the latter. So much, however, is known, that the Larch develops much more rapidly than the Silver Fir during youth, and that it yields larger returns of solid wood under a rotation of seventy-five years, and perhaps even eighty years, in favourable localities; under a higher rotation the volume yield of the Silver Fir is greater than that of Larch. Hence it may be safely said that under a rotation of seventy-five and perhaps even eighty years the Larch will yield as much solid wood as the Douglas Fir whenever they are grown in regular fully stocked woods, and in localities of equal quality—with this difference, that the material yielded by the Douglas Fir will consist of a smaller number of trees per acre, with a greater mean diameter per tree.

The laws of increment of Scotch Pine are well known. On good localities, like that of Taymount, the growing stock of a fully stocked acre compares as follows with that of Douglas Fir:—

Age.	Volume of solid Wood per acre, in cubic feet.		Mean annual increment per acre, in cubic feet.	
	Douglas Fir.	Scotch Pine.	Douglas Fir.	Scotch Pine.
50	5,204	5,600	104	112
75	9,217	7,900	123	105
100	13,322	9,300	133	93

Under a rotation of fifty years Scotch Pine may even yield a little more material than the Douglas Fir, but later on it drops considerably behind.

Quality of the Timber.—The next point of importance is the quality of the timber. The wood of the Douglas Fir has a great reputation, and in America its quality is believed to be equal to that of Larch timber. In how far the Douglas Fir grown in this country will come up to that standard remains to be seen. The larger sized trees so far cut on the Scone estate have been freely bought at the same rates as those usually paid for Larch, but sufficient time has not elapsed to show the comparative merits of home grown Douglas Fir and Larch timber.

A few words must now be added with regard to the *safety of production*. First of all it is an undisputed fact that Douglas Fir can, in this country, only be successfully grown in sheltered localities, because its leading shoot, and even the lateral branches, are very liable to be broken by wind. This reduces the area suitable for its cultivation very considerably.

Then there can be no doubt that the Douglas Fir, in order to yield large volume returns, requires good fertile and fresh or moist soil, in fact, soil on which any other species will produce a large volume of timber. Such land can, moreover, be used to greater advantage for field crops. What we specially require are species which will do well, or at any rate fairly well, on lands which are not suitable for field crops.

Finally, it has been said that the Douglas Fir is not exposed to any *disease*, while the Larch, for instance, suffers so much in this respect. With regard to this point, it will be as well not to shout until we are safely out of the wood. It will be remembered that the Larch disease did not show itself in Scotland until about sixty years ago. Only quite lately Mr. McGregor, who has been on His Grace the Duke of Athol's estates for more than forty years, pointed out to me, that he has never seen the Larch cancer on any of the old Larch trees, except on those parts of the trees which have been formed during the last sixty years. This certainly seems to indicate that the disease did not exist before about the year 1820.

No doubt exists now that the Larch cancer is the result of the ravages of a fungus (*Peziza Willkommii*), the spores of which enter the tree through wounds which were caused by insects (aphis), frosts, violence, &c. Only a few days ago, and after I had commenced this article on the Douglas Fir in Scotland, I saw in a German forest journal a notice of the discovery of an injurious fungus on the Douglas Fir, Dr. von Tubeuf, a pupil of the celebrated pathologist, Dr. R. Hartig, of Munich, has now described a fungus, *Botrytis Douglasii*, which is parasitic on the Douglas Fir: it has been noticed during the last ten years in several widely separated localities in Germany on the trees in the experimental plantations which have been made of late years. As far as is known at present the fungus attacks in the first place the young shoots, the needles of which turn brown or gray, the whole being ultimately spun over with mycelium; it then extends and kills ultimately the plants. It has also been found that this same fungus can be cultivated on two to six year old plants of Silver Fir, Spruce, and Larch. Dr. von Tubeuf found, as a general rule, that those Douglas Firs were specially attacked which grow in fully stocked areas, so that the branches of the trees interlaced; and in these cases the lower branches were more attacked than those higher up. He also noticed that free standing trees were free of the disease, and he naturally draws the conclusion, that infection depends on a high degree of moisture, such as is found in dense woods, while free-growing trees, exposed on all sides to drying air currents escaped. Now, what does this mean? Simply that the Douglas Fir must be grown in thin open woods, and if so, good-bye to any high returns per acre, such as Silver Fir, Larch, or even Scotch Pine will yield.

Generally Dr. von Tubeuf adds some very sensible remarks, of which I give the following extracts. He says:—

"In introducing an exotic species, the first question should be whether, if grown in the same locality, it possesses any real advantages over our indigenous species, either in consequence of a superior quality of wood, rapid growth, large dimensions, active reproductive power, &c., or by more successfully resisting any unfavourable conditions of the soil or climate, or by being less subject to natural enemies, such as game, animal or vegetable parasites, &c. A further most important question is, whether with the exotic tree we are likely to introduce new enemies to our indigenous trees; and in this respect we need only remind the reader of the imported enemies of the Potato, the Colorado beetle, the enemies of the Vine, &c.

"Of our own enemies of trees, a large number attack without distinction the exotics lately introduced, Curculio, Bostrychus, cockchafers, caterpillars and beetles attack exotics like indigenous trees; *Trametes radiciperda* (one of the most formidable of fungi) destroys the wood of the Douglas Fir like that of any other species."

These words deserve serious consideration. It is more than probable that the Douglas Fir will, with us, in the course of time, develop its full share of enemies, if not more, considering that it is an exotic species.

Before concluding I desire to express a hope that my object in publishing these notes on the Douglas Fir may not be misunderstood. The cultivation of

the tree in Great Britain and Ireland looks at present very encouraging, and I trust that experiments will be continued; but I deprecate altogether rushing into extensive plantings, as advocated by the correspondent of the *Perthshire Constitutional*, until time has shown that the tree really deserves to supersede the species hitherto cultivated by us, and of which we know what to expect. My personal opinion is that the Douglas Fir will just as little revolutionise our sylvicultural operations as the Weymouth Pine has been able to do, though great things were expected of it at one time. There is a great difference between nursing up a single tree in a fine soil and under otherwise favourable conditions, and the growing of a species on a large scale for economic purposes; in the former case only exceptional results present themselves to the eye, while in the latter case averages must be looked for and reckoned with. *W. Schlich, Cooper's Hill, October, 1888.*

ORCHID NOTES AND GLEANINGS.

HYBRID ORCHIDS AT THE DELL, EGHAM.

It is at such a time as the present, when there is a hiatus in the supply of Orchid flowers, that the value of some of the hybrids of Messrs. J. Veitch & Sons (so far as the showier genera are concerned) is apparent. Viewing the collection belonging to Baron Schroder this week, the houses gay with beautiful flowers, supplied for the greater part by the hybrids, the thought involuntarily arose—What a difference it would make if all these home-raised garden plants were non-existent. The blooming period of the great section of *Cattleya* and *Lælia* is over until the flowers on the specimens of *Cattleya Trianæ* expand; the grand masses of coloured and white *L. anceps* (among which are several *L. a. Dawsoni* with six to seven spikes each), producing their wealth of bloom, and the other late winter-flowering things appear, yet here was a fine display of bloom which, although varied, had been running concurrently with the show of imported species, and now remained to carry on until others came. Viewing these hybrids in flower, one is struck with their peculiarly intense brilliancy and richness of colour, which in most cases has surpassed that of the parents. The favourite genus, *Cypripedium*, now so rich in hybrids, gives a great variety of handsome things, whose individual beauties increase in proportion as the plants gain in strength.

At present at The Dell a good opportunity occurs to see together a good plant of the rare *C. Fairrie-anum* which has had five flowers, and beside it a large specimen of *C. Arthurianum* ×, a variety the produce of the first-named and *C. insignis*; and also *C. vexillarium* ×, the result of the same crossed with *C. barbatum*. All three have lovely flowers, the hybrids having the charming curves of outline of *C. Fairrie-anum*. *C. cœnanthum superbum* ×, too, stands out as a leading variety; and *C. Harrisianum superbum* × is the finest of the section. Many hybrids of *C. Sedeni* × are in bloom, as well as other fine species and hybrids, of which *C. Charles Canham* ×, if not showy, is at least a massive and distinct flower.

Of hybrid *Cattleyas* and *Lælias*, *C. Victoria*, which is here in flower, is a fine thing, resembling *C. exoniensis* ×, but with a greater lip expansion; *Cattleya Dominiana* ×, a cross between *C. maxima* and *C. intermedia*, was bearing handsome flowers, resembling the charming *C. Harrisii*, a species which has also bloomed at The Dell, and which has *C. Mendelii* for one of its parents. The latter was raised by the late Dr. Harris, of Lamberhurst, whose hybrids have passed into the hands of Messrs. J. Veitch & Sons, and who also raised *C. Lamberhurst* hybrid = *C. citrina* × *C. intermedia*, both of which, shown by Baron Schroder, were certificated at the Royal Horticultural Society's meeting, October 23 last. *Cattleya Novelty* ×, an exquisitely coloured flower, and the beautiful *L. Dominiana* ×, *C. porphyrophlebia*,

and others were just out of bloom, while well-advanced in bud were large plants of *L. Bella* ×, *L. Veitchiana* ×, *L. Canhamiana* ×, *L. lilacina* ×, *C. Mastersonia* ×, *C. fausta*, *C. Bella*, and others. The handsome little *Sophro-Cattleya Batemanniana* has flowered here several times, but the still more interesting Veitchian cross between *Sophronites grandiflora* and *Cattleya Trianæ* has unfortunately dropped its buds.

The *Calanthes* now make a fine show, but the bright magenta *C. Veitchii* *superba* holds its own among them all, and makes the best show by reason of its being grown in quantity. Other hybrids were remarked, the best white being *C. Hallii* ×, which, as seen here, is purer in colour than either *C. Cooksonii* or *C. Barkerii*, which were placed beside it. *C. Alexandræ* ×, *C. lentiginosa* ×, and *C. Sandhurstiana* × are finely-coloured varieties and the beautiful hybrid cross between *Calanthe* and *Phaius*—*Phaio-Calanthe Sedeni*—bore a stout spike of its beautiful creamy-white and pink flowers.

Among the hybrid *Dendrobies* rendered so popular by the *D. heterocarpum* hybrids, of which *D. splendissimum grandiflorum* × is the best, the perennial flowering *D. rhodostoma*, with its rich claret-crimson-tipped petals, is profusely in flower; *Dendrobium Phalenopsis superba*, too, is in flower, and is worth a journey to see.

In flower were *Epidendrum Wallisii*, a fine variety; an autumn-flowering *C. labiata*, which for richness of colour in the labellum far excels the original variety; *Cypripedium Argus nigro-maculata*, the best variety of that species; and the very rare *Odontoglossum Warscewiczii*, a plant with eight spikes in bud. Considering the varied collection, and the large number of varieties difficult to grow, Mr. H. Ballantine keeps The Dell collection up to the best possible mark of excellence, and its generous owner gets the gratification from his plants which he so well deserves. *J. O.E.*

PHAIUS CALLOSUS.

Besides *P. grandifolius*, which is one of the best known Orchids, and *P. Wallichii*, a very meritorious species, there are several other species of *Phaius* fully deserving of attention, but which are rarely met with. One of them is *P. bicolor*, which was noted in these columns a few weeks ago, and another is the subject of this note. *P. callosus* has long been known to botanists, and reference is made to it in the volume of the *Gardeners' Chronicle*, for 1848. A plant of it which was imported from Java last year is now flowering at Kew. The flowers measure 3 inches across, and on the plant under notice are borne on a stout radical scape 18 inches high, which carries eight flowers; fully established plants, however, would probably produce double or treble that number. The sepals and petals are broadly lanceolate, and of a dull reddish-brown, the tips being whitish; the lip is tubular, the front portion not being so spreading as in *P. grandifolius*; it is of a yellowish-white, tinged with pink, and is slightly pubescent.

By growing the four species I have mentioned above, all of which require the same general treatment, a succession of flowers could be kept up for probably ten months in the year, and this, with plants of the stately and effective appearance of *P. grandifolius* would be of no small advantage for conservatory decoration. *W. B.*

COLOGYNE OCELLATA.

An exceedingly pretty species with flowers much resembling those of *C. corymbosa*; in the latter, however, the flower-scapes are produced along with the young growth, whereas in *C. ocellata* they rise from the apices of the developed pseudobulbs. The species is figured in the *Botanical Magazine* (t. 3769), but the figure does not convey a just idea of its characteristics. The flowers are 2½ inches in diameter, and three or four occur on a raceme. The sepals and petals are of pure white; the lip, the side lobes of which enclose the column, has also a white ground, but is marked on the middle lobe with two round, eye-like yellow spots; each side lobe being

also marked with a blotch of yellow and striped with reddish-brown. It is stated in the *Orchid Grower's Manual* to flower in February and March, but several plants are now in flower at Kew. It may be grown in pots of fibrous peat and sphagnum, but it succeeds equally well when grown on rafts and suspended from the roof, in which case peat fibre should be fastened about the roots and sphagnum placed on the surface. Being from Northern India it requires cool, moist conditions. It was introduced in 1822. *W. B.*

TRICHOPILOIA TORTILIS.

Basket or pot culture suits these plants well, but if well elevated above the pot's rim they perhaps flower most abundantly in this manner. In potting, above all, provide good drainage, and for soil use good fibrous peat, through which may be worked some moderately-sized nodules of charcoal, which will allow the roots to penetrate it better, and at the same time assist in carrying away the water more quickly. The species is a free-growing plant, which requires a medium supply of water to its roots during the season of growth, but it enjoys an atmosphere well charged with moisture; and although the water supply to the roots must be considerably reduced through the winter months, it must never be entirely withheld, as the slightest amount of shrivelling is injurious. This plant should be grown at the cool end of the *Cattleya*-house, well exposed to the sun and light, but should have the sun screened from it during the hotter part of the day, in order to preserve the colour of its foliage, which forms such an admirable background for its blossoms. It is not very liable to the attacks of insects, but scale, and even thrips, will sometimes affect it, more especially if the plant is in a slightly bad state of health; but watchful care on the part of the cultivator will prevent these pests from gaining a lodgment. The plants may be increased, if necessary, by division; but it is far better to have one fine plant than several small ones. The division should be made just as the new growths appear, and several old bulbs should be left at the back of the leading growth. The divisions may be potted, and treated in exactly the same manner as the established plants. "*Orchid Album*," October.

CYPRIPEDIUM FITCHIANUM

is a distinct and pretty variety, and compact in its habit. The leaves are oblong acute, from 4–6 inches in length by about 1½ inch in breadth, and prettily variegated; the ground colour is greyish-green, marbled and spotted with deep olive-green. The scape rises well above the foliage, and bears a single large and handsome flower. Dorsal petal somewhat ovate cuneate, white, conspicuously veined with bright green, the lower sepal being similar in colour, but smaller; petals long and strap-shaped, with blunt ends, green towards the base, the apical portion and the margins being suffused with deep red, and bearing a few black hairy warts on the edge; lip large, dull red, veined in front with green, the inner surface profusely spotted with dots and spots of red. It blooms in the winter months, and continues in perfection for fully six weeks. "*Orchid Album*," October.

THE RELATION BETWEEN BLOSSOMING AND THE DEVELOPMENT OF TUBERS IN THE POTATO.*

In the climate of Germany the blooming of different varieties of Potatoes is very much restricted. Most of the varieties do not flower, excepting here and there in the course of years; a small number only flower regularly and bear fruit. It is not so in Chili, the habitat of the Potato. There it flowers abundantly, but the tubers remain small, while in the temperate zone the formation of the tubers is favoured at the expense of fertilisation.

* By E. Wollny, *Forsch. auf d. Geb. der Agrikulturphysik*, x., pp. 214–218.

This fact seems to indicate a sort of balance between the two modes of reproduction by the tubers, and by the seeds: the energy of the one seems to bring about the decadence of the other. In fact, Knight and Langenthal have found that they may increase the blooming by detaching the young tubers as they appear. Inversely, they found that suppressing the flowers favoured the development of the tubers of many varieties. An anonymous English

the number as well as size of the tubers. However, the early varieties, and the plants which had not been topped till late, gave a contrary result, one crop being poor, probably because there remained some little time between the operation and the maturity of the tubers, and the season had been especially dry from July 14 to August 25.

These experiments enable us to understand why the Potato does not thrive alike in Chili and Ger-

behind a screen of a solution of sulphate of quinine. But it seems to us that it is necessary to divide the problem into two, and to distinguish one immediate influence and another indirect influence, the effect of which is itself accumulated by heredity, in order to become a race-characteristic. These two features necessarily combine, and act in the same way in our country. We do not think, however, that these things are brought about by purely physical influence.

There are, in fact, many examples of plants being reproduced artificially or naturally by budding, root grafting, tubers, &c., and which in flowering do not produce fruit, or which, producing fruits, are none the less sterile, as seeds are not formed in them. *Lysimachia nummularia*, a creeping plant; the Tarragor, which flowers but does not set seed; Garlic rocamboule, which produces bulbs in place of flowers; a variety of *Ficaria ranunculoides*, which produces tubercles in the axils of the leaves; and Sugar-cane and Bananas which are nearly always sterile. *Abstract in Annales Agronomiques*, xiv., pp. 383-4.

CALANDRINIA OPPOSITIFOLIA,

S. WATSON, *sp. nov.*

THE contrast between the rich deep maroon of the so-called *C. umbellata* and the pure white or rose-blush of the present species is striking in the extreme, and as we have no reason to doubt its comparative hardiness, it will, no doubt, prove a great acquisition to the outdoor garden. The plant from which the sketch (fig. 83) was made was grown through the winter in an unheated house, and, in consequence, may be a little drawn, although the description from wild plants gives the scape as 3-10 inches high. The tuberous root is very thick and fleshy, the lower leaves oblanceolate, narrowed to the scaly margined underground base; from 2-3 inches long, thick, succulent. The flower-stem is branching, with one terminal three-flowered umbel; the pedicels 1 or 2 inches long, sepals round, short, acutely dentate; flowers over 1 inch in diameter, pure white, in some blush-rose, the latter especially very lovely. It was collected by Thomas Howell at Waldo, Oregon, and in the coast mountains of Del Norte County, California, near Smith River, and published in the *Proceedings of the American Academy of Arts and Sciences*, vol. xxii., p. 355. D.

FRUIT REGISTER.

PEARS.

It would be scarcely safe for a gardener to limit his varieties to fifteen, in view of the uncertainty of cropping in some of those named by Mr. Sheppard in these pages on November 10. I would like to add Jargonelle, a Pear which everyone likes; Eyewood, piquant in flavour, and a good grower and cropper. In both of these the spurs are naturally long, and should be shortened only when they have become unsightly. I think the Pears with long spurs and long stalks to the fruits usually have pendulous blossoms, and are thus rendered less liable to injury from snow and frost when open. Beurré Diel is an excellent hardy Pear, and Marie Louise d'Uccle is also good, and equally hardy; Monarch should not be omitted; Hacon's Incomparable also, where it does well, is welcome for its tender flesh and pleasant flavour. It usually crops well every other year; but by thinning out the fruits when too abundantly borne, this Pear, and others with the same peculiarity, may be made to crop fairly well every year when not prevented by frost from setting their blooms. Beurré d'Aremberg is another variety which bears well and pretty constantly. Well grown and ripened it is excellent, but as it is a very free setter the fruits ought to be thinned on wall trees, pyramids, &c. Nouveau Poiteau and Easter Beurré can hardly be omitted, although the period at which



FIG. 83.—*CALANDRINIA OPPOSITIFOLIA*; FLESH-COLOURED.

author has obtained by this method an increase in harvest of 2670 lb. per acre.

Wollny recognises that, from his experiments, the development of the flower is prejudicial to that of the tubers. Experiments were conducted in 1886 on many varieties that produce flowers. Four plots were planted with each variety, one acting as a duplicate or control, being left to itself; the inflorescence on the other three was cut at three different periods. The inflorescence oftenest cut off produced the crop of greatest weight; it also exercised an influence on

many. It is probable that dryness and sunlight induce bloom, and humidity, and a sky more or less cloudy, the formation of tubers. In fact, in dry years a great number of varieties flower, while the same varieties do not bloom when the weather is moist and the sky is obscure.

The influence of light upon the production of flowers is a fact that has been long known, and very recently Sachs has shown that it is the chemical rays which provoke flowering. Plants of *Nasturtium*, a flowering plant of the first class, produced no flowers

the latter ripens in store is very uncertain, and Nouveau Poiteau is in season with Marie Louise.

In all large establishments there are many persons about who are fond of the Pear, and it would often be the means of saving the gardener's best fruit if he were to consider this, and provide for it by planting those varieties which are free bearers, and which, if not first-rate, are of fair quality. Such are Beurré de Capiaumont, Aston Town, Summer Franc Real, Thompson's, Jersey Gratioli, Windsor, Autumn Bergamotte, Vigneuse, Louise Bonne, Bishop's Thumb, Souvenir du Congrès, Beurré Clairgeau, and Brown Beurré. I am sorry to leave off with these varieties, many delicious Pears being even now omitted, but the lists—Mr. Sheppard's and this—seem to be rather too abundantly found in autumn Pears. In ordering the Pear trees from the nurseryman do not forget to add some trees—bushes rather—of various Quinces. The fruits are very generally liked as preserves and in other ways. *F. M.*

PEAR BEURRÉ HENRI COURCELLE.

A small Pear; a seedling from Bergamotte Espere, raised by M. Arsène Sannier, which makes up for its small size and indifferent appearance by its exquisite flavour. Its form is like that of Bergamotte Espere, but it is late, and does well on the Quince, and is very fruitful. *Bulletin d'Arboriculture.*

PLANT NOTES.

IMPATIENS HAWKERI.

THIS is a bold free-flowering species bearing red flowers on longish stalks, which stand out well above the foliage. Perhaps this might be placed with such as *I. Hookeri*, which is a strong grower, bearing large flowers, and it is a credit to any cultivator who succeeds in flowering this plant; but the one in question has certainly the merit of being free-flowering, as plants with us have been continually blooming from the early part of the year, and promise to continue throughout the winter. Some say that it requires a large amount of pot-room, and compare it unfavourably with *I. Sultani* and *Episcopi*; but to us it seems unnecessary to make this comparison, as both kinds may be regarded as strikingly different. Those who have seen it in flower in this neighbourhood are much impressed with its large handsome flowers. Cuttings strike freely, and if these, when rooted, are potted into strong fibrous yellow loam, together with some coarse sand, and grown in a light position in a warm house, the nodes are produced closer together than would otherwise be the case if they received contrary treatment. If it could be crossed with *I. Sultani* or one of its varieties doubtless the result would prove satisfactory, but unfortunately these large flowering kinds do not, as far as our experience goes, intermingle with these smaller flowering species. There is a difference between the pollens of these two species both in colour and shape. In *I. Sultani* the pollen grains are reddish and barrel-shaped, while those of *I. Hawkeri* are round and yellowish; but whether these differences are sufficient to prevent a cross being made between the two we are unable to state.

SECHUM EDULE.

THIS is by no means a free-flowering plant in this country, that is, as far as our experience goes, and therefore it is not likely to become very popular. A specimen is now flowering profusely in one of the warm-houses of the Cambridge Botanic Gardens. It is a member of the Cucumber family, and is a much esteemed vegetable in the tropics. The fruit is about 4 inches in length, and is furnished with a number of small harmless prickles; it contains only one seed, which germinates within the fruit, and never separates from it. The shoots are long, almost of an indefinite length, one we measured

being more than 25 feet in length. The tendrils are from three to five-cleft, but are more generally produced in fours, and when out of flower it is not unlike a Cucumber plant. It has monœcious flowers, of dull white colour; the male flowers are in racemes, while the others are solitary. Both male and female flowers have a number of secreting glands in the tube of the corolla, about which many small reddish-coloured ants were particularly busy. (Can you inform me the name of this ant, as it seems most common amongst stove plants, but its name is not widely known?) The fruits are sometimes imported and sold in Covent Garden under the name of Chayotes. It has been introduced into Madeira and other Atlantic Islands, from whence we received our seed some two years ago. The root is also spoken of as being edible, resembling a Yam both in flavour and form. Unfortunately the plant at Cambridge cannot be fruited, owing to the proposed demolition of the house in which it is planted out. *W. Harrow, Cambridge Botanic Gardens.*

SPECIMEN TREES IN KEW GARDENS.—II.

THE STONE PINE (figs. 84 and 85, pp. 604 and 605).—One of the most characteristic trees at Kew is *Pinus pinea*. It is to be found on the lawn, to the left, not far from the entrance from Kew Green, and near the Director's office. It is not remarkable for the height of its trunk, but the head, as will be seen from our illustration, is very characteristic. The French call this Pine the Parasol Pine, from its umbrella-shaped head. In some places along the Riviera, and especially in Italy, the Stone Pine forms a marked feature of the landscape. M. Joly has lately described a specimen near St. Tropez which has a height of 16 metres, while the diameter of the head is 26 metres. The leaves are in pairs, each 4–5 inches long, and of a dark green colour, while the rich brown cones, of the size of a Coconut, take three years to ripen, and are remarkable for their prominent scales, the apices of which are dome-shaped and ribbed, reminding one of the dome of the cathedral of Florence. The seeds are oblong-ovoid, and are a favourite delicacy with the Italians. The wing of the seed is relatively narrow, forming a hatched-shaped membranous process surmounting the seed. This tree is remarkable for the occasional development of shoots with long single leaves instead of the usual pair—leaves similar, in fact, to those which are produced on the young plant in succession to the cotyledons.

In this country the tree is somewhat spring-tender, on which account we rarely meet with fine specimens, but we have received cones from Mr. Powell, of Drinkstone Park, and others. Messrs. Dammann, of Portici, have also favoured us with specimens of a golden-leaved variety. The Ravenna forest, once so celebrated and rendered popularly known by Leigh Hunt and Byron, was composed of this tree. These groves of stately Pines rose terrace after terrace for mile after mile along the Adriatic shore, but were killed in the winter of 1879–80, as graphically narrated in our columns June 4, 1881, p. 736. Such a wave of intense cold had not been known along the Adriatic for centuries, and that was proved by the Pines, which had grown up with the city's growth. Our correspondents at the time speak of gaunt bare trunks, attesting the destructiveness of the frost and to the severe loss of the peasants, whose living largely depended on the collection of the seeds. It is, however, quite possible that young seedlings protected by a mulching of the fallen leaves, may have survived, and if so that they are now gradually bidding fair to replace the trees that were killed. Perhaps some correspondent may be able to say whether or no this surmise is correct. In the mean time the following extract will suffice to give an idea of the former impressions of these forests:—

"This pinetum stretches along the shore of the Adriatic for about 40 miles, forming a belt of variable

width between the great marsh and the tumbling sea. From a distance the bare stems and velvet crowns of the Pine trees stand up like Palms that cover an oasis on Arabian sands; but at a nearer view the trunks detach themselves from an inferior forest growth of Juniper, and Thorn, and Ash, and Oak, the tall roofs of the stately Firs shooting their breadth of sheltering greenery above the lower and less sturdy brushwood. It is hardly possible to imagine a more beautiful and impressive scene than that presented by these long alleys of imperial Pines. They grow so thickly one behind another that we might compare them to the pipes of a great organ, or the pillars of a Gothic church, or the basaltic columns of the Giant's Causeway. Their tops are evergreen, and laden with heavy cones, from which Ravenna draws considerable wealth. Scores of peasants are quartered on the outskirts of the forest, whose business it is to scale the Pines and rob them of their fruit at certain seasons of the year. Afterwards they dry the Fir cones in the sun until the nuts which they contain fall out. The empty husks are sold for firewood, and the kernels in their strong shells reserved for exportation. You may see the peasants—men, women, and boys—sorting them by millions—drying and sifting them on the open spaces of the wood, and packing them in sacks to send abroad through Italy."

THE FLOWER GARDEN.

PLANTING.—Although this is generally considered one of the best months in the year for planting deciduous subjects and most evergreens, one cannot advise a continuance of that operation in wet or retentive soils. In hilly districts and on sandy and gravelly soils the case is different, and there need be no more delay than is occasioned by the unfavourable weather. Stake and tie such as require it as the work proceeds, and finish off with a mulching of half-decayed materials to keep out frost. In new planting the soil should be trenched two spits deep beforehand, and, if poor, a heavy dressing of decayed manure should be worked in with the staple. Where Rhododendrons, Azaleas, and other shrubs preferring a peaty soil are going to be planted, and the natural soil of the locality is unsuitable, the best way to ensure success is to clear out the old soil to a depth of 2 feet, and replace it with peat; by doing this the first cost may be great, but as a set-off against this is the success of the planting.

ROSES.—As soon as the soil is in a state fit to be trodden upon planting may be done so far as regards H.P.'s, but Tea and all tender varieties of the Rose will be better for being left till the spring. In planting new beds take out most of the old soil to a depth of 2 feet, and replace it with good turfy loam if obtainable, and a liberal admixture of rich manure. When setting out the plants allow a space of from 2 to 3 feet between the dwarfs; see that each one is labelled, and that a mulch is afforded the plants. Old plants that are unsatisfactory but which are worth saving may be lifted, re-planting in fresh soil. Cut off all suckers and shorten with a sharp knife any thick straggling roots. In severe weather some slight protection to Tea varieties should be afforded.

Turfing may still be done whenever there is an absence of frost. Never beat turf when it is frozen, this operation always destroying the appearance of it for a long time; neither let it lay in stock for a long time, but open out the turves to the light. The aspect of the garden will be rendered inviting if the lawn be kept in good order by sweeping and rolling at short intervals, but do not sweep the grass when it is wet, or the worm-casts will give it a smeared appearance. The same directions apply equally to walks made of binding materials. Shell and sea-sand walks need only to be raked smoothly at this season. The edges of the turf should be cut with the shears for the last time this season. *J. Horsefield, Heytesbury.*

PLANTS AND THEIR CULTURE.

PANDANUS.—Although a somewhat large and varied genus there are only about half-a-dozen commonly met with. They form distinct and telling decorative subjects, and are of very easy culture; in fact, with a moderate amount of dryish heat, light, and water, good-sized specimens may be grown; but very large

specimens can be rapidly raised, if treated liberally, in large pots with rich loamy soil and an abundance of heat—indeed, large plants are only too easily grown, which often renders them unfit for ordinary decorative uses. Some of them can, however, be kept down to a small size for a few years by occasionally making cuttings of the tops. In doing this strip the leaves off the stem so far as it is firm, and then cut clean across. Put the cuttings into as small-sized pots as possible, using sandy loam for a compost. If they are now stood in a dry part of the propagating-house, and occasionally be-dewed with the syringe, they will soon root, and should then be shifted into the size of pot finally required. I have found them do remarkably well placed near or over the hot-water pipes. Two of the best known—*P. utilis* and *P. Vandermeeschii*—in a small state, can in this way readily be kept for a year or two. They are both best, however, when propagated from seeds, which germinate readily. *P. utilis* is the more graceful of the two plants, the leaves being nicely recurved, and of a pleasing green colour. *P. Vandermeeschii* is more rigid, and stronger in its habit, with a whitish, glaucous bloom on the leaves, and both are densely armed with short red spines. The old stocks of the plants which have been cut down may be thrown away, as they do not readily break into fresh growth. Another broad green-leaved species is *P. ornatus*. Quite different from these is *P. graminifolius*, an elegant, narrow, recurved-leaved species, which branches freely, and is very useful for table decoration. Of the variegated form the two best are *P. Veitchii* and *P. javanicus* variegated. The former, although not the best coloured, is, nevertheless, the most serviceable plant; but *javanicus* is so formidably armed with spines that not only is it difficult to handle, but it is very liable to tear the leaves of other plants with which it may come in contact; both are striped with white on a green ground. The last-named three are easily increased from offsets, which may be put in at any time of the year and treated in the way advised for the other cuttings. If grown in plenty of light and heat they will afterwards stand a very low temperature without injury, provided they are dry at the root. Under these conditions we have successfully wintered them in a temperature not much over 50°; *P. javanicus*, being more tender, must be kept in the stove. *F. Ross, Pendell Court, Bletchingly.*

FRUITS UNDER GLASS.

Figs.—The earliest trees which are to supply fruit in April will now be ready for the start. These early trees, which should be in pots and tubs, may be stood on a solid foundation, with a good depth of fermenting leaves surrounding them. This may be thought to lessen the need for the customary syringing, but it will be as well to continue it, in order to keep the trees free from red-spider and other insects. A slight syringing once or twice a week with rain-water at a temperature of 90°, with a little petroleum added to it, will keep matters right in this direction. The house should be started with a night temperature of 50°, increasing it to 55° during the day when there is no sun-heat, and to 60° when the sun shines brightly. All successional houses should be cleansed, and the trees scrubbed with a brush and soapy-water containing a little quantity of petroleum, being careful not to injure the embryo fruit in the operation. Where it is found necessary to increase the stock, short stocky shoots may be detached with a heel, about the middle of January or beginning of February, and placed in sandy loam in 48's, plunging them in bottom-heat, and in all other respects treating them as Vine eyes. Any plants struck last year may now be shifted into 24's and stored away in a cool house until the turn of the year.

Melons.—Where fruit is still swelling a steady temperature of 75° should be maintained, and when the fruits show colour a dry and genial atmosphere is required.

Cucumbers.—A night temperature of 65° to 70° will now be sufficient for these; allow a little ventilation on all favourable nights. Do not pinch the point so much as previously recommended, but rather encourage a slight extension of the bine. Be careful not to overcrop, and continue to supply slight, rich top-dressings. If greenfly appears, fumigate slightly on three successive nights, and well syringe with tepid water the first thing in the morning. Syringing the plants overhead generally should now be discontinued.

Strawberries.—Where ripe fruit is in request in February no time should be lost in getting the necessary quantity of plants in readiness. The best method of starting these probably is to insert a quantity of 4-inch diameter drain-pipes into a bed of leaves in a pit with a rather flat roof, standing each pot within the pipe—the heat ascends the pipes around the roots and hastens the forcing process. The pots may also be plunged to half their height in a bed of leaves; but this plan results in the loss of roots, which soon make their way outside the pots. No time should now be lost in storing the whole stock for the winter, and I find no system better than standing the pots on a good depth of cinder ashes and packing them all round with leaves. I consider this superior to wintering in frames. *Wm. M. Baillie, Luton Hoo.*

THE HARDY FRUIT GARDEN.

PLUMS.—Plum trees will succeed in all districts in any suitable soil, and may be grown as standards or pyramids, or against walls, with the exception of the north aspect. Pyramids may be planted from 6 feet to 8 feet apart, and to keep them in a fruitful state they should be lifted every four years. A few of the choice kinds, such as Jefferson's, Coe's Golden Drop, Golden Gage, and others, should be grown against a wall with a north-western aspect, as the fruits from trees in this position are valuable late in the season. For the earliest crop Rivers' Early Prolific is undoubtedly the best variety, grown either as a standard, fan-trained against a wall, or as a cordon. For growing as pyramids, bushes, and against walls the following are the best, viz.:—Rivers' Early Prolific, Early Orleans, July, Bryanston, Golden and Green Gages, Angelina Burdett, Belle de Septembre, Autumn Compôte, Prince of Wales, Coe's Golden Drop, Jefferson's, Denyer's Victoria, Orleans, Belle de Louvain, Black Imperial, Kirk's, Pond's Seeding, Red, Yellow, and Purple Magnum Bonum, Late Orleans, and Coe's Late Red. For standards, the three varieties of Magnum Bonums, Orleans, Victoria, Prince of Wales, Prince Englebert, Early Prolific, Green Gage, Pershore, Belgian Purple, and Monarch. Damsons are best grown as standards or bushes. I have tried them in a pyramidal form, but without success, for the few fruit they bore did not compensate for the trouble taken in the way of root-pruning and other measures to induce them to bear. The best varieties of Damsons are Mitchellson's, King of Damsons, Farleigh Prolific, and the Prince or Shropshire.

Cherries.—These like a well-drained open soil, and succeed when grown in the same way as Plums, with the exception of the Morello, which, in midland and northern counties should be accorded a wall, and for late crops one facing north. For private gardens the most profitable method of growing Cherries is as bushes. Grown in this form they bear excellent crops yearly, and moreover the fruit is easily protected from birds. In forming a collection half-a-dozen trees of the Kentish Black should be included, as it is a very useful fruit, continuing in use until the Morellos are ready for gathering. For growing against walls the following are well proved varieties, viz.:—May Duke, Werder's Early Black, Rivers' Early, Elton, Black Eagle, Bigarreau, Governor Wood, Downton, Bigarreau Napoleon, Florence, Royal Duke, and Late Duke. For north walls, Kentish and Morello. As standards and bushes, Black and White Heart, Belle Agathe, Kentish, the Bigarreaus, May Duke, Downton, and Elton can be recommended.

Apricots delight in a deep, rich, and well-drained loam, and they succeed only in this country outdoors when grown against walls facing south, south-west, and west. As the trees require a great deal of water during the various stages of growth, it is most essential that the borders should be well drained. I find maidens are the best for planting; they grow away more rapidly, and are not so subject to gumming and losing their branches when they become established, as on the two and three year old trees. It is always best to plant the trees where they are to remain, for they are very impatient of being lifted after they get beyond a certain size. Of sorts, the following are the best:—Moor Park, Hemskirk, Kaisha, and the Large Early; the latter is an excellent variety, and the individual fruits can be grown as large as Peach by judicious thinning and careful attention to watering the border.

Peaches and Nectarines require to be grown on the same aspects as Apricots. The soil should consist

of a good mellow loam, with an admixture of lime-rubble if of a heavy nature. The following is a list of good varieties, viz.:—Alexander, Belle Beauce, Barrington, Noblesse, Grosse Mignonne, Royal George, Stirling Castle, Bellegarde, Alexandra Noblesse, Prince of Wales, Walburton, and Late Admirable.

Of Nectarines, Balgowan, Elruge, Hardwick Seedling, Lord Napier, Downton Improved, Newton, Pinaapple, River's Orange, Violette Hâtive, and Humboldt are a few of the best varieties. *A. Ward, Stoke Edith Park, Hereford.*

TRANSPLANTING AND MANAGING YOUNG FRUIT TREES.—The season of the year has now arrived when the transplanting of fruit trees should be taken in hand and carried out with all the expedition possible, as it makes a great difference in the welfare and speedy establishment of the plants whether the operation is conducted now or later, for at this time of year the roots soon get to work again, and when the buds start they will do so strongly; whereas if the removal of the trees is left till the spring they must of necessity break weakly, and make slow progress afterwards. In gardens where there are many wall trees to maintain in a fruitful state, it is a good plan to keep buying in, or working up a few young plants every year, so as to get them trained and grown on to a suitable size and shape for filling gaps as such occur, or take the place of others that are not doing satisfactorily, as by managing in that way there is little loss of time in filling up vacancies, and little difference in the supply of fruit, as trees of the stamp referred to soon come into full bearing, for being on the spot, they can be lifted and replanted with but little check to the plants. In starting with maidens, or two-year old stuff, it is not necessary to have walls to train on, as any fence, hurdle, stakes, or rails, answer for a backing or support very well, and most of the trees obtained from nurseries are put into shape on the one or the other. The first act of gardeners on receiving fruit trees from the raisers, after unpacking, used to be to cut them back, but this barbarous system is now only practised by the few, and cannot be too strongly condemned, as it serves no useful purpose, instead of which, the plant beheaded has to do the same work over again, and is little, if any, better or bigger at the end of a season's growth than when brought in [The tree must have a basis of shoots to the number of 4 to 5 on each side.] With plants treated more naturally there is none of this, and all that is needful is to cut out any misplaced shoot that will not be required for a main branch, and then all the rest may be laid in to the right or left, keeping the middle portion of the tree clear and open, as the thing is to get the sides filled up first, for the centre is sure to furnish easily after, the tendency of growth being towards that part where the chief rush of sap sets in and flows, causing strong shoots to emerge. In preparing for the planting, it is very important that the ground be trenched or well broken up to a good depth, but on no account should manure of any kind be used for stone fruits, as it only forces rank shoots, which in the case of Apricots, Cherries, Plums, Peaches, and Nectarines is to be avoided, for wood of that kind is apt to gum, and seldom gets ripened.

The safest and best help that the tree can have is a little fresh turfy loam chopped up moderately fine, and if of a calcareous nature all the better, but if not, a small quantity of dust chalk should be added and well mixed with the soil, as that suits the trees when the fruit is stoning, and also assists in consolidating and hardening the wood. Apples and Pears like rather stiff land, and where it is not naturally of that character it may be much improved by working in some clay that has been exposed to the air and become pulverised, or a dressing may be put on and left for the action of frost to shiver it, after which it will mix in and do an immensity of good to the trees. In planting these it is always advisable to keep them above the ordinary level, and it is essential to the well doing of Pears on the Quince stock that the junction or part where they are worked be buried, as otherwise the swelling of the stock is so slow that the tree on it is starved. With the planting complete the next thing is to mulch, and this should always be done with both small trees and big ones, as the mulching is a great protection against frost, and conserves the warmth in the ground by intercepting radiation of the heat, and this uniformity of temperature assists materially in the quick formation of roots and the re-establishment of the plants after removal. *J. S.*

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APPOINTMENTS FOR THE ENSUING WEEK.

SHOWS.

WEDNESDAY, Nov. 28.—The Hartlepoons (two days), Luton.

SALES.

MONDAY,	Nov. 26	{ Dutch Bulbs, at Stevens' Rooms. Dutch Bulbs, at Protheroe & Morris' Rooms. Plants and Bulbs, at Small's Rooms.
TUESDAY,	Nov. 27	{ Dutch Bulbs, at Stevens' Rooms. Orchids, established, imported, and in flower, at Protheroe & Morris' Rooms. Bulbs, Roses, and other Plants, at the City Auction Rooms, by Protheroe & Morris.
WEDNESDAY,	Nov. 28	{ Dutch Bulbs, at Stevens' Rooms. Lilies, Greenhouse Plants, and Bulbs, at Protheroe & Morris' Rooms. Clearance of Greenhouse Plants and Ferns, at the Hornsey Nurseries, by Protheroe & Morris. Plants and Bulbs, at Small's Rooms.
THURSDAY,	Nov. 29	{ Liliun auratum and African Tuberoses, at Stevens' Rooms. Dutch Bulbs, at Protheroe & Morris' Rooms.
FRIDAY,	Nov. 30	{ Imported and Established Orchids, at Protheroe & Morris' Rooms. Freehold and Leasehold Nurseries, Barnet, at the Auction Mart, by Protheroe & Morris. Bulbs and Plants, at Small's Rooms.
SATURDAY,	Dec. 1	{ Dutch Bulbs, at Stevens' Rooms. Dutch Bulbs, at Protheroe & Morris' Rooms.

More about Begonias.

In a recent article relating to a serviceable little book lately published at the *Gardening World* office, we took an opportunity of summarising the chief points in the history of the tuberous Begonias as we now know them. Although we have them of almost every shade of colour except blue, and of all sizes from that of a shilling to that of a saucer, we are still not satisfied, nor, indeed, ought we to be; till it is clear that we have exhausted all the possibilities of the case, and then we must, as the modern cant phrase has it, make a new departure. Every one who sees the tuberous Begonias must wish that their season could be prolonged. And there are already indications that this result will be attained to. "Oh! but," some will say, "how are we to get light enough under our gloomy, often foggy skies to develop the flowers?" Such objectors forget the fact, that the flowers are not necessarily made under those unpropitious auspices, and that even if their

foundations were not laid and their plan sketched out very long before, yet the materials out of which they are framed have been stored up ready for use some time before, so that we doubt not our gardeners, by clever adaptations, which they so well know how to practise, will, relying on these facts, be able so to manage their plants as to have them early or late at will. In the meantime, a better prospect of doing this is afforded by cross-breeding and hybridisation.

We have already alluded to the brilliant results in the way of autumn-flowering Begonias, of which John Heale and "Adonis" afford illustrations; and we have alluded to the crosses with B. Froebeli raised in Messrs. VEITCH'S establishment, and to which we look forward with eager interest.

M. LEMOINE, of Nancy, has also been at work, using the large white-flowered Begonia octopetala as one of the parents, and the result, according to a photograph which we have before



FIG. 84.—PINUS PINEA. (SEE P. 602.)

us, is so striking, that we lose no time in letting our readers know what they may expect to see in the near future. It is best to let M. LEMOINE speak for himself:—

"I beg to send you a photograph taken from a specimen of a new race of autumn flowering tuberous Begonias, which may, perhaps, have some interest to you. It is the result of a cross which I made some years ago between the white-flowered Begonia octopetala and some of the finest of the tuberous section. As you may judge from the photograph, the result is a magnificent one, and the new race, 'octopetala-Lemoinea' is one of the handsomest which I have ever raised. The root is somewhat irregularly lengthened, black, intermediate in shape between the long root in B. octopetala and the spherical corm of a tuberous Begonia. The herbaceous stem is very short, so that the leaves seem to be radical; these are broad undulated, of a glossy green, with round, hairy stalks. The plant bears from six to eight erect flower-stalks, thick and hairy, about 2 feet high, and each supporting from five to seven flowers, which open at the same time. The individual blooms, male and female, attain the size of 3 inches or more across,

and are composed of six to eight large oval petals which give them somewhat of the shape of Anemone japonica or Anemone fulgens.

"A nearly complete range of colours, from pure white to scarlet, with various shades of pink and carmine, is to be found in this new class, which produces a beautiful show of blooms at a season when the brightness of the tuberous Begonias is over. The photograph was taken on November 10 in my nursery, from a variety with pink flowers, one-sixth natural size. *M. Lemoine.*"

THE LATE DR. ASA GRAY.—We have received a "chronologically arranged list of the writings" of this botanist, as beloved as he was eminent. Dr. GRAY began to write in 1834, his first article, as it happens, being devoted to mineralogy. From that time, year by year, the roll of contributions in the shape of books, articles, memoirs, reviews, and obituary notices was unceasing till the present year, which has three entries, one being the "Botanical Necrology for 1887." In a few years only two or three original contributions to science are noted, but in many years they reach to as many as twenty. Even more numerous are the "botanical notices" and book reviews, issued during the same years. The whole record with index occupies no fewer than sixty-seven octavo pages of small, unlead type. When we remember that by far the greater and more important part of this is the record of actual work and investigations carried on by the author himself, investigations generally necessitating a large expenditure of time and labour, we can but feel astonishment at the patience and perseverance thus conspicuously manifested. Nor must the quantity alone be considered, far more important is the quality; and here, although many of the criticisms are of relatively ephemeral interest, the record of actual work done is such as to secure for ASA GRAY a place amongst the highest so long as botany endures.

THE ROYAL MEDAL.—One of the Royal Medals in the gift of the Royal Society, has this year been awarded to Baron Sir FERDINAND VON MUELLER, of Melbourne, in recognition of his long and unwearied labours as an explorer, a collector, and an investigator of the Australian flora. Sir FERDINAND has found time to do much towards popularising the science by his educational writings, and has also worked hard in the development of the economic resources of the great Australian continent, so that the compliment is thoroughly well earned.

A ROSE CONFERENCE is in course of organisation by the Council of the Royal Horticultural Society. It will probably be held at Chiswick in the last week of June next.

THE LINNEAN: November 15.—Mr. W. CARRUTHERS, F.R.S., President, in the chair. On behalf of Mr. H. BOLUS, F.L.S., Mr. J. G. BAKER exhibited a specimen of *Eriosperrum folioliferum*, a plant showing a very remarkable type of leaf-structure. It was figured by ANDREWS, in his *Botanist's Repository*, in 1807, and lost sight of until recently refound by Mr. BOLUS in Namaqualand. Professor STEWART exhibited a substance which had been picked up on the sea-shore, the nature of which it had puzzled many to determine, its structure being regarded by some as animal, by others as vegetable. He proposed to submit it to careful microscopical examination. Mr. J. E. HARTING exhibited a South American bat from Trinidad (*Noctilis leporinus*), alleged to be of piscivorous habits, and remarked upon a similar habit which had been observed in a species of *Pteropus* in India. A paper was read by Mr. B. D. JACKSON, on behalf of Mr. H. CHICHESTER HART, on "The Mountain Range of Plants in Ireland," which was criticised by Mr. J. G. BAKER, who gave an interesting sketch of the characteristics of the Irish flora. Two papers were then read by Mr. SLADEN on the mammals and birds collected by Mr. H. N. RIDLEY, in Fernando Noronha, in the deter-

mination of which the author had been assisted by Mr. O. THOMAS and Mr. R. B. SHARPE. The next meeting of the Society will be held on December 6.

HORTICULTURAL CLUB.—The second monthly meeting and dinner of the session was held at the Hotel Windsor, Victoria Street, Westminster, on Tuesday evening, 20th inst., when there was a very large attendance of the members, Mr. Harry J. Veitch occupying the chair. There were present the Revs. W. Wilks, F. H. Gale, and F. R. Burnside, Messrs. A. Moss, T. W. Girdlestone, E. R. West, Bunyard, H. J. Pearson, A. Pearson, J. Walker, W. B. May, A. F. Barron, R. B. Cater, W. F. Cooling, P. Crowley, W. J. Jefferies, the Hon. Secretary, and after dinner a paper

seconded by Mr. G. WHEELER, and resolved, that the best thanks of the meeting be given to Messrs. WILLIAMS, LAING, CANNELL, LOWE, and CHARD, for plants and cut flowers; to Mr. THOMPSON, of Clovenfords, for fruit, and to other friends for kindly assistance.

CHAMBRE SYNDICALE OF GHENT.—At a meeting held on the 12th inst., the following awards were made:—

First-class Certificates.—To *Odontoglossum grande*, from M. Maurice Metdepenningen; to *Cattleya Bowringiana*, *Odontoglossum Alexandra* var. extra, *Cypripedium Haynaldianum*, and to *Oncidium Cavendishianum*, from M. J. Bray; to *Cœlogyne speciosa* and

—the white, the dull green, and the dark brown. Respecting Ramie fibre, the Assistant Director reports the result of recent trials made in Paris of machinery adapted to clean the fibre and free it from gummy matter. Unfortunately the results were not satisfactory, and "the exploitation of Ramie (*Boehmeria nivea*), in spite of years of labour and the expenditure of large sums of money upon it, cannot be said to have yet emerged from the experimental stage."

BOTANY AT THE UNIVERSITIES.—The readership in botany in Cambridge University has been conferred on Mr. FRANCIS DARWIN, who now fills the office vacated by Dr. VINES. The latter gentleman is now Sherardian Professor of Botany at Oxford.



FIG. 85.—PINUS PINFA IN THE ROYAL GARDENS, KEW. (SEE P. 602.)

was read by Mr. G. Bunyard, on "November and December Pears," an interesting discussion, in which Messrs. Veitch, Pearson, Barron, and others took part, followed, and a vote of thanks was accorded to Mr. Bunyard. The Secretary was requested on behalf of the Club to write a letter to Mr. John Lee, expressive of their sincere sympathy with him in his serious illness, and expressing the hope that he might soon again be amongst them.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT SOCIETY.—The usual monthly meeting of the above Society was held at the Caledonian Hotel, Adelphi Terrace, Strand, on Monday evening, November 12, Mr. J. WHEELER in the chair. Two new members were elected. The committee are glad to say that the annual dinner was a decided success; and it was proposed by Mr. J. HUDSON, and

Lælia autumnalis, from M. Louis Desmet-Duvivier; to *Bouvardia President Cleveland*, from M. Ed. Pynaert-Van Geert and from M. F. Desbois; to *Cypripedium regale*, from M. Jules Hye-Leysen; to *C. Madame G. Vincke*, from M. G. Vincke-Dujardin, of Bruges; to *Vriesia Delanghei*, from M. Delanghe-Vervaene.

Cultural Commendation.—To *Oncidium ornithorhynchum* from M. Alf. Van Inschoot.

Commendation for Novelty.—To *Cypripedium Mrs. Canham*, from M. James Bray.

"KEW BULLETIN."—The November number is occupied with articles concerning Lagos rubber (*Ficus Vogellii*), Liberian Coffee (*Coffea liberica*), various food grains of India, including the huskless Barley of North-west India. It appears that three varieties of huskless Barley are cultivated in Thibet

It is time that in our great universities there should be, not one, but at least three Professors of Botany, so impossible has it become for any one man to teach effectively all departments of the science, much less make independent researches—as to our thinking an University Professor may be expected to do, and indeed generally does.

PIERRE THOMAS DUCOURAN.—The name of this naturalist will not be familiar to many, and, so far as this country is concerned, it is to Mr. PETER BARR that the rescue from oblivion of the name and deeds of a remarkable man is due. Mr. BARR narrated in our columns on March 10, 1888, his astonishment at the inspection of a series of drawings of plants, insects, birds, &c., of the neighbourhood of Bayonne, which he made in passing through Biarritz. M. DUCOURAN was born at Biarritz in 1810, and at

first taught mathematics at Bayonne, and was afterwards engaged in commercial pursuits at Paris and Nancy, and retired to Biarritz in 1865, where, until his death in 1874, he occupied himself in arranging his numerous notes on natural history. Many of the drawings were executed by his daughter. A short note on Mr. DUCOURAU's career is given in the *Courrier de Bayonne*, a copy of which is before us.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.—At a meeting of the committee, held on Thursday, the 15th inst., it was determined to hold the fiftieth annual general meeting of the subscribers at SIMPSON'S, Strand, on Wednesday, January 16 next, and to add on that occasion fourteen pensioners to the list, five without election, under Rule 6, and nine by election among the subscribers. The voting-papers will be issued on or about December 15. The usual annual friendly dinner of the members will take place after the meeting, and the Very Reverend S. REYNOLDS HOLE, Dean of Rochester, has consented to preside. A special committee has been appointed to consider the best manner of celebrating the year 1889, that being the fiftieth, or Jubilee Year of the Institution. On November 28, 1888, E. R. CUTLER will enter upon his seventieth year, and in January will complete his forty-sixth year as Secretary of the Institution.

TYPE WRITERS.—Type writing seems to be making advances in this country, some of our nurserymen having adopted the system, and most of the United States firms correspond in this manner. Editors would often be glad if more of their correspondents wrote by machinery. The Remington Co. held a meeting at Anderson's Hotel lately, when the latest improvements in their machine were demonstrated to members of the Press. In the new pattern (No. 5) the action is simplified, and new characters are introduced.

CYPRIPIEDUM INSIGNE SANDERÆ.—A small plant with a single growth and one flower of this superb variety realised 70 guineas by fair competition, without reserve, at Messrs. PROTHOROE & MORRIS' auction rooms, on Friday, November 16. It is a fine and distinct variety, the like of which has not been seen, or anything resembling it. It will be best described by saying that it is a C. insigne with clear, citron-yellow, waxlike, and shining flowers, the upper third of the dorsal sepal being pure white, the only and almost imperceptible marking being some ten or twelve brown dots, like fly-spots, up the median rib of the same.

THE COPLEY MEDAL.—The COPLEY Medal of the Royal Society, the highest award in the gift of the Society, has this year been awarded to Professor HUXLEY.

THE WEATHER PLANT.—We have had so many inquiries about this, and our friends have sent us so many newspaper-cuttings referring to it, that we think it right to state that the plant in question belongs to the same family as the extraordinary Gooseberry and the Blue Rose. All plants, to be precise all protoplasm, is sensitive to physical impressions, in some instances more so than others. That the plant in question should be able to forecast the state of the weather and give presage of earthquakes is nothing compared to what is narrated in old books as to the sensitiveness, if we remember right, of some species of *Oxalis* the leaves of which closed at the approach of the wicked and vicious, but remained unaffected in the presence of the pure and virtuous. The Weather Plant is no other than the well-known *Abrus precatorius*, sometimes called the Paternoster Pea, the seeds of which are like small beans but of a brilliant scarlet, with a patch of black at one end. They are used for beads and rosaries (whence the name), and also for diamond weights, the weight of the Koh-i-noor having been ascertained by their means. The pinnate leaves of the plant are, no doubt, sensitive to light, heat, electricity, or any

other force that would alter the tension of their protoplasm. The statement that an observatory has discarded both aneroid and mercurial barometers in favour of the Weather Plant as an indicator of forthcoming weather is one of those statements that we should receive with an open mind, so that what passed into one ear might speedily escape by the other! When we receive information from some other source than newspaper gossip we shall be bound to accord the matter more consideration.

THE GARDENERS' ORPHAN FUND.—On Wednesday, the 14th inst., a grand concert, promoted by the gardeners in and around Chesterfield, was given in the Stephenson Memorial Hall, Chesterfield, the proceeds of which are to be handed over to the above fund. In addition to the usual attractions the large hall was very tastefully decorated with autumnal foliage and flowers. The concert was under distinguished patronage. The decorations were ably carried out by the committee under the direction of Mr. OWEN THOMAS, of Chatsworth (the local hon. secretary to the Fund), assisted by Mr. FOSTER, chief Orchid grower at Chatsworth. The chair was taken by the Hon. and Rev. R. E. ADDERLEY, Vicar of Chesterfield, who spoke in very favourable terms of the objects of the Society. A ball was given in the same hall on Friday, the proceeds of which are also to be added to the fund.

INDUSTRIAL EXHIBITION, PARIS.—We read in the *Devon and Exeter Gazette* of November 20, that awards have just been made at the Industrial Exhibition now being held in Paris in connection with the manufacture of cider and perry, and the result is eminently satisfactory to the county of Devon, considering that the competition was an open one. The first prize (Diploma and Gold Medal) has been awarded to Messrs. ROBERT VEITCH & SON, of the Royal Nurseries, Exeter, for a collection of Apples suitable for making cider. These Apples were collected from cider districts, and included all the standard varieties, as well as some new sorts raised by leading cider-makers. The second prize for cider has been awarded to Mr. CHARLES HAM, of Exeter, as also another prize for Apples used in the process of manufacture.

INSTITUTE ROAD.—The road long-talked of across the whilom Royal Horticultural Gardens at South Kensington, is now an accomplished fact. All the better—the sooner the memory of the "Commissioners and all their works" is banished from the minds of horticulturists the more charitable they are likely to feel towards their oppressors.

CHERRIES.—Our *English Home*, as quoted in *Notes and Queries* (1861), p. 148, contains the following:—"Cherries grew in Holborn in the same century (thirteenth); HENRY III. ordered them to be planted at Westminster; and GILES DE ANDENÆD, the Royal Gardener in the reign of EDWARD I., also planted some Cherry trees in the same garden."

THE LATE MR. COURT.—The New York Florists' Club at a recent meeting adopted a resolution of sympathy and condolence on the occasion of the death of Mr. COURT.

BOARD OF AGRICULTURE.—The Government proposes to withdraw their proposed Bill for the establishment of an Agricultural Department, but hope to reintroduce it another session.

THE NATURAL HISTORY MUSEUM.—According to statements in the House of Commons, the Museum will shortly be opened in the evenings, thanks to the possibilities of electric lighting.

THE FLOWER TRADE.—No. 61 of the Cobden Club Leaflets, says a contemporary, has some very wholesome truths for English flower growers; but it is, perhaps, just a trifle hard on them in some of its criticisms. The flower trade of London, it is pointed out, is estimated at the value of £5000 a-day, and the fact that the whole of this very considerable business is not done exclusively by English growers seems to

be attributed entirely to neglect and want of energy. This is hardly fair, because it cannot be denied that the growers of the Riviera have a very decided advantage over our own people in the matter of climate. But, says the leaflet, "if we have not the suitable climate we can make it." That is true to a certain extent, but only to a certain extent. To make the climate of Southern France under English skies is rather troublesome and expensive, and, moreover, cannot be entirely accomplished at any price. It is always possible to get a certain degree of heat and moisture, but unfortunately it is not always possible to get sunlight, and without that floriculture is grievously handicapped. There are, however, some important suggestions, and many curious and interesting facts embodied in this little leaflet. Otto of Roses, we learn, is exported from one locality in Roumelia to the value of £44,000 a year, and it has been calculated that to make this there are grown in that one place alone no less than 10,104,000,000 of blooms. Roses grow there, and are dealt with very much as Hops are in Kent.

CHRYSANTHEMUM CONFERENCE AT SHEFFIELD.—Advantage was taken of the presence of so many Chrysanthemum fanciers at Sheffield to hold a conference on the evening of Friday, the 16th inst. Mr. JOHN WRIGHT was voted to the chair, and having briefly opened the proceedings, he stated that was the first meeting of Chrysanthemum growers in conference, which he thought was a fitting accompaniment to the first Provincial Show of the National Chrysanthemum Society. Papers were read by Mr. W. TENNINGTON, of Liverpool, whom the Chairman introduced as an authority on the incurved Chrysanthemum; and Mr. MOLYNEUX.

THE CHRYSANTHEMUM CENTENARY.—A correspondent writes:—"Whilst no one can question the right of the National Chrysanthemum Society to lead in the proposed centenary celebration of the Chrysanthemum, it would be very interesting if that body would inform the public what grounds it has for assuming that 1789 was the exact year in which the Chrysanthemum was first introduced into England. The evidence on that point should be incontestable. I hear that, owing to the needs of the case, the celebration must be deferred to 1890, which so far may be a wise step, as it will leave the exact date of the introduction of the Chrysanthemum here less open to question, whilst it will give ample time for the promoters of the celebration to deal with the matter in a broad spirit. It would be an excellent idea could Chinese and Japanese gardeners be imported over here early in the year for the purpose of producing examples of their methods of culture of what is now the most popular of garden flowers."

THE COLLECTION OF CHRYSANTHEMUMS in the gardens of the Royal Horticultural Society, Chiswick, numbering about 2300 varieties, is now in fine condition for inspection and criticism. The plants are arranged in the great vinery, and the arrangement is such that while they form a gigantic bank of flowers extending the whole length of the house, every plant is easily accessible for ascertaining its name and character. This display is as creditable to Mr. A. F. BARRON as any he has accomplished.

COLNBROOK CHRYSANTHEMUM SOCIETY.—This Society, which has its home on the borders of Middlesex and Bucks, seems to exist very much for the benefit of one exhibitor. Judging by the prize list published, which shows that this favoured individual had no competitor in the ten open classes, was placed 1st in ten others, with invariably only one competitor, and came 2nd only once, thus presenting a sort of Gardeners' Benefit Society, rather than a good local Chrysanthemum Society. It is fair to the Society to say that, in the amateur, small gardener, and cottager classes, the competition was fairly good. Very considerable reconstruction seems needful in the case of a Society of this nature, as it is absurd to

regard it as established in the interests of horticulture. That the exhibitor in question put up good stuff is doubtless the fact, but that nearly all other gardeners in the Society's wide district should hold aloof from exhibiting needs explanation.

M. BOISSIER'S HERBARIUM.—In our notice of this collection some time since (p. 509), we stated that this herbarium was now the property of the town of Geneva. We are, however, informed that this is an error, and that the herbarium remains in the possession of the family.

VANDA CÆRULEA.—A large specimen of a fine form of this species is now in flower at Priorwood, Melrose, in the collection of ALEX. CURLE, Esq. The flowers, which are veined with dark blue on a sky-blue ground, are 4 inches across, the larger lower segments 2 inches, the whole well rounded. The plant is about 4 feet high, measuring from the top of the pot, and it has twenty-four leaves on each side, and two spikes, one with fifteen and the other with sixteen flowers.

MASDEVALLIA MACRURA.—Even considering the genus to which it belongs, this species is a remarkable one. In the size of its flowers it is probably exceeded only by some of the varieties of *M. chimera*. A plant now flowering at Kew has flowers measuring 10 inches across the sepals. The long scapes produce several flowers, but singly, and at intervals.

HAMMERSMITH HORTICULTURAL SOCIETY.—The autumn show was held on November 15, at the Athenæum, Shepherd's Bush. Sir TREVOR LAWRENCE, M.P., visited the show in the evening, and distributed the prizes. Mr. LAMPARD, Chiswick, took the 1st prize for his group of Chrysanthemums arranged for effect, whilst Mr. WOOD, Chiswick, took six prizes for cut blooms, taking the 1st prize in each case. Mr. THOMPSON was a 1st prize winner for a group of Chrysanthemums, and took the Certificate for his premier bloom, Japanese. Messrs. JONES, WOODHOUSE, BROMLEY, NELSON, and others, also took prizes. In the fruit classes, Messrs. ADDISON and WOOD were the principal winners, Mr. DAVISON taking 1st for a collection of vegetables.

CAMBRIDGE HORTICULTURAL SOCIETY.—A show of Chrysanthemums was held by this Society in the Corn Exchange on the 15th and 16th inst. Cut blooms were very fine for the season, and the entries for these and specimen plants more numerous than in previous years. Unfortunately the show failed to arouse much interest among the townspeople, and visitors were few in number.

BROMLEY DISTRICT.—The annual show of Chrysanthemums took place at the Drill Hall on November 14 and the following day. Competition in all the larger classes was very weak, but showed improvement in the smaller ones, prizes going in most cases to the gardeners of the neighbourhood. Primulas, Grapes, &c., were likewise shown.

BUCKINGHAM.—This show was held on November 21 in the Town Hall, the whole of the fifty-nine classes being well taken up generally, Messrs. CORDEROY, PRICE, TAILBY, WALTER, TIPLER, and BEDFORD, dividing the honours for plants and cut blooms, and in the fruit division good specimens were contributed by Messrs. WALTER, TAILBY, PRICE, and HOLTON. Cottagers were well represented.

TAXODIUM DISTICHUM.—In the grounds of Shoreham Cottage, the seat of E. CHAPLIN, Esq., near Sevenoaks, a pair of these beautiful trees is growing, one of which is said to be about forty years old. It is nearly 60 feet high, and the stem measures, at 1 foot from the ground, a little over 5 feet in circumference, and, like the one at Castle Hill, Englefield, mentioned some few weeks ago in these columns, it stands on the bank of the river. The tree is in splendid health, and is certainly a beautiful object when in leaf. A large quantity of its roots are to be seen in the water just in front of the bank on which it stands. *J. Haldyson.*

THE TREATMENT OF BANKS AND SLOPES.

It is not an uncommon mistake to find the slopes in gardens, and by the sides of roads where the surrounding ground is either higher or lower than the road, or parterre, made at too abrupt an angle, as at *a, b, c, and d, e* (fig. 86, copied from diagrams by J. C. Olmsted, published in *Garden and Forest*, September 5, 1888). It is only in the panelled garden—a mode of laying out a flower parterre not often adopted at the present day—that such sharp slopes are admissible, and in such places they are not difficult to keep in good order, owing to their usually small depth; but in banks of four, five, and more feet in depth there are no means of preserving them in a presentable condition. The slopes are then difficult to mow, the grass becomes impoverished by the insuperable obstacle the slope presents of being manured properly; and it is very apt to become disfigured by a few days warm sunshine, and especially when the slope is southerly, as it frequently is in terraced gardens.

Moreover, a bank of this character always needs to be backed by hard materials, if its contour is to be preserved perfectly—another cause for its dying out during sunny weather, even when the precaution is taken to cover the material so employed with clay.

In park land, which is mostly fed off by stock, the trampling of the animals in wet weather very soon destroys the first neat appearance of a steep bank; the grass then grows tufty, the rains wash out the

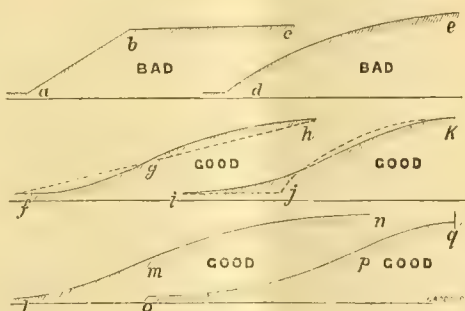


FIG. 86.—TYPES OF SLOPES.

soil between the tufts, and a continuous carpet of green turf is lost.

In diagram *d, e*, there is some improvement on *a, b, c*; the line is softer, but it meets the grass plot at the bottom at an unpleasant angle, and is only less formal than an inclined plane. To make it less so the top of the slope may be thrown back from its base, but it will still have an ungraceful aspect. The diagram *i, j, k*, represents the form a bank of soil of uniform texture would assume after a long interval of rainy weather, the soil being washed out near the foot of the slope and deposited on the level at a short distance from it. That is the lesson taught by Nature in this matter, and it is a pretty safe rule to follow in making a turf bank. A cross-section of such a bank is an "ogee," an architectural term meaning something moulded inward at the bottom and outward at the top, or, more broadly speaking, any reversed curve. The line *f, g, h*, is a regular "ogee," the concave portion, *f, g*, being equal to the convex portion *g, h*. In practice the proportions of a curve may be varied, and they may sometimes be made to follow the lines *l, m, n*, and *o, p, q*, and yet be of graceful proportions.

Another rule in making slopes is illustrated by the diagrams, viz., that when a broad surface of turf has to terminate at a steep slope it would be better to connect the former with the latter by means of a convex curve, as at *m, n*, completing the "ogee" by a short concave curve as at *l, m*. But, on the contrary, when the surface is intended to terminate at a steep slope rising to a fence, shrub border, or other marked boundary, the long concave curve of *o, p, q*, is more suitable.

It should be borne in mind that a slope falling to a road or path should not terminate directly at these objects, but there should be a margin of level turf varying from a few feet to twenty, according to the scale on which surrounding objects, paths, buildings, borders, etc., are laid out.

HOME CORRESPONDENCE.

VIOLAS AS BEDDING PLANTS.—I consider "R. D." (p. 546) has done well in drawing attention to these plants, and I would much like to see the suggestion adopted either by the Royal Horticultural, or Royal Botanic, or both. For years they have been quite a feature at the great Whit week show at Old Trafford; but we do not see them around London figuring so conspicuously as in northern counties. Their value in the garden is annually becoming more and more apparent, while the list of really first-class varieties, exclusive of novelties, is somewhat considerable. The middle of May would make a good time to show them, using pans of about 12 inches diameter. A collection of these would make a most interesting display, which might also prove instructive, seeing it would afford abundant opportunity for comparing their habits, whether dwarf, compact, or rambling, as also their flowers, and the freedom with which they are produced; a dwarf compact habit with profuse flowering being of greater moment with them than the actual size of the flowers individually, but so much the better if size was also included with the two just named. *F. Jenkins.*

PEARS.—I fail to see clearly how it is possible to keep up a constant supply of fruit during the whole of the Pear season year after year with only twelve or even fifteen varieties, as remarked by Mr. Sheppard (p. 535). It is true that within that number all the very best of quality might be placed, and the greater part of the task might be got through provided we could really depend upon them all cropping constantly. But here and in other gardens where a goodly number of varieties are grown to keep up a regular supply, we should, if we were to limit ourselves to that number—viz., twelve or fifteen—be as often without fruit as with. To double that number, I think, would be nearer the mark, and none too many. I am no advocate for growing more varieties than are really needful, but as the Pear is not to be depended on for cropping annually, and I am a firm believer in having more than one string to my bow. *H. Markham.*

CHISWICK.—I entirely agree with Mr. Dyer's remarks as to what should be done at Chiswick, and had I known there was to be a meeting to consider it I should certainly have attended, but I had no notice. [It was a meeting of the committees only.] I am indebted to the Scientific Committee for some of the pleasantest and most profitable hours I have spent in the Society, but I believe the Society will never flourish so long as the Floral Committee exists on its present footing. It seems absurd to have a committee composed so largely of persons interested in commercial horticulture. What chance has an interesting plant exhibited by an amateur? Still more absurd is it to give medals to nurserymen for advertising themselves and their goods. Surely also the nurserymen in the neighbourhood of London have so great advantages as to locality that they might at least waive their privilege of voting on the exhibits of their less fortunate brethren in the provinces, who feel themselves unfairly handicapped by the Society. *Over the Sea.*

I am pretty confident that a few years will see the management of the Royal Horticultural Society conducted in such a way as to meet our hearty approval. At present we have very little to differ with the Council about, as it is apparent to us that whatever was the case formerly, there is now a strong feeling in the Council that the views of the general body of horticulturists throughout the country should be met and carried out as far as practicable. As this feeling spreads among us, horticulturists will gladly become Fellows, in the confident expectation that they will reap benefit for themselves and confer it upon others. Except on the score of expense I see no objection to the "office" remaining in London, nor, indeed, should I object to an office being kept open for the society in every district of the kingdom if it would advance the Society's aims and interests. The exhibitors' view of the matter is a selfish one,

and, as usual in such cases, they will stand in their own light. I still think Chiswick the place for the Society's chief work. *Head Gardener.*

—Retire to Chiswick, but retirez pour mieux sauter.—It would be cheaper and more accessible. Clear out of the Drill Hall. *L.*

—In the name of common sense don't have shows at Chiswick. It is much too inaccessible and nobody will come. *H.*

—Chiswick's the place, with a few big shows in London, in the suburbs, or, in spite of the Liverpool fiasco, in the provinces.—Now-a-days Chiswick is as accessible to most of us from the country as any place in central London would be. *M.*

—I see that at the meeting of the Fellows of the Royal Horticultural Society on the 13th inst., two resolutions were carried, one, that some of the meetings next year should be held in the Chiswick Gardens, the other that the Drill Hall should still be kept on. Now, I am glad to see that it is proposed that some of the Shows next year shall be held at the Gardens, and in a letter to the Secretary I advocated that proposition; but on the other hand I much regret that it is proposed to rent the Drill Hall again next year, for with the exception of, I think, the National Auricula Show and the Carnation and Picotee Show, the fortnightly shows at the Drill Hall have been most decided failures, as far as my experience of them goes; indeed, at two of them, if not more, the flowers and fruits that were advertised were not shown at all! (I allude to the absence of the Strawberries, Dahlias, and Chrysanthemums.) It would be much better, in my opinion, if the meetings were monthly instead of fortnightly, and held in the Council-room, and the shows held in Chiswick Gardens, and the rent of the Drill Hall saved and spent upon Chiswick Gardens instead. What on earth is the use of keeping up the gardens at Chiswick with the vineries, &c., if the Society will not hold its shows there? "A Fellow," *Union Club, Trafalgar Square, S.W.*

TABLE PLANTS.—What constitutes good table plants, and by what rule, or rules, are they judged at shows? Is it absolutely necessary that some of them should be about 11 inches, and some 22 inches high? I only once before saw such judging as that which took place at the National Chrysanthemum Society's show at the Aquarium on November 7 last. I could not believe my eyes, and felt sure that some mistake had been made in putting on the tickets; but no—that was not so. In my opinion the best plants in the class for eight were put out of court altogether, and got no prize. I cannot now say whose they were, but a finer and better lot I have seldom seen. I will give a list of them, so that some correspondents may express their opinion about them:—Croton Countess, C. Warrenii, C. Chelsoni, Cocos Weddelliana, Dracena angustata, D. superba, Geonoma gracilis, Pandanus Veitchii. These plants were well grown, well coloured, and regular as regarded size, which was, I think, as near the right one as possible. Why these were passed over, I do not understand, unless the judges inadvertently overlooked them. The 1st prize lot consisted of Dracena Percy, D. superba, Croton Laingii, C. Countess, C. aigburthensis, 11 inches high; C. Mrs. Dorman, 12 inches high; Cocos Weddelliana, 22 inches high; Aralia leptophylla, 15 inches, which had lost its leaves at the bottom. Now, I think, if these are compared with the first-named plants, which got no prize, it will be seen that those were by far the best, and that if they had been properly judged the first prize lot should not have been in the first three lots. Now, sir, there is nothing which will do the show more harm than that the labours of the grower should be submitted to such judgment. *Hortus.* [The prize lot consisted of four genera, and the other of three only, which may have influenced the judges, supposing that quality and adherence to the regulations were equal. But the Chrysanthemum Society was stepping outside its province altogether. *Ed.*]

PITMASTON DUCHESS AND OTHER PEARS.—It may seem unnecessary to write anything respecting this well-known Pear, but it has behaved so well here this wet sunless summer that I feel I must bear testimony to its excellence. We finished our last fruit on the 9th of this month, and throughout they were excellent in flavour and cut as smooth as a Marie Louise. I would recommend it to be planted largely for market as it is of taking appearance and is as good as it looks. Many persons think that it is a seedling from the Duchesse d'Angoulême, but that is not so; it was raised at Pitmaston, near Worcester,

and the old gardener who sowed the pips and ultimately planted it on the front of his cottage, told a friend of mine that they had no record of its parentage but that it was simply the best of a great many seedlings raised in Mr. Williams' garden. While I am on the subject of Pears I would also like to sound the praises of another Pear, viz., Knight's Monarch. We have it fine this year from a south wall, and from the same shelf one can get a supply for a month or six weeks—it ripens so differently to any other with which I am acquainted. The flavour is excellent. Many years ago, when the Royal Horticultural Society held a fruit show in St. James' Hall, Mr. Ingram of the Royal Gardens, Frogmore, I remember, took the 1st prize with the Monarch, as the best flavoured Pear in the room; and at the same time and place there were prizes for the best jars of stewed Pears where the Catillac carried all before it. It is now a settled question beyond doubt that the Quince is the stock for Pears; the fruit is larger and clearer than from the Pear stock. I have been much struck with the Quince trees in the garden here to-day. They are still full of foliage, while every Pear tree in the garden is leafless. May not this autumn growth, this prolonged vigour be of great service to the proper finishing of a heavy crop when used as a stock for the Pear? *J. Rust, Eridge Castle, Nov. 12.*

SINGLE CHRYSANTHEMUMS.—Having read many reports of the recent Chrysanthemum shows, I have not yet been enabled to find that in any of them a class was set apart for single-flowered seedlings of Chrysanthemums, notwithstanding our having such pretty varieties as America, blush, shading to white; Miss Cannell, pure white, yellow centre; Canariense, a good yellow; Scarlet Gem, Aurora, maroon-chesnut; Miss Rose, white and blush, and many others; when staged in the same way as the pompon, which are very effective. I hope those who are interested in the preparation of the future schedules will give this class careful consideration. *T. Hosmer.*

NEMATOID WORMS.—When delicate bulbs, such as the white Hoop Petticoat Daffodil, or other plants of weak growth, die off prematurely, I have often found on examination that their roots are infested with nematoids—that is, very small, thread-like worms, white in colour, and less than half an inch long. I have generally considered these to be the consequence of vegetable decay, but I am assured that in many cases they are the cause of it. I am recommended to try the effect of a weak solution of sulphate of copper. If any readers of the *Gardeners' Chronicle* have suffered from these tiny depredators, and have got rid of them, their experience may be of use to others. *C. Wolley Dod.*

TRADESCANTIAS.—The chief object of this note is to remark on the statement of "R.D." made on p. 577, that "Tradescantias do not appear to seed." In my garden in Cheshire, where the soil and climate are not very favourable for producing seeds, these Spiderworts seed to such an extent, and the seedlings come up so promiscuously, that I find them a great nuisance. It is true that the colours of flowers in seedlings vary much, but all are inferior to the blue of the type. The flowers of this plant open only in sunshine, and only one at a time on each stalk; and in wet weather it becomes top-heavy and untidy. It is true that the individual flowers are beautiful, and the plant may deserve a place in sunny gardens; but after tolerating it for ten years, I have expelled it from my newer and choicer borders as a second-rate plant. *C. Wolley Dod.*

CANKER IN APPLES.—With regard to this subject and Mr. Tonks' discourse on "Canker of the Apple Tree" at the recent Apple Conference at Chiswick, I have thought the following statement, copied from exhibitors' remarks, would be interesting:—Mr. J. Deans, gardener to Granville W. Leveson Gower, Esq., Tetsey Place, Godstone, Surrey (Apple Congress report, p. 38), says:—"The situation is well sheltered and facing south, 400 feet above sea level; soil is prepared, and consists of road-scrappings with loam, and is mulched annually with stable manure. A great many of the varieties of Apples canker very badly here, whether the season be wet or dry, and every spring we have to cut out cankered wood. It seems hopeless to try to obtain a good-shaped tree in the prepared soil; but on the chalk, which is very dry, we have two specimen trees—a Ribston Pippin, and a Blenheim

Orange, planted fifty years, and growing vigorously without a spot of canker, but they give no fruit. Why is this?" This seems a strong case in support of Mr. Tonks' theory, and if any of those who are growing Apples on chalk would give further information on this very important subject, it might prove of great advantage to fruit growers generally. *John Peed, Streatham.*

STACHYS TUBERIFERA.—I send you a box containing two stems of this. I have now cultivated this new vegetable for six years, at present extensively. It is as hardy as Knot-grass, not affected by frost in the least. As a salad it is sent to the breakfast table every morning with the Radishes. The tubers are now quite matured, and are employed for a second-course vegetable. An intelligent cook will find it useful in many ways; as it is tender, its delicate aroma can be brought out in various ways. It ramifies beneath the surface of the soil all round the stem, as may be seen in the specimens which I send to you. The soil should be of a free porous nature, and on heavy soils sifted coal-ashes and leaf-mould mixed with the staple assists it materially. The ground should not be hoed too deeply, only scratching the surface, as it is easy to hurt the tubers. The plant is even more profitable than French Beans, and at this season and during the winter the tubers are welcomed as a variety in vegetables. It should now be stored in dryish earth or sand—not in damp materials, as with the latter growth is apt to recommence. I recommend every one to plant it; it gives an abundant return for a very little outlay for "seed" and labour, and requires the least possible amount of attention. It may not be necessary even to replant the ground, as the small tubers left in the ground are sufficient to stock it. Merely give a good dressing of manure, and fork over the ground, and a heavy crop will grow. *P. Middleton.* [The number of good-sized tubers on the roots sent was extraordinary. *Ed.*]

PLANT PORTRAITS.

ESCLUSUS TURBINATA, *Revue Horticole*, November 1. —Fruits top-shaped, spineless.

CATTLEYA LABIATA VAR. *MAGNIFICA*, *Gartenflora*, September 15.

CYPRIPEDIUM MEASURESIANUM, *Revue de l'Horticulture Belge*, November.

EPIDENDRUM NEMORALE, *Lindenia*, t. 155.

EPIDENDRUM NEMORALE, *Orchidophile*, October. —Flowers large, reddish-violet, sepals and petals narrow, spreading, lip broadly obovate acute, whitish, with violet veins.

MESOSPINDIUM VULCANICUM, *Lindenia*, t. 154.

PHLOX NANA, *Garden and Forest*, October 24.

QUESNELIA MAGNIFICA, *Gartenflora*, September 15. *STANHOPEA RUCKERI*, *Revue de l'Horticulture Belge*, November. —Flowers white, lip with two orange spots at the base.

SYRINGA PUBESCENS, *Garden and Forest*, October 24.

SOCIETIES.

EDINBURGH BOTANICAL.

NOVEMBER 8.—The first meeting of the session was held in 5, St. Andrew Square, Dr. Craig, President in the chair.

The President in his opening address referred to the losses in membership during the last session, especially noting the decease of Professor Dickson and Dr. Boswell. He also deprecated as a down thrust to Scottish botanical science, the proposed transfer of the Royal Botanic Garden from Government to the University, as at present proposed in the Universities (Scotland) Bill now before Parliament.

The President next gave in the report of the excursion of the Scottish Alpine Club to Sutherlandshire during the closing days of July and the opening one, of August last.

Professor Bayley-Balfour exhibited a gynanthous Foxglove, discovered by the late Professor Dickson two years ago. The stamens of each flower, usually five, had all been converted into carpel-like processes, bearing ovules in an exposed position. The Professor also exhibited specimens of Wallflower and Poppy with stamens similarly modified.

Mr. Lindsay reported on the weather and vegetation of the Royal Botanic Garden for July, August, September, and October.

ROYAL HORTICULTURAL. Scientific Committee.

NOVEMBER 13.—Present: Dr. M. T. Masters, in the chair; Mr. Pascoe, Mr. W. G. Smith, Mr. Michael, Professor Boulger, Professor A. Church, Professor Scott, and Rev. G. Henslow, Hon. Sec.

A report on the experiments made at Chiswick with reference to high moulding of potatoes was read (see ante p. 572).

Potato Reversion.—Mr. W. G. Smith mentioned that eighteen years ago Mr. Fenn crossed two long sorts of kidney Potatoes, viz., the Early Coldstream and the Early Ashleaf, the result being a variety of a globular form, which he called "W. G. Smith." After eighteen years, during which this had come true, one plant suddenly reverted to the original type, being $5\frac{1}{2}$ inches long, the round tuber being only about $2\frac{1}{2}$ inches in diameter.

Ivy Blossoms, Malformed.—Dr. Masters exhibited specimens and drawings by Mr. W. G. Smith of a very unusual condition of Ivy flowers, in which the "disc" on the summit of the ovary had become hypertrophied into a thick ring or cup, the style occupying the depression in the centre, the border of the ring supported about ten anthers, all being supernumerary, as the normal number was present at the outside of the base of the ring. The specimens were sent by Mr. Archer Briggs.

Oak Timber, Defective.—Dr. Masters exhibited for Mr. Burbidge specimens of Oak-wood which was used for spokes of wheels, which was found to break off short. It was referred to Professor Marshall Ward for examination and report.

Pinus Lambertiana.—Dr. Masters exhibited a branch of this species, received from Mr. C. Herrin, of Dropmore, Maidenhead, with two cones about 1 foot long. The size when growing naturally in California is said to be double that of the present specimen.

Cleistogamous Lawn Plants.—Mr. Henslow showed specimens of several species of plants which are propagated by cleistogamous flower-buds. By that means, while retaining a dwarf habit, they are able to multiply very rapidly, and to extend over considerable areas in a tennis-lawn. Although none of them are perennials, they remain so reduced in size that they are not exterminated by the mowing-machine periodically cutting them down. The result is that each species has more or less completely covered certain patches of ground, to the almost entire exclusion of everything else. The plants in question are *Cerastium glomeratum*, *Montia fontana*, *Trifolium procumbens*, *Sagina procumbens*, *Alchemilla arvensis*, *Veronica arvensis*, and *Poa annua*. Mr. Henslow added that he had observed many years ago *Trifolium subterranean*, flourishing in the same way on the close-cut grass in Kew Gardens, on the site of the present rockery.

Rumex crispus, gyno-monoecious.—Mr. Henslow exhibited specimens of this plant, which bears hermaphrodite flowers on longer, with female flowers on shorter pedicels, thereby forming whorls along the main peduncle. It does not appear to have been described in any work as being in this condition.

Cotyledon umbilicus, abnormal.—Mr. Henslow exhibited a specimen and leaves of this plant, found growing in a wall at St. Ives, Cornwall, the peculiarity being that it bore a flat, expanded, rosulate arrangement of leaves exactly like the House Leek, *Echeveria*, or several sorts of Saxifrage. The leaves were spatulate and not petate at all. Some few growing freely were funnel-shaped.

Raspberry and Blackberry Hybrid.—Mr. Henslow drew attention to the foliage of a supposed hybrid received from Messrs. Viccars, Collyer, of Leicester. The plant blossomed, but bore no fruit this season. The flowers were exactly like that of the Raspberry, as well as the tomentose under surface of the leaves; but the method of forming the quinate leaf out of the ternate agreed with that of the Blackberry as follows:—The simplest form of leaf is a single oval leaflet near the flowers. This becomes lobed at the base, and so two leaflets are given off, forming the ternate leaf. From the basal pair in the case of the Blackberry two more are given off, and thus form a quinate leaf, the lower four leaflets being nearly "palmate." In the Raspberry, however, the second pair of leaflets are given off from the terminal leaflet, just as were the primary pair. Consequently the five leaflets now form a more decidedly pinnate leaf. In the hybrid in question, although in all other features it agrees with the Raspberry, yet in this one particular it resembles the Blackberry. As no fruit was produced a comparison could not be made with them.

BIRMINGHAM AND MIDLAND COUNTIES GARDENERS' ASSOCIATION.

At a largely attended meeting of members at the Midland Institute, on Tuesday, November 13, Mr. W. B. Grove gave a lecture on "Edible Fungi," illustrated by photographs, in the oxyhydrogen lantern, of the species referred to. These were, first, *Agaricus arvensis* (the Horse Mushroom), a species which is eaten in many parts of England, and sometimes hardly distinguished from *A. campestris*. It may be known by its larger size, thicker flesh, and yellow juice when wounded. Then the Parasol Mushroom (*A. procus*), and the False Parasol (*A. rachodes*), were described, and the latter one illustrated by a photograph of a group which, afterwards, had been eaten by the photographer; *A. nebularis*, the Clouded Mushroom; *A. ostreatus*, the Oyster Mushroom; *Coprinus comatus*, the Maned Mushroom, or Wig-cap; the Beefsteak, *Fistulina hepatica*; the Morell, the Truffle, and the Giant Puff-ball were then illustrated and described; and, finally, the Fairy Champignon (*Marasmius oreades*). Two common poisonous fungi, *A. semiglobatus* and *Coprinus micaceus*, were introduced, in order to warn would-be consumers against them, and a slide, illustrative of the effects of eating poisonous species, brought the lecture to a close.

Mr. Grove recommended the eating of all the species named, each having its own distinctive flavour; but it was necessary that the tyro should be shown how to distinguish the species by careful discriminating attention, either from coloured plates or, preferably, by the aid of a better instructed friend. Good cooking was also necessary, if the true flavour was to be obtained.

TORQUAY CHRYSANTHEMUM.

Nov. 13.—This was held in the Bath Saloons. The competition in the classes for plants was not so strong as usual, Mr. H. Yelland, gr. to Miss Loch, Villa Como, taking the 1st prize in the open class for twelve plants, distinct, and in the amateur classes for twelve plants, and also in other classes.

Orchids were shown much better than usual, Mr. Medland, gr. to Moreton Sparks, taking 1st for three distinct.

The open classes of Chrysanthemums were very good, and there was a fair competition throughout. Mr. Dolling, gr. to Mrs. Wild, Whitehill House, Newton Abbot, took the 1st prize in the principal class for twelve Japanese and twelve incurved, distinct, his Japanese being the better of the two; and he also led in five other classes.

Mr. Cocks, gr. to Wyndham Fitzherbert, Esq., Kingsnear, was a very successful exhibitor, and had the best incurved bloom in the show, in *Empress of India*. Mr. John Styles, gr. to Miss Fripp, took 1st in the amateur classes for twelve incurved blooms.

Grapes were excellent, especially those shown by Mr. Marsh, gr. to Sir Thos. Freak, Dartmouth. He was 1st for two bunches black Grapes, with fine examples of Black Alicante and for white Grapes. Muscat of Alexandria large and good. He also took 1st for the heaviest bunch, with Gros Colmar, weighing 3 lb. 13 oz.

Vegetables were excellent, and remarkably clean. Mr. Coles, gr. to W. B. Fortescue, Acton Hall, taking 1st for a choice collection.

Messrs. Veitch, Messrs. Lucombe & Pince, of Exeter, each arranged stands of decorative plants, Chrysanthemums, &c.

CLONMEL CHRYSANTHEMUM AND FRUIT SHOW.

This now annually recurring event was held in the large Assembly-room of the Court-house, Clonmel, on Tuesday, November 13. Notwithstanding the generally unfavourable season, and that almost all the local growers lost some of their finest blooms through premature damping off, the show was an unexpected success.

Groups.—The requirement for admission into this section was that competitors were each to furnish a sufficient number of plants to occupy a space of 60 square feet, and the prize was to be awarded only to that collection which should best illustrate quality and effect. It speaks largely for the extent to which the culture of this flower is carried when we state that no fewer than four local amateurs entered the field as competitors in this section, and their several groups were tastefully displayed; the prizes going

to Mrs. Malcomson, Minella, Clonmel (gr., Mr. J. Crehan); 2nd, Thomas Phelan, Esq., Spring Gardens (Mr. Halpin), and highly commended, Dr. W. H. Garner (Mr. O'Shea).

Cut Blooms.—Twenty-four incurved blooms, not less than nine varieties. After close competition the 1st prize went to Mr. Raymond de la Poer, of Kilkronagh, Kilkenny (gr. Mr. Crawford), and 2nd to Mr. Thomas Phelan. Particularly good in the 1st were Cherub, Princess of Wales, Lord Alcester, and John Salter; and in the 2nd exhibit, Jardin des Plantes, Prince Alfred, and Lord Wolsley.

For twelve incurved there were five entries, and after careful criticism, Mr. F. Clibborn (Mr. Crowley) was placed 1st, Mrs. Malcomson 2nd, and Dr. Garner, highly commended. In the 1st, Joan d'Arc (almost perfect), Golden Empress, and Blush Queen, were particularly noticeable; and in the 2nd were Novelty, Lord Wolsley, and Blush Queen. Many of the blooms were very fine.

Next came twenty-four Japanese, and for this the competition was close between Mr. R. de la Poer, Mr. T. Phelan, and Dr. Garner, but ultimately the prizes went in the order named.

Then came the class for twelve Japanese, and this was the most closely contested at the show, 1st prize ultimately going to Mrs. Malcomson, with grand blooms of Mons. Jarin, Fanny Bouchardet, Dormilion, Val d'Andorre, and Elaine—very fine. Mr. Clibborn was 2nd, with Edwin Molyneux, Ralph Brocklebank, and Glorioso, among others. Mr. H. S. Boyd was highly commended, while two other stands were very little behind in point of merit. In the reflexed class, Mr. de la Poer had again the premier position, with some well-done blooms of the golden, white, and pink Christine, Cullingfordi, and King of Crimson; Mrs. Malcomson was 2nd, and Mr. Phelan highly commended. Grandly shown by Mr. Phelan was the new Amy Furze. In Anemone Japanese, Mr. de la Poer once more was peerless; while in pompons Mrs. Malcomson and Mr. Boyd divided the honours in the order named.

In the incurved section the best bloom in the show was adjudged to Raymond de la Poer's Princess of Wales—a perfect bloom—Mrs. Heal almost disputing the honour in the stand. In the Japanese the premier position went by general consent to the new introduction, Ralph Brocklebank, in Mr. Clibborn's collection, next being the telling new variety Edwin Molyneux.

The Silver Cup Competition.—Special, value £5, given by Raymond de la Poer, Esq. This was the blue ribbon of the show, and for it entered five stands of twenty-four each, incurved and Japanese, to contain eighteen distinct varieties, by the donor, Mr. F. Clibborn, Mrs. Malcomson, Dr. Garner, and the Hon. Dudley F. Fortescue, Summerville—the cup, with 1st prize, and the 2nd and 3rd prizes going in the order named.

Fruit was shown in some considerable quantity and also miscellaneous exhibits. From "Clonmel Chronicle."

YORK CHRYSANTHEMUM.

Nov. 14, 15, AND 16.—The annual Chrysanthemum show, held under the auspices of the Ancient Society of York Florists, was opened in the Yorkshire Fine Art and Industrial Institution. Since the Society extended its enterprise to the holding of a show of Chrysanthemums in the autumn, no floral exhibition in the district, always excepting the Yorkshire Gala show, has so quickly achieved popularity or so well sustained its position. The Society gave this year upwards of £100 in prizes, and the premiums offered were large enough to attract the best growers of the district. This year the range of competition has been extended, several competitors from beyond the previous area having entered the lists. The entries, therefore, showed a considerable increase on any previous year's total. The nipping frost which occurred on the first night of October played havoc with all the gardens in the locality, and a great many flowers were spoiled. Notwithstanding this accident, the display was quite up to the average.

The four groups set out for competition for Mr. Alderman Rymer's prize were of a high order of merit, the foliage and blooms being arranged and mingled with good effect. The 1st prize was awarded to Mr. T. M. Weddall, of Selby; 2nd, Mr. J. T. Hingston. The smaller groups did not produce so good a competition, but they were very effective. The Chrysanthemums in pots were for the most part well grown, and bore a mass of well formed blooms; and

the best varieties were strongly represented. There was also a capital show of Palms and Dracenas, and a very pretty display of Primulas and decorative foliage plants.

Among the cut flowers the display of new Japanese Chrysanthemums shown (not for competition) by Mr. T. B. Morton, Darlington, were noticeable, the blooms being very large and perfect in form. In proximity to these were staged the collections of Chrysanthemums in the class for the ex-City Sheriff's prize. Each entry consisted of eighteen incurved and eighteen Japanese, the whole including not less than twenty-four varieties. The premier prize was awarded to Mr. W. B. Richardson, J.P., for a really grand lot, in which the only weak point was in some of the Japanese varieties. The other cut Chrysanthemums formed a splendid show.

In one of the classes for reflexed Chrysanthemums a difficulty arose, the judges considering that two of the exhibits were really Japanese, and they were therefore disqualified, but in order to mark the merit of the flowers, were awarded special prizes.

A lovely lot of cut flowers were shown, and the bouquet classes were well filled. Fruit presented an exceedingly fine show, the Grapes being of remarkable quantity, size, and bloom. The Apples and Pears were of excellent quality. In these classes Mr. Goodacre, gr. to the Earl of Harrington, Elvaston Castle, had no less than eighty plates of Apples and fifty of Pears. Messrs. Backhouse & Sons, York, sent a very extensive collection of Apples, not for competition, and also some fine Dalkeith Sprouts. The vegetables were good, especially the collections for which Messrs. Deverill & Co., Banbury, and Messrs. Stanley & Son, Wath-upon-Dearne, offered the prizes. The former firm had also an exhibition, not for competition, a large assortment of vegetables, of which Onions of extremely large growth were the leading feature, and for their splendid productions no less than six certificates were awarded.

We append a few of the more important prizes in the three main sections of the exhibition:—

Cut Flowers.—Thirty-six Chrysanthemums, eighteen incurved, not less than twelve varieties, and eighteen Japanese, not less than twelve varieties, or more than two blooms of one variety—1st, Silver Cup, value £5, given by the ex-City Sheriff (S. Border, Esq.), and £5 by the Society, W. B. Richardson; 2nd, H. J. Robinson. Twenty-four Chrysanthemums, distinct, twelve incurved, and twelve Japanese—1st, W. B. Richardson; 2nd, G. Whitehead. Twelve Chrysanthemums, incurved, distinct—1st, W. B. Richardson; 2nd, Miss Steward. Twelve Chrysanthemums, reflexed, not less than six varieties—1st, Miss Steward. Twelve Chrysanthemums, Japanese, distinct—1st, A. Milnthorpe; 2nd, T. Smith, Beverley. Six Chrysanthemums, ditto, one variety—1st, Miss Steward; 2nd, T. Smith, (Beverley). Twelve bunches of cut flowers, not less than eight varieties—1st, Mrs. Lloyd; 2nd, T. F. Wood.

Fruits.—Six bunches of Grapes, three varieties, two bunches of each.—1st prize (Vice-President and Stewards' prize), Mr. Goodacre, gr. to the Earl of Harrington; 2nd, R. C. Neville. Two bunches of black Grapes—1st, Lord Hotham. Two bunches of white Grapes—1st, R. C. Neville. Extra for Vine in pot.—Mrs. Gutch, Extra for three Pines.—Sir J. W. Pease, Bart. Assortment of Apples, grown North of the Trent, correctly named.—1st (given by Messrs. Backhouse & Sons, York), Mr. Goodacre; 2nd, J. W. Hutchinson. Assortment of Pears, grown North of the Trent, correctly named.—£1 5s. (given by Messrs. Backhouse & Son).—1st, Mr. Goodacre.

Vegetables.—Collections of vegetables were shown chiefly in response to offers of prizes by Messrs. Deverill, of Banbury, Oxon.; and Messrs. C. Stanley & Son, Wath-upon-Dearne, Yorkshire. In the first-named Mr. J. Kirk was the head prize-taker, and in the second Mr. S. Hardcastle. For an exhibit consisting of nine kinds of vegetables—Society's prize—Mr. J. Whitehead was 1st; and Mr. S. Hardcastle 2nd. Beside the above large competitions there were very numerous small ones, consisting of single dishes of seasonable vegetables.

WINCHESTER.

NOVEMBER 13 AND 14.—The Winchester Horticultural Society's show of the Chrysanthemum, held in the Guildhall on the dates named, was a very good one, notwithstanding the damaging effects of the early October frosts.

For eight specimens—a very fine class—Mrs. W. Joy, Shirley, Southampton, with plants 5 feet in diameter, profusely flowered without being too closely

trained, was easily 1st; Mr. Wills, gr. to Mrs. Pearce, Bassett, was a good 2nd. All the plants staged by growers residing within a radius of 5 miles from Winchester—a special class—showed a marked improvement upon those of last year; the best being shown by Mr. J. Kaines, The Cedars, Hyde Park Road.

Mr. G. Wareham, gr. to Mrs. E. Gunner, Heathfield, Winchester, staged the best groups of Chrysanthemums, a well arranged group of plants, freely flowered.

The best miscellaneous group of plants, occupying a space 56 square feet, was that of Messrs. Jeffrey & Jones, Winchester, and consisted of Palms, Ferns, Bouvardias, and other flowering plants, put together very successfully.

Cut Blooms.—These formed by far the more important part of the exhibition, and the principal class was one for forty-eight blooms, half to be Japanese in not less than eighteen varieties, and the same number of incurved blooms. It was considered by some persons that the judges made a serious error in their award of 1st honours, which was given to Mr. Neville, gr. to F. W. Flight, Esq., Twyford, Winchester. His incurved flowers were of medium size and beautifully finished, while the blooms of Japanese were especially weak; the stand of Japanese varieties from the winner of the 2nd prize, Mr. E. Molyneux, Swanmore Park, was so much in advance of the 1st prize stand, as also was the back row of the incurved blooms, that those present able to form an opinion were unable to justify the award. Messrs. Drover & Son, nurserymen, Fareham, were 3rd.

For twenty-four blooms in not less than eighteen varieties Mr. Trinder was 1st, with good blooms in both incurved and Japanese varieties.

For twelve incurved Mr. Neville was 1st, and for twelve Japanese, distinct, Mr. Molyneux was 1st, both exhibitors staging well.

Mr. Neville staged the best twelve reflexed and twelve Anemones.

Mr. Shenton (gr., Mr. T. Annells), Twyford, Winchester, staged the best six incurved, neat blooms, and the best twelve pompons, distinct, in bunches of three.

Fruit.—The exhibits in point of quality were in point of numbers more extensive than usual. The best three bunches of Grapes, distinct varieties, were shown by Mr. C. Warder, gr. to Sir F. Bathurst, Clarendon Park, Salisbury, and were good examples of Alicante, Gros Colmar, and Muscat of Alexandria. Mr. Molyneux, gr. to W. H. Myers, Esq., Swanmore Park, Bishop's Waltham, was a close 2nd.

For two bunches of Grapes, black varieties, the two last exhibitors changed places. Mr. Molyneux staged Alicante in good condition.

Mr. Warden took 1st honours for two bunches of white Grapes with Muscat of Alexandria, followed by Mr. Molyneux.

Mr. G. Best, gr. to C. W. Chute, Esq., The Vyne, Basingstoke, staged the best dessert Apples in three varieties, well coloured medium-sized examples; and Mr. Trinder, gr. to Sir H. St. Mildmay, Dogmersfield Park, the best culinary varieties, and Pears.

The arrangements by Mr. C. Shenton, the Hon. Secretary, gave complete satisfaction.

KENT COUNTY.

NOVEMBER 14 AND 15.—This Society made an excellent commencement at Blackheath, and thanks are due to the Honorary Secretary, Mr. Needs, for its inauguration this year.

For a group Mr. J. Hudd, gr. to F. W. Prior, Esq., Blackheath, easily secured 1st with a tasteful arrangement. Messrs. Dobson, J. Hudd, and Rhoden, were also awarded prizes, in the order of their names, for groups.

Japanese cut blooms were keenly contested by some of the leading growers. Mr. Packman, gr. to E. E. Shea, Esq., Foots Cray, won 1st with twenty-four Japanese, showing magnificent blooms, Mr. R. Leadbetter, gr. to A. G. Hubbuck, Esq., Chislehurst, being a good 2nd. Mr. W. Packman led again for eighteen Japanese.

In the open class for twelve Japanese, Mr. Pannell, Ashley House Gardens, Caterham, was 1st with fine blooms of popular varieties; Mr. H. Shoesmith, gr. to M. Hodgson, Esq., was a very close 2nd.

For six blooms of one white Japanese variety, Mr. Packman again secured the premier place with splendid blooms of Avalanche; and in a corresponding class for coloured Japanese flowers he again led with splendid blooms of Mr. Ralph Brocklebank.

In the gentlemen's gardeners' class, Mr. J. Hudd was the chief winner.

In the amateur classes, Mr. Briscoe Ironside, Foots Cray, and Messrs. Douet, Banneter, Shepley, and Fielding all contributed good stands of well-grown blooms, particularly the first-named.

Incurved blooms were equally well shown. Mr. H. Shoesmith worthily secured the post of honour for eighteen varieties, having superb blooms of the usual exhibition varieties; Mr. Packman was 2nd with smaller but neat blooms.

In the open class for twelve, Mr. J. Pannell led with finely-finished blooms.

Mr. H. Shoesmith was again 1st in the gentlemen's gardeners' class for twelve incurved; and he led also for six blooms of one variety, with Lord Alcester, in prime condition.

In the amateur classes Mr. Shepley and Mr. Douet staged some good blooms.

For Japanese Anemones, Mr. F. Moore, gr. to J. W. Pickersgill, Esq., Blendon Hall, Bexley, gained the chief award, having some nice blooms of J. Thorpe Junior, Sunflower, Louis Bonamy, and Laing's Anemone. Mr. F. Moore again led with pompons, followed by Messrs. Davis & Jones, Camberwell.

The special prizes were keenly contested, Mr. W. Packman taking 1st for the President's prize for twenty-four blooms of Japanese, reflexed and incurved in equal numbers, staging some splendid blooms. Mr. F. Moore was a capital 2nd—a particularly fine bloom of Stanstead White was on his boards.

Miscellaneous.—Messrs. Davis & Jones, of Camberwell; and Messrs. John Laing & Sons, of Forest Hill, exhibited, not for competition, groups of Chrysanthemums effectively arranged; and Mr. Wickham Jones, Foots Cray, showed a few stands of good cut blooms. Messrs. Davis & Jones staged also a few stands of Miss Annie Lowe, Violet Tomlin, and Mrs. Walters. Messrs. John Laing & Sons showed, not for competition, a large exhibit of the best sorts of Apples.

MARKET HARBOROUGH.

THE district Chrysanthemum Society of this town held their Annual Show on Wednesday and Thursday, November 14 and 15, and the committee is to be congratulated on the success which has again attended them in bringing together so capital an exhibition.

The specimen plants in the incurved and Japanese varieties were very meritorious, and were shown in great numbers and of fine quality.

The majority of the prizes for plants were taken by S. Symington, Esq., Brookland House, Market Harborough (gr. Mr. H. Dunkley). For a group, Messrs. Plowman & Son were awarded premier honours. R. H. P. Hutchinson, Esq., Husbands Bosworth (gr. Mr. W. Rainbow), was 2nd in that class, and G. H. K. Fisher, Esq., Market Harborough (gr. Mr. W. Norman), 3rd. In cut blooms, S. Symington, Esq. (gr. Mr. J. Clarke), G. L. Watson, Esq., Rockingham Castle (gr. Mr. H. Watt), and Sir F. F. Turville, K.C.M.G. (gr. Mr. W. Duncan), were the most successful exhibitors.

In the exhibits of amateurs an improvement on previous shows was noted; and the most admired were the plants of Mr. S. Branton and the groups of Messrs. Bott, Branton, and Dalby.

EALING CHRYSANTHEMUM SHOW.

This annual display of the favourite winter flower was held at Ealing on the 14th inst., but like to so many other suburban displays, had to suffer in attractiveness from the lack of good plants, owing to the October frosts. All the same, the Lyric Hall, in which the show was held, made a pretty picture. One chief decorative group was shown by Mr. Chadwick, gr. to E. M. Nelson, Esq., Hanger Hill, but was not for competition; it was very gay, and effectively arranged.

Mr. Wigmore, gr. to F. Hicks, Esq., and Mr. Viner, gr. to R. D. Dawes, Esq., had the best large competitive groups; and Mr. A. H. Johnson the best smaller group.

The cut flower classes were fairly well contested, some of the blooms being of great excellence. Mr. Hudson, gr. to A. H. Atkinson, Esq., M.P., Gunnersbury House, showed a lot of very fine blooms, not for competition, as also did Mr. Chadwick. Miss H. B. Smith arranged a lovely basket of Chrysanthemums, and some beautiful bouquets and sprays for

ladies. The ladies' table stands and bouquets were a very gay feature. The premier flowers of the show, taking the National Society's Bronze Medals, both shown by Mr. Owen, of Ealing, were *Boule d'Or* and *White Queen* of England.

Fruits were in good form. Messrs. Lee & Sons showed a fine collection of Apples and Pears grown at their Ealing nursery. The culinary and dessert Apples in competition were exceedingly good, *Potts' Seedling*, *Emperor Alexander*, *Peasgood's Nonsuch*, and *Wellington* being amongst the finest of the former, and *Blenheim Orange*, *King of the Pippins*, and *Cox's Orange Pippin* of the latter. Pears also were very good, and generally well preserved.

Potatoes were in excellent form also, whilst the competition in the vegetable classes was remarkable, no less than twelve collections of six kinds being staged in the open class, Mr. Chadwick coming 1st. The cottagers' exhibits in this section were first-rate, and hard to excel this season.

The classes for cooked Potatoes, served hot, were well contested, the 1st prize in each case falling to Mr. E. Cachett, of Acton, a railway signalman, whose samples were of the best description.

WATFORD CHRYSANTHEMUM.

NOVEMBER 13 AND 14.—The fourth annual exhibition of Chrysanthemums at the Agricultural Hall was by far the best yet held by the Society, the entries being larger, and the exhibits more meritorious than previously, amongst the competitors being many who had exhibited at the National in the previous week. The central group of plants in the hall came from Lord Clarendon's garden, and were not in the competition. The group was arranged skilfully and with much taste by Mr. Myers.

In the group class the 1st prize was awarded to Mr. Dinsmore, gr. to T. F. Blackwell, Esq., for a very nice group of flowering plants, Orchids, and Ferns; the 2nd and 3rd being awarded to Mr. Cox, gr. to Mrs. Brown, and to Mr. Condie, gr. to S. Blackwell, Esq., in the order named. In cut flowers the competition was severe, the entries numbering nearly 200, and our remarks must necessarily be limited to the open classes.

Twenty-four Japanese.—The flowers were superb, as is shown by the fact, that the winning lot, that of Mr. Edwin Beckett, gr. to H. H. Gibbs, Esq., was awarded also the prize for the exhibit in the show, and one of his blooms, *Album fimbriato*, was adjudged the premier flower amongst the Japanese. Mr. Beckett's other fine blooms were *S. Oliver*, *Sunflower*, *Madame C. Audiguer*, and *E. Molyneux*. Second honours were taken by Mr. Cox, gr. to J. Trotter, Esq.

Twenty-four incurved.—Mr. Beckett was again 1st; and secured the prize for the best incurved flower in the show with a fine example of *Princess of Wales*. Mr. E. Sanderson, President of the "National," was 2nd with a remarkably fine stand of flowers of high finish; and was 2nd to Mr. Beckett's only in point of size.

Twelve incurved.—Mr. E. Sanderson was 1st with a fine lot of the leading varieties; 2nd, Mr. Mundell, gr. to Lord Ebury.

Twelve Japanese.—1st, Mrs. Brightmen; 2nd, Mr. Kirby, gr. to Sir A. Charles.

Six incurved, one variety.—A keen contest occurred in this class, the blooms being in all cases well set-up, and with a degree of finish that will be explained by reference to the names of the winners. 1st, Mr. Beckett, with *Princess of Wales*; 2nd, Mr. Sanderson with *Princess of Teck*; and 3rd, Mr. Mundell with *Golden Empress*. In the same section for distinct Japanese, Mr. Beckett again won 1st place with a stand of the pure white *Avalanche*; and Mr. Henty 2nd.

In the amateurs' classes a keen competition took place in cut blooms, Mr. R. Bradberry a successful exhibitor at the Aquarium, taking 1st honours in incurved, and Mr. Lansley and Mr. Sturman being equally successful with Japanese.

Plants.—Mr. Kirby, gr. to Sir A. Charles secured 1st place with a group of plants well flowered, but rather too tall for good effect.

Fruit.—A fine collection, not for competition, was shown by Messrs. Lane. In the competing classes Messrs. Beckett, Brown, and Barnes were the chief prize-takers.

Vegetables.—These were well shown in collections. Mr. Beckett again was foremost, with Mr. Henty 2nd.

Table plants, *Cyclamens* and *Primulas*, were shown. Some *Bouvardias* and *Pernettyas*, not for competition were exhibited by Messrs. Cutbush, and a group

of mixed plants by Mr. Darby, florist, of Watford. Table decorations, floral devices, and berried plants, all helped to make up a really first-class show.

WESTON-SUPER-MARE.

Nov. 14.—This was the fourth annual exhibition held in the Victoria Hall. It is gratifying to see the quality of the exhibits improve each year, still there is room for improvement.

For six Chrysanthemums, large flowered, distinct varieties (Japanese excluded) Mr. Brooks led, with nice healthy and well trained plants.

Mr. Holland, gr. to W. Ash, Esq., had the best six Japanese, distinct, with very nice specimens, well grown fine and fresh flowers of *Rendatler*, *Source d'Or*, *Margot*.

Mr. Holland led with three standards, any variety, having very nicely grown specimens and well flowered.

For a group of Chrysanthemums, arranged for effect in a space 10 by 5 feet, not much taste was displayed in the arrangement. Mr. W. Brook was 1st, having a splendid lot of plants in great variety.

For six stove or greenhouse plants Mr. Brooks, with *Latania borbonica*, *Seaforthia elegans*, *Phoenix dactylifera*, &c., was 1st.

Cut flowers were shown very well, with good competition in most of the classes. Mr. Miller (Clifton) was placed 1st for twenty-four large flowering, Japanese excluded, with popular varieties; and for twelve ditto Mr. Holland led.

Mr. Miller came to the front with a capital stand in the class for twenty-four Japanese. *E. Molyneux*, and *Soleil Levant* were good. Mr. Dufferin had the best twelve ditto.

For two bunches of black Grapes Mr. Dufferin led with excellent bunches of *Black Alicante*; and Mr. Coates for white with *Muscat of Alexandria*.

READING CHRYSANTHEMUM.

As is usual this Society held a fine and extensive exhibition in the Municipal Buildings on the 15th inst., both Town Halls being utilised for the purpose, and there were quite enough exhibits to occupy all available space. Some plants of *Crotons* of large size and fine colour, staged by Mr. Lees, gr. to Mrs. Marsland, *White Knights*, Reading, greatly helped the appearance of the halls.

Groups of Chrysanthemums arranged for effect.—There were nine of these placed round the sides of the old Town Hall, and they were a striking feature. The appearance of these groups would be greatly enhanced if some low plants were employed to cover the nakedness of the pots and stems of the Chrysanthemums. The best came from Mr. H. Perkins, gr. to the Right Hon. W. H. Smith, Greenlands, Henley-on-Thames, having well grown plants on single stems of incurved and Japanese varieties—the flowers large and well finished, and nicely fresh. Mr. Turton, gr. to John Hargreaves, Esq., *Maiden Erleigh*, Reading, who had strongly grown plants carrying large flowers, but there was a nakedness about the plants that greatly detracted from their appearance. Mr. Hawkins, gr. to W. Crosslade, Esq., *Earley*, was 3rd; and several other prizes were awarded.

Specimen Plants.—The best six, Japanese varieties excluded, came from Mr. Surman, gr. to C. W. Witherington, Esq., fairly well grown and bloomed, the *Rundle* type being conspicuous. Mr. Booker, gr. to R. Tompkins, Esq., Reading, had the best three, having well-grown and bloomed specimens of Mrs. G. Rundle, Mrs. Dixon, and *Emperor of China*. There was but one collection of six specimen Japanese, Mr. Surman being 1st with excellent plants, large, well grown, and finely flowered, consisting of *Mdlle. Lacroix*, *Madame Bertier Rendatler*, *Bouquet Fait*, *Red Dragon*, *James Salter*, and *Lady Selborne*. Mr. Powell, gr. to G. Gillingan, Esq., Reading, had the three best specimens, showing in good condition, *Elaine*, *Val d'Andorre*, and *Red Dragon*; Mr. Franklin, gr. to F. Lucas, Esq., Reading, was a good 2nd.

A very good feature was found in a class for six short table or window or table plants, and very charming they were—small, well-grown and bloomed, Mr. Surman was 1st—Mrs. Dixon, Mrs. Geo. Rundle, *James Salter*, *Lady Selborne*, *Madame Bertier Rendatler*, and *Bouquet Tait*; Mr. Franklin was 2nd, also with very nice small plants.

Mr. Armitage, gr. to N. Clarke, Esq., Reading, had the best three standards, with shield-shaped

heads, very formal and ugly in appearance; Mr. Franklin being 2nd.

The best standard was *King of Crimson*, from Mr. W. T. Aberny, nurseryman, Tilehurst, with *King of Crimson*; Mr. J. Leslie, Reading, being 2nd, with Mrs. G. Rundle.

The three best specimen pompon varieties came from Mr. Franklin—well grown and bloomed plants of *Sœur Maline*, *Rose Trevenna*, and *President Decaise*; Mr. Surman was 2nd.

Pompon varieties as table plants were a good feature also, Mr. Franklin being again 1st, and Mr. Surman 2nd.

Mr. Booker had the best standard, Mr. W. T. Aberny being 2nd.

Cut Blooms.—Some excellent flowers were shown in the class for eighteen incurved varieties, Mr. Allen, gr. to Sir G. Russell, Swallowfield Park, Reading, being 1st with finely-finished blooms of *Lord Alcester*, *Alfred Salter*, *Jeanne d'Arc*, *Lord Wolseley*, *Princess Alexandra*, *Jardin des Plantes*, *Golden Empress*, *Prince Alfred*, *Lord Eversley*, *Queen of England*, *Princess Teck*, *Cherub*, *Bronze Jardin des Plantes*, *Empress Eugénie*, *Bronze Queen*, *Emily Dale*, and *Barbaia*. 2nd, Mr. Neville, gr. to F. W. Flight, Esq., Twyford, Hants, having a good lot of blooms also.

The best twelve varieties, which included flowers already named, came from Mr. Brooks, gr. to H. A. Simonds, Esq., Andover, Mr. Basket, gr. to W. J. Palmer, Esq., Reading, being 2nd.

Mr. Allen had the best twelve reflexed large flowers, a very fine lot indeed, including *Alma*, *Cloth of Gold*, *Pink Christine*, *Cullingford*, *Mdlle. Tezier*, *Amy Furze*, *Golden Christine*, *Pink Christine*, and *King of Crimson*. 2nd, Mr. Brooks.

Standards of twelve Japanese varieties were remarkably fine, the best coming from Mr. Lane, gr. to Miss Bunning Smith, Ascot, who had *Ed. Molyneux*, *Mdlle. B. Piguy*, *Val d'Andorre*, *Soleil Levant*, *Madame J. Laing*, *Criterion*, *Belle Paule*, *Ralph Brocklebank*, *Jeanne Delaux*, *Thunberg*, *Sarah Owen*, and *Avalanche*. 2nd, F. W. Flight, Esq. Mr. Basket had the twelve best *Anemone*-flowered, the varieties being *Lady Margaret*, *Minnie Chate*, *Madame Thérèse Clos*, *Madame Clos*, *Fleur de Marie*, *Marguerite Solleville*, *Bacchus*, *Sœur Dorothee Souille*, and *Marguerite Villageoise*; 2nd, Mr. Lees, gr. to Mrs. Marsland, *The Wilderness*, Reading.

Standards of twelve blooms shown with 9 inches of stem and foliage were a good feature, the flowers very fine. Mr. Allen was 1st with *Mdlle. M. J. Piguy*, *Lord Alcester*, *Lord Wolseley*, *Thunberg*, *E. Molyneux*, *Empress of India*, *Jeanne Delaux*, *Madame J. Laing*, and *Golden Empress*, the mixture of Japanese and incurved varieties being very effective.

Mr. Surman was the only exhibitor of six bunches of pompon varieties, having *President*, *Adele Prisette*, *White Trevenna*, *St. Michael*, *Sœur Melaine*, and *Rose Trevenna*.

Table Decorations.—These are always a remarkably good feature at Reading. Mr. W. T. Aberny had the best table vase of Chrysanthemums, Mr. Brooks being 2nd. The best large hall vase of Chrysanthemums—a very fine feature indeed—came also from Mr. Aberny; Mr. Brooks being again 2nd. Miss Phillips, of Reading, a well known decorator, had the best stand of cut flowers and foliage; Mr. House, gr. to J. O. Taylor, Esq., Reading, being 2nd. The best stand of autumn flowers, leaves, and berries was a charmingly arranged basket from Miss L. Phillips, of Reading; Mr. Brooker being 2nd. Mr. Aberny had the best vase of everlasting, Mr. Dockerill, gr. to G. W. Palmer, Esq., Reading, being 2nd.

Miscellaneous Plants.—These included subjects for table decoration. Berried plants: Mr. Dockerill was 1st with two admirable specimens of *Rivina humilis*. Zonal *Pelagonium*: Mr. Basket showed three finely grown and flowered specimens. Double and Single Chinese *Primroses*: The Reading strains were to the fore in both classes. *Poinsettias*, *Violets*, *Capsicums*, &c. A magnificent specimen of *Eucharis amazonica* came from Mr. Butcher, gr. to G. Palmer, Esq., Reading, well grown and bloomed; Mr. Irvine, gr. to H. Ackroyd, Esq., Elmwood, being 2nd with a very fine plant also.

Orchids.—Several collections of three plants competed; Mr. Pound, gr. to G. May, Esq., Caversham, Reading, being a good 1st with excellent pieces of *Vanda corulea*, *V. tricolor*, and *Oncidium Rogersii*. Mr. Woolford, gr. to W. A. Palmer, Esq., Reading, came 2nd with *Cypripedium Spicerianum*, *C. insignes*, and *Dendrobium Dearei*.

Fruit.—A very good exhibition resulted. the

season considered. The two best bunches of Black Alicante came from Mr. Jennings, Forest Lodge, Farnborough, good-sized and well-coloured; Mr. Cooper, Sunninghill, being 2nd. Mr. Ashman, gr. to C. T. D. Crews, Esq., Sunninghill, had the best two bunches of Gros Colmar, very fine and well-coloured; Mr. Cooper being 2nd, with good examples also. The best two bunches of any other black grape were Madresfield Court, fine in colour but somewhat straggling in bunch, from Mr. Lees, the Wilderness Gardens. Mr. Piston, gr. to the Hon. C. S. Irby, Taplow, had Gros Maroc, well finished. Mr. Dockerill had the best two bunches of White Muscat. Mr. Turton was 1st with two bunches of any other white, having excellent Trebbiano, large in bunch and fine in quality.

Other Fruits.—Mr. Perkins, of Greenlands, was the only exhibitor of six dishes of fruit, having good White Muscat and Alnwick Seedling Grapes, Cox's Orange Pippin Apples, Forelle Pears, Melon, and Bananas. Mr. Turton had the best six dishes of Dessert Apples, showing in good form; 2nd, Mr. Paxton, with a good lot also. Mr. Perkins had the best dish of Cox's Orange Pippin, large and fine. Mr. Turton had the best six dishes of Culinary Apples. Mr. Irvine had the best dish of Golden Noble. Mr. Turton had the best four dishes of dessert Pears; Mr. Woolford was 2nd. Some good Cucumbers, Tomatos, and Mushrooms were also shown.

Miscellaneous Exhibits.—Mr. R. Owens, nurseryman, Maidenhead, had a stand of cut blooms of Chrysanthemums, including such new varieties as *fimbriatum*, bluish, awarded a First-class Certificate of Merit; John Thorpe, dark cerise; and George Daniels, light pink, broad in the petal, but wanting in substance.

Mr. J. Watkins, Pomona Farm, Withington, near Hereford, had a fine collection of seventy-five dishes of Apples, many of the sorts being brilliantly coloured.

WILTS HORTICULTURAL.

Nov. 15 and 16.—The third annual Chrysanthemum exhibition was held in the Salisbury Market House. The show, taken altogether, was an excellent one, but, unfortunately for the Society, the weather was very unpropitious on both days.

Pot Plants.—For the best group of Chrysanthemums, arranged for effect in a semi-circle (space not to exceed 10 feet in diameter), a 10 guinea cup and a small money prize was given. This was well won by Mr. Brown, Portland Place, Salisbury; Mr. Chalk, gr. to G. Read, Esq., West Wood, Salisbury, was 2nd. Mr. Brown was also 1st, for a very tastefully arranged group of miscellaneous plants. It consisted of Palms, Crotons, Dracenas, *Eucharis amazonica*, *Cypripediums*, and a nice piece of *Lælia anceps*, &c., edged with small plants of *Pteris cretica*, *albo-lineata*. Mr. Carry, gr. to Col. Pepper, Milford Hill, Salisbury, was 2nd.

For a group of Chrysanthemums arranged in a semi-circle, 8 feet in diameter, open only to those who do not keep a regular garden—1st prize, a challenge cup, value 5 guineas, and a small money prize—Mr. Charles Haskins, Poultry Cross, Salisbury, with a very creditable group of well-grown plants, tastefully arranged.

Mr. Brown had the best six specimen plants of Chrysanthemums, and Mr. Haskins the best four, both showing creditably grown plants. Mr. Frank Pearce, Salisbury, had the best trained specimen plant, with Elaine. Mr. Brown had the best two flowering plants (not Chrysanthemums), showing well-flowered plants of *Oncidium ornithorhynchum*, and a standard *Epiphyllum truncatum*, supporting a neat head of very bright flowers.

Cut Flowers.—For twenty-four blooms the 1st prize (a 10 guinea Cup and £1), went to Mr. H. W. Ward, gr. to the Earl of Radnor, Longford Castle, Salisbury, for a solid and fresh lot of blooms, of which Boule d'Or, Thunberg, Mdle. Lacroix, Duchess of Albany, Empress of India, Lord Alcester, and Alfred Salter were the best. Mr. Inglefield, gr. to Sir J. W. Keith, Bart., Tedworth House, Marlborough, was a very close 2nd, showing, among others, grand blooms of Mons. A. Elliot, Baron de Prailly, Bronze Queen, and Jeanne d'Arc. Mr. Flight, Conistiles, Twyford, Winchester, was 3rd. Four stands were staged.

A 5 guinea Cup and 10s. as 1st prize for eighteen blooms (open only to amateurs), went to Mr. Annalls, gr. to Chaloner Shenton, Esq., The Glen, Golden Common, Winchester, for a meritorious lot of blooms, his best being Edwin Molyneux, Glorio-

sum, Baron de Prailly, Madame Audiguier, and Lord Alcester; Mr. C. Haskins was a good 2nd.

Among seven good stands of twelve incurved varieties, Mr. Inglefield led the way with a dozen large solid blooms, Lord Wolseley, Golden Empress, Queen of England, and Jardin des Plantes, being his best blooms, Mr. Flight following closely.

Mr. Inglefield was again 1st for a like number of Japanese, with a grand lot of blooms, Baron de Prailly, Ralph Brocklebank, Meg Merrilies, and Duchess of Albany, being his best; Mr. Ward was a close 2nd: eight stands were put up.

Mr. Ward was 1st in a good competition for twelve reflexed, with even, fresh blooms—Cloth of Gold (very deep), Pink Christine, King of Crimsons, and Cullingfordii, being the most noticeable; Mr. Inglefield was a good 2nd.

Mr. Flight was 1st for twelve Anemone-flowered varieties, showing large, even blooms of leading varieties. The ladies' classes were well represented.

Fruit.—Mr. Ward was 1st, for a collection of fruit, six kinds, showing Gros Guillaume and Trebbiano Grapes—the bunches of the latter being fine—Cayenne Pine, Hero of Lockinge Melon, Glou Morceau, Pears, and Ribston Apples. Mr. Warden was a very close 2nd, showing splendidly coloured Alicante and Muscat of Alexandria Grapes as his best dishes. Mr. Warden was a good 1st for White Muscates, Black Alicantes, and with Gros Colmar. In the class for any other black Grape, Mr. Ward was 1st. In the class for any other white Grape, with good examples of Trebbiano. Mr. W. Scott, Exeter, was 1st for three dishes of dessert Apples, with good examples. Mr. Smith, gr. to the Bishop of Salisbury, the Palace, Salisbury, was a good 1st for a like number of kitchen varieties; and Mr. R. West, Northlands, Salisbury, had the best three dishes of Pears.

Non-competing Exhibits.—Mr. Ward put up three nice Queen Pine-apples, and two stands of Chrysanthemums; and the Messrs. Keynes, Williams & Co. arranged two pretty groups of miscellaneous plants.

IPSWICH AND EAST OF ENGLAND.

NOVEMBER 15 AND 16.—This was held in the Corn Exchange, but though good, was not characterised by the keen competition in the cut flower department of former years, as none of the professional London growers put in an appearance. The Rev. H. Berners, of Rose fame, was to the fore in many of the classes, and this gentleman took the National Chrysanthemum Society's Silver Medal for the best bloom in the Show; this was named Princess Imperial, but it is an open question whether it is really distinct from Lord Alcester. Be this as it may, the bloom referred to was exceptionally fine, and well deserved the award.

In the open class for twenty-four, twelve incurved and twelve Japanese, Mr. John Rolfe, gr. to Mrs. Rendale, of Hill House, Lawford, was 1st; the 2nd and 3rd prizes falling to Mr. R. Burrell and Mr. Miller.

In the amateurs' class for the same number of flowers, Mr. H. Lister, gr. to Lord Broke, of Easton's Lodge, Dunmow, was a good 1st; Mr. Palmer, gr. to T. H. Powell, Esq., of Drinkstone, coming in 2nd.

For the best twelve incurved in the open class, the Rev. H. A. Berners, of Harkstead, was 1st. In the open class for twelve Japanese, the Rev. H. C. Hales, of Lawford Place, came in 1st. In the amateurs' class for twelve Japanese, Mr. Palmer took 1st. For the best twelve incurved, Mr. Lester was 1st. The most noteworthy blooms in all these stands were—Criterion (very fine), Mrs. Wright, Mons. J. Laing, Mons. H. Payne, Meg Merrilies, Prince of Wales, Empress of India, Golden Empress, Eord Alcester, M. Marrouch, Jeanne Delaux, Mdle. Lacroix, Baron de Prailly, Bellegarde.

For twenty pot plants, the space allowed for grouping was 40 feet, and the competition was strong, but the judges looked less to size of blooms than to the dwarfness and compactness of the specimens, else the 3rd lot would have stood 1st. The 1st place fell to Mr. A. Double, gr. to R. M. Miller, Esq., the 2nd to Mr. Holdens, gr. to C. A. D. Malford, Esq., of West Lodge, Bergholt, and the 3rd to Mr. Jordan, gr. to the Rev. H. A. Berners, of Harkstead.

In the smaller classes, Mr. Chenery, gr. to Mrs. Booth, carried nearly all before him; and quite a feature in the show was the group contributed by persons residing in the borough at a rental not above £12.

In the fruit department, for the best collection of six dishes, Pines excluded, there were seven exhibits,

the 1st prize being taken by Mr. Rogers, gr. to Lord Rendlesham, the 2nd by Mr. Sheppard, gr. to Captain Berners, of Woolverstone Park.

For three bunches of Alicante Grapes, Mr. Chenery was 1st.

In the class for black of any other variety, Mr. McMillan was placed 1st; Mr. Tebenham, gr. to Lady North, coming 1st for Muscats.

In the class for white, of any other kind, Mr. Sheppard was 1st, with Golden Queen.

Pears and Apples were remarkably fine for the seasons, and Mr. Sheppard scored an easy victory in the two classes, for six of each and single do. of twelve: 1st for dessert Apples, Mr. Andrews.

The collections of vegetables were numerous and fine, and in this class Mr. Andrews was placed 1st; Mr. Cresswell, gr. to G. W. Charters, Esq., of Stoke Park, 2nd; but in the classes for Potatos, the latter carried off both the premier awards,

TIVERTON.

NOVEMBER 15.—The annual exhibit was held in the Drill Hall; an excellent lot of groups and trained plants was staged. The Apples and Pears were also of very fine quality.

Mr. Lake, gr. to E. Moyle, Esq., was placed 1st, with a group of Chrysanthemums arranged for effect, taking the Silver Medal of the National Society.

For thirty-six cut blooms of Chrysanthemums, eighteen incurved and eighteen Japanese, Mr. Barnes led, with a magnificent lot of Japanese; 2nd, Mr. Sparks, whose incurved were his best. Mr. Barnes also took several other prizes.

The principal prize-takers for fruit were:—Mr. James, gr. to Sir J. Walrod, Bart.; Mr. Peebles, Mr. H. Salmon, gr. to W. Dunsford, Esq.; Mr. J. Mogridge, gr. to Mrs. Ord; and Mr. Sparks; and in this division Apples and Pears were fine.

Messrs. Veitch & Sons, of Exeter, staged a collection of excellent and clean fruit; Mr. C. Sclater, sent a fine lot; Messrs. Lucombe, Pince & Co., also put up a collection of merit; and Messrs. Jarman & Co., of Chard, also exhibited.

CHISWICK HORTICULTURAL.

NOVEMBER 16.—This was a very pretty show, of moderate dimensions; the exhibits were of very fine quality. Mr. E. Coombes, Kingston, was the leading exhibitor in the chief class, for twenty-four cut blooms of Chrysanthemums, twelve each of Japanese and incurved; the incurved blooms were of very fine quality, and decidedly superior to his Japanese, which, however, were large and bright; Lord Alcester, Jardin des Plantes, and Queen of England, with Duchess of Albany, Boule d'Or, and Madame J. Laing were the best. Mr. C. J. Waite, the Glenhurst Gardens, Esher, followed, with a very creditable lot, strong in Japanese.

The last named exhibitor swept the board completely in the fruit and vegetable classes, showing strongly in many cases, and well in all; his Carrots in competition for Messrs. Sutton's prizes, were magnificent, clean, and of good even form; and his Black Alicante Grapes were also fine. He also led for Chinese Primulas, for twelve reflexed Chrysanthemum blooms, and for Sutton's prize for Primulas.

Mr. Coombes had the best stand of Pompons, and was a capital 2nd with large blooms in the class for twelve incurved blooms, following — Sanderson, Esq., St. Mary's Road, Harlesden, N.W., who had remarkably even well coloured blooms of medium size, of which Mrs. Brunlees, Hero of Stoke Newington, and Lord Alcester were conspicuous. The same exhibitor was also leader in the class for six blooms of one variety, incurved, showing Hero of Stoke Newington, in neat, solid specimens; and he again led in the amateurs' class for six distinct incurved.

Mr. Munro, gr. to E. C. Paul, Twickenham, was the leading exhibitor of twelve Japanese blooms, distinct, and a fine lot he staged, Comte de Germiny, Boule d'Or, and Gloriosum, being conspicuous examples.

Messrs. W. Fromow & Sons, nurserymen, Chiswick, staged the best six blooms of one variety of Japanese, with Mdle. Lacroix, clean, and of fair size.

A pretty lot single-flowered were sent by Mr. Chadwick, gr. to E. M. Nelson, Esq., Ealing, which secured the 1st place in that class.

E. H. Douet, Esq., Teddington, was the leading

exhibitor of Japanese and pompon blooms in the amateur section, showing very creditably.

Messrs. Fromow & Sons had the leading group of Chrysanthemums; and Mr. F. Mears, gr. to J. T. Thornycroft, Esq., Chiswick, was 2nd, both exhibitors showing strong plants with bright flowers.

Mr. A. Wright, gr. to E. H. Watts, Esq., Devonhurst, Chiswick, showed specimen plants.

Non-competing Exhibits were fairly numerous. The Royal Horticultural Society had three baskets of very excellent Grapes; they were Black Alicante, Alnwick Seedling, and Gros Colmar. Mr. May, gr. to the Marquis of Bute, Chiswick House, had an extensive group of Chrysanthemums. Messrs. C. Lee & Son, Hammersmith, had a varied collection of Apples, including the most popular varieties. Orchids were sent by Mr. Cowley, gr. to F. G. Tautz, Esq., Shepherd's Bush, W., and by Messrs. Fromow, who had a number of plants of *Sonerila Hendersoni*, and *Odontoglossum grande* was fine. Crotons were shown by the same firm.

PEMBROKESHIRE.

NOVEMBER 15.—This show was held in the Market House, Pembroke, and a show of good general quality was got together, the exhibits being very numerous. Mr. W. B. Fisner, gr. to the Earl of Cawdor, Stackpole Court, Pembroke, carried off the principal awards in the open classes for Chrysanthemums, and Messrs. Crichton and French were also successful. Mr. J. Dumble, gr. to Sir E. G. Phillips, Bart., Pembroke, had the best bloom, in Lord Alcester; and he also took many other honours, and the National Chrysanthemum Society's Medals were awarded to Mr. Fisher and Mr. F. J. Skyrme, Monkton, the last named being the most successful amateur; Mr. T. Crofton, Monkton, also showing well. In the fruit and vegetable section Messrs. Clayton, Williams, Crichton, and Croft were the leaders.

THE PROVINCIAL SHOW OF THE NATIONAL CHRYSANTHEMUM.

NOVEMBER 16 AND 17.—This exhibition took place in conjunction with the fourth annual show of the Sheffield and West Riding Chrysanthemum Society, and the Sheffield and Hallamshire Gardeners' Mutual Improvement Society, and was held in the spacious Corn Exchange upon the above dates. We must confess to a feeling of disappointment with the exhibition which had but few features of a high-class character, the plants being of a poor description generally. The Hallamshire growers say, and with a great deal of truth, that they have had to contend with a remarkably untoward season; that frost, wet, and the absence of sunshine, had greatly affected the plants, and that not a few that had expected to exhibit found themselves unable to do so. As an exhibition it fell much below Reading, for instance; but this is, perhaps, hardly a fair comparison. But all that could have been done was doubtless done to make the exhibition worthy of its name, only one Southern grower competed, which was a disappointment.

In the classes for thirty-six blooms of incurved varieties, twenty-four, twelve, and six, there was not a single exhibitor; and there was a similar absence in the classes for twenty-four Japanese, six Japanese, twelve reflexed, twelve reflexed Japanese, twelve large Anemone, twelve large Japanese Anemone, twelve pompons, and twelve Anemone pompons. It will thus be seen that in the very classes in which a large display was reasonably looked for there was the entire absence of any interest. Perhaps the Southern growers were somewhat afraid of meeting the North, and *vice versa*. The arrangements were, on the whole, good; but it will be found necessary in the future, if other provincial shows are held, that the executive in London have a fuller knowledge of matters than appeared to be the case at Sheffield.

Plants.—Groups of Chrysanthemums arranged for effect. That from Mr. J. Redmill, gr. to J. G. Lowwood, Esq., Glossop Road, comprising fairly grown and bloomed plants, edged with Palms, &c. Mr. B. T. Bromhead, Bromhall Park, was the only exhibitor of six trained specimens.

With three plants, Mrs. H. Wilson Westbrook, was 1st; and Mr. Redmill 2nd.

Mr. B. P. Bromhead had the best three pompons, Mrs. Wilson being 2nd; but in the next class, for one specimen, the positions were reversed.

In the class for a group of miscellaneous plants there were several entries, and they came in very

useful as relieving the dead cold appearance of the Exchange walls. The best, a tastefully arranged one came from Mr. W. Collier, gr. to John Eaton, Esq., Sharrow Bank. Palms, Crotons, Dracenas, Bouvardias, Chrysanthemums and Gloxinias being mingled with excellent effect; Mrs. H. Wilson was a good 2nd.

There were also plant classes, the competition open to growers residing within a radius of 20 miles of Sheffield parish church; and, wide as the district is, the plants produced were poor. Here, as before, the honours were divided between Messrs. Lowood and Bromhead.

Miscellaneous Plants.—The best twenty pots of British Ferns came from Mr. J. Eadon, Carnfield Road; Mr. J. Newsham, Meersbrook, being 2nd; the latter the best three Filmy Ferns, having good examples of *Trichomanes radicans*, *Hymenophyllum tunbridgense*, and *H. Wilsoni*. Mr. Bromhead had the best six exotic Ferns; Mr. J. Eadon being 2nd. Chinese Primroses were of indifferent quality. Mrs. H. Wilson had the best six, double and single; Mr. R. F. Mosely being 2nd. Mr. John Spaight, gr. to Mrs. Fawcett, Clark House, Sheffield, had the best four pots of Roman Hyacinths; Mr. John Taylor, gr. to Thomas Eyre, Esq., Hillsborough, Sheffield, being 2nd. Some fine Epiphyllums were shown by Mr. J. Spaight; Mr. D. B. Fellows being 2nd. Mr. J. Spaight had the best specimen Epiphyllum; Mr. Lowood being 2nd. Classes were provided for Orchids, but none were exhibited. Mr. D. B. Fellows had the best specimen *Camellia*, Mr. Lowood being 2nd. The best specimen stove or greenhouse plant was *Epacris exoniensis*, from Mrs. H. Wilson. Mr. Spaight had the best three plants of *Selaginellas*, Mr. R. Howarth being 2nd. Mr. J. C. Lowood had the three best pots of *Mignonette*.

Cut Flowers.—The greatest interest in the cut flower classes centred in that for the best representative collection of large-flowering Chrysanthemums, not more than 12 blooms of any section. There were three competitors, and the judges were under the necessity of disqualifying each, putting on record their reasons for so doing. They then at the request of the representatives of the parent Society awarded the prizes. The most valuable, that of a Silver Cup, value 15 guineas, and £10 in cash, was awarded to Mr. R. Packman, The Gardens, Impney Hall, Droitwich, who had some very fine blooms. His twelve Japanese were Avalanche, Madame C. Andiguier, E. Molyneux, Baronne de Prailly, Boule d'Or, Meg Merrilies, Ralph Brocklebank, Val d'Andorre, Jeanne Delaux, Yellow Dragon, Madame John Laing, and Thunberg. His twelve incurved were Lord Alcester, Queen of England, Empress of India, Lord Wolsley, Alfred Salter, Prince Alfred, Golden Empress, Golden Queen of England, John Salter, Jeanne d'Arc, Princess of Wales, and Mrs. Heale. His best reflexed Japanese flowers were Val d'Andorre, Amy Farze, Jeanne Delaux, Maiden's Blush, Madame J. Laing, Criterion, and L'Adorable. His best reflexed large-flowering were King of Crimsons, Irene, Chevalier Domage, Cullingfordi, Golden Christine, the pink, peach, and white varieties also. His best anemone-flowered were Mrs. Pethers, Acquisition, Fleur de Marie, Gluck, Empress, and Lady Margaret. But he staged but six blooms of Japanese anemones, whereas the schedule required twelve. 2nd, Mr. Packman, gr. to C. Shea, Esq., Foot's Cray, Kent, the only Southern grower who competed, who had of Japanese varieties, Boule d'Or, Hamlet, Gloriosum, Ralph Brocklebank, Madame J. M. Pigny, Marsa, Meg Merrilies, Martha Harding, Florence Piercy, and Avalanche. His reflexed Japanese were Criterion, Val d'Andorre, Elaine, L'Adorable, and a sport from Madame J. Laing. His incurved, Mrs. Heale, Golden Empress, Queen of England, Lord Alcester, Baron Beust, Jardin des Plantes, Jeanne d'Arc John Salter, Cherub, and Mrs. W. Shipman. His reflexed large flowering, Mrs. Forsyth, Cullingfordi, Dr. Sharpe, Golden Christine, and Chevalier Domage. His Japanese Anemone-flowered, Fabian de Mediana, Sœur Dorothee Souille, Minnie Chate, Jean Marty, and Mons. Cabrol. His large-flowered Anemone varieties, Miss Annie Lowe, Gluck, Lady Margaret, Georges Sand, Alveole, and La Marguerite. The 3rd prize went to Mr. T. B. Morton, nurseryman, Darlington.

Mr. Parker was the only exhibitor of thirty-six Japanese blooms, not less than eighteen varieties, and very fine they were; the sorts, Boule d'Or, Martha Hardinge, Maiden's Blush, Japonais, Baronne de Prailly, Comte de Germigny, Madame B. Pigny,

Duchess of Albany, Meg Merrilies, Ralph Brocklebank, Jeanne Delaux, Madame C. Andiguier, Avalanche, Thunberg, Marguerite de Marrouh, E. Molyneux, Madame J. Laing, Mlle. Lacroix, Mons. Burnet, Fair Maid, and Ferdinand Ferol.

The best twelve Japanese came from Mr. Arthur Wilson, Hull.

In the distinct classes for cut blooms the leading prize-winners were Messrs. J. G. Lowood, R. F. Bromhead, and Mrs. Wilson, these three being the only exhibitors who had flowers up to anything like exhibition mark.

Hand bouquets of Chrysanthemums, also of miscellaneous flowers, button-holes, and stands of six bunches of cut flowers did not call for special remark.

There was also a section of classes for cut Chrysanthemums, and also plants from amateurs and cottagers, but they also contained nothing of special merit.

Honorary Awards.—Certificates of Merit were awarded to Messrs. Fisher, Son & Sibray, Hands-worth Nursery, Sheffield, for a large group of valuable plants arranged for effect; also for blooms of greenhouse Rhododendrons and Lapagerias. To Messrs. Henry Cannell & Sons, nurserymen, Swanley, for a large collection of cut blooms of single and double zonal Pelargoniums of the highest quality, that seemed to excite the wonder of the Sheffield people; also of cut Chrysanthemums of various types, among them a large, deep golden, single variety of great excellence, named Sir Thomas Symonds. To Messrs. Geo. Bunyard & Co., nurserymen, Maidstone, for an extensive collection of Apples and Pears, including many of the newer sorts. To Messrs. Hiram Shaw & Son, nurserymen, Sheffield, for a large group of plants. To Mr. Seagrave, nurserymen, Sheffield, for the same; and to Messrs. Davis & Jones, Chrysanthemum Nursery, Camberwell, for a collection of the newer varieties of Chrysanthemums.

First-class Certificates of Merit were awarded to Mr. E. Beckett, The Gardens, Aldenham House, Elstree, for a very fine Golden Japanese Chrysanthemum named Sunflower, and to Messrs. Fisher, Son, & Sibray, for *Lapageria rosea maculata*, a large number of flowers being shown, all regularly maculated with white.

A representative stand of garden requisites was arranged by Messrs. W. Wood & Son, horticultural sundriesmen, Wood Green, which attracted a good deal of attention.

The premium bloom of incurved Chrysanthemums was Lord Alcester, in Mr. Parker's stand from Impney Gardens; and the premier Japanese Avalanche, also shown by Mr. Parker.

CHESHUNT CHRYSANTHEMUM.

NOV. 16 AND 17.—The fifth exhibition of this Society was held in St. Mary's Hall, Cheshunt. The groups of plants were very good, the miscellaneous collections attracting more attention even than those set apart wholly for Chrysanthemums. The cut blooms were numerous and very good, the Japanese section being especially so. The 1st prize group of plants was composed mostly of good examples of incurved and Japanese varieties, and was from Mr. W. Collins, gr. to J. W. Carlisle, Esq., Ponsbourne Park. The group of miscellaneous plants to which the 1st prize was awarded was a meritorious one from Mr. B. Searin, gr. to J. C. Partington, Esq., Heaton House. It was well arranged and mainly made up of Orchids of grand quality, *Odontoglossum crispum* with long graceful spikes; *Cattleya Bowringiana* in several good forms, one of them very richly coloured. Chinese Primulas were excellent in quality, and it was a close contest between Mr. H. Bryant, gr. to E. H. Clarke, Esq., and A. Rowden, gr. to T. Walton, Esq., for the 1st prize; the first-named leading with handsome and distinct examples.

The best blooms were sent from Mr. T. Bettesworth, gr. to R. Ewing, Esq., Burton Grange. His flowers won 1st prize in the class for twelve Japanese and twelve incurved blooms, and he led also for twelve Japanese. Mrs. Wheeler was very fine, large in size, and incurved; the inside of the petals crimson, outer a clear buff colour. Boule d'Or, Meg Merrilies, and R. Brocklebank were also good. Mr. Collins was 1st, with a stand of excellent reflexed blooms. The same exhibitor leading for some excellent Alicante Grapes. Mr. Bettesworth was 1st for six dishes of Apples. The best Pears were sent from Mr. J. Nicholson, gr. to W. Mills, Esq.,

Sewardstone Lodge—they were clean and well ripened fruits.

The most interesting exhibits of Chrysanthemums was that from the nursery of Messrs. Paul & Son, Chislehurst. Some distinct new varieties were exhibited, such as William Earley, Japanese, is an excellent variety, with reflexed petals, the flower full, well formed, and of a rich purple colour; Marsa, D. Stiggall, Japanese, petals straight, the flower, rich crimson, shading to maroon at the centre; Mons. Garner, Japanese, deep yellow, orange-yellow margin, twisted petals; Joseph Arch, full purple reflexed; Mons. V. Morel, blush, petals broad and pointed, very distinct; L'Amie Layton, purplish-rose florets, buff centre, distinct large Anemone variety; Grande Alveola, another good large flowered Anemone, with pale peach flowers, good centre; Miss A. Lowe, a primrose-coloured large flowered Anemone.

DERBY CHRYSANTHEMUM ASSOCIATION.

Nov. 17.—In conjunction with this was held also the annual Chrysanthemum show of the Midland Railway Horticultural and Cottage Garden Society, in the spacious Drill Hall, and here, as at Sheffield, it was contended that the season had seriously affected the Chrysanthemums, and especially the plants. The latter were poor for a place like Derby, but the Association is young, and has been in operation four years only.

The best things were found in the open classes, and in that for twelve cut blooms of incurved varieties, Mr. A. H. Fowkes, Northampton, was 1st, with some very good blooms; Mr. W. G. Marshall, Taunton, being 2nd. Mr. Fowkes also had the best twelve blooms of Japanese varieties, Mr. Marshall being 2nd once more.

There was a class for a group of Chrysanthemums arranged for effect, the best coming from Mr. J. H. Biggs, of Derby; Mr. F. Bancroft, the Hon. Secretary of the Society, being 2nd.

The best bouquet of Chrysanthemums came from Mr. J. H. Goodacre, Elvaston Castle Gardens.

In the classes for cut blooms, open to members of the Society, the principal prize-winners were:—Mr. F. Bancroft, Mr. H. Bancroft, Mr. C. Carrington, Mr. W. Fowkes, and Mr. E. Litchfield. The flowers shown were fairly good, but they fell short of what one might fairly expect to see in the North. The same can be said of all the flowers shown from the immediate locality.

Messrs. Richard Smith & Co., St. John's Nursery, Worcester, contributed a collection of fifty dishes of Apples and Pears of an interesting character; and Mr. E. Cooling, nurseryman, Derby, contributed some large plants of green-leaved *Dracænas* and Palms, also crosses, wreaths, &c.

DEVON AND EXETER HORTICULTURAL.

NOVEMBER 16.—The annual exhibition of Chrysanthemums was held in the Victoria Hall, Exeter, on Friday, November 16, and will certainly rank as the best autumn exhibition the Society has yet held. The quality of the exhibits was excellent, everywhere the arrangements of the exhibits in the hall were effective. The Society may congratulate themselves on having had an exhibition second to no county show. The Chrysanthemums in the groups, for quality of bloom were models of perfection. The cut blooms were excellent, the Japanese being perhaps the best; but the incurved varieties were shown in better form than on any previous occasion, the only deficiency to bring them to perfection was the art of dressing them; all other qualities being present.

Fruit, especially Grapes, was equal to anything previously seen here.

BIRMINGHAM AND MIDLAND COUNTIES.

THE twenty-eighth exhibition of Chrysanthemums took place at the Town Hall, Birmingham, on Wednesday and Thursday, November 21 and 22, and was of surprising excellence, considering the injury caused to the plants by early frosts. Chrysanthemums in pots as groups, &c., were attractive. Florists' work was better than usual. The local nursery trade contributed decorative plants. In the fruit classes there was a very fair display,

although as a whole there were in these fewer exhibits than last year. About 100 bunches of Grapes were shown. Pears and Apples were good, the display being enhanced by non-competing lots of fruit from Messrs. T. Rivers & Sons, Messrs. R. Smith & Co., and Messrs. Cranston & Co.

Among the principal prize-winners were the Right Hon. Joseph Chamberlain, M.P. (gr., Mr. Cooper), who took a large number of 1sts, including the principal honours awarded for Chrysanthemums in pots. Mr. J. Corbett, M.P. (gr., Mr. Parker), was equally successful in winning the principal honours for cut blooms. Another very successful exhibitor of Chrysanthemums was Sir Thomas Martineau (gr., Mr. Brasier); Mr. D. Lindsey, gr. to Sir T. Edwards-Moss, Bart., also won several prizes.

The fruit prizes were mainly won by distant exhibitors, the chief of whom were the Marquis of Bath (gr., Mr. Pratt), the Earl of Harrington (gr., Mr. Goodacre), the Earl of Shrewsbury (gr., Mr. Rabone), Mr. Gilman, Ingestre; the Duke of Newcastle (gr., Mr. Gleeson), Sir J. E. Moss, Bart., Mr. J. Corbett, M.P., and the Hon. A. C. G. Calthorpe.

Some special prizes, offered by Messrs. Sutton & Sons, for vegetables, six distinct varieties, brought a few fine exhibits, and this department of the show will in future years possibly develop into an attractive feature.

LAW NOTES.

SANDER v. THE DUCHESS OF MONTROSE.

THIS was an action before Mr. Justice Denman and a special jury to recover £1730 6s. 4d. for Orchids supplied, and for work done in connection with a conservatory belonging to the Duchess of Montrose.

Mr. Reid, Q.C., in opening the case for the plaintiff, said that he carried on business at St. Albans, and was one of the largest Orchid growers in the world. The Duchess of Montrose had a place called Sefton Lodge, which was at or near Newmarket, and at the beginning of 1887, or the end of 1886, she was desirous of embellishing the house. Accordingly, she had a large conservatory constructed, it was divided into three parts. The central part had a dome, and was intended for a Palm-house, and there were two other departments. The conservatory was constructed by a firm at Birmingham, but the place did not give satisfaction to the Duchess, and she made some complaints to the plaintiff. All he did in connection with the house itself was to give advice and assistance gratuitously to the Duchess as to the work to be done. She arranged with the plaintiff that he should supply the central house with a rockery; and that there should be a lake and also fountains. Unfortunately there was no contract as to price, and, therefore, it would be necessary to call witnesses as to the value of the work done. The plaintiff sent in his account with respect to it, and it amounted to £554, but there was a small mistake, which arose from the plaintiff's book-keeper not being at the time in good health. £16 16s. was included in the account which should not have been included, and that sum would have to be deducted. On the other hand, and for the same reason, that £554 by no means included the whole outlay to which the plaintiff had been put. There were two wings to the conservatory, one of which the Duchess had filled with Geraniums and other plants, and for the decoration of the other wing she contracted with the plaintiff that he should supply 1000 Orchids at one guinea each. The learned counsel said that he believed that this was a very moderate figure indeed, for sometimes they fetched as much as £40, £50, and £100 for one plant. The Duchess left it to Mr. Sander's judgment to provide 1000 Orchids for 1000 guineas, according to his judgment, the object being to get Orchids that would bloom when certain Newmarket races were to be run about the beginning of July. Mr. Sander did his best to supply Orchids to execute this order, and to have the Orchids sent in in June. He heard of no complaint until later on, and indeed, the Duchess expressed great satisfac-

tion when the 1000 Orchids had been placed in one of these side houses. She communicated with the foreman of the plaintiff, and said that she would like some more colour, many of them being white—and necessarily so, because those would be the plants that would be in blossom at the time required. She also told the foreman that Mr. Sander was to send some more Orchids with colour, to an amount not to exceed 200 guineas in value. He, in fact, sent down £126 worth of coloured Orchids, because even his large collection could not supply more than that quantity of coloured Orchids that would bloom at the time required. In July the plaintiff sent an invoice for furnishing the conservatory. That was the central part of it, and the amount was £554. This was followed by another invoice, charging the Duchess with £1050 for the 1000 Orchids, and with £126 for the latter parcel of Orchids. No letter was received from the Duchess at that time, but on July 10 the plaintiff wrote sending an invoice for the total amount of £1730, of which he said a large proportion had been expended in labour and materials, and this being money out of pocket, he asked for £500 upon account. Soon afterwards the Duchess said that she had asked her clerk to write and explain to the plaintiff that the arrangement was that the plaintiff should fill the Orchid-houses for £1000, that he had stated the same to the Duke of Marlborough, and that the money was to be supplied for furnishing both houses. It was added that the Duke of Marlborough and the Duchess of Montrose agreed that the plaintiff had not fulfilled the conditions of the agreement, and that he could take back all the white, unless the plaintiff adhered to the understanding with the Duke of Marlborough that there should be coloured Orchids. The learned counsel added that no doubt the plaintiff had had conversations with the Duke of Marlborough, but the Duke was perfectly aware that the agreement was to supply 1000 plants for 1000 guineas, and that the plaintiff was not to furnish the two houses for £1000. To this communication the plaintiff answered that her Grace had ordered of him 1000 Orchids at £1 1s. each; that he had spoken to the Duke of Marlborough several times about the matter, and that he fully agreed with the plaintiff that it was the best to induce her Grace to have 1000 plants at the price named, and that he had supplied her with plants which were worth much more. He added that he would gladly refer the matter to the Duke of Marlborough, and abide by his decision, feeling that he had done his very best for her Grace, but in the meantime he should be glad to have a cheque for £500. This money was not forwarded, and in February of this year the plaintiff was reluctantly obliged to issue a writ, and subsequently there was an order that upon payment of £700 her Grace should have leave to defend the action.

Mr. Sander, the plaintiff, was examined in support of his counsel. In the course of his evidence he stated that the Orchids were supplied by a certain time, because the Prince of Wales was going down to Newmarket.

Cross-examined by Mr. Philbrick.—I was to select a thousand plants, choosing the size and colour. I got the order in Belgrave Square. I did not book the order. I carried it in my head. I have no scrap of writing about the bargain. I received the order in the morning and executed it in the afternoon. My manager picked out the Orchids for the £126. It was left entirely in our hands. The value of Orchids depends upon the size and variety. I have known bulbs sold at 1s. a-piece; but what I sold to the Duchess were fine established plants. The design of the rockeries was left to me. I had had a previous transaction with the Duchess. She came down to my nursery with the Duke of Marlborough. She bought four Orchids for 16 guineas, which she has never paid me for.

Mr. Philbrick: Did the Duke of Marlborough say that the Duchess would be a valuable customer?—Witness: Yes; and I thought she would be quite a new market for us. I had a correspondence with

Taylor, the head gardener of the Duchess, at Sefton Lodge.

Mr. Philbrick: Did your manager receive the following letter from him?—"Dear Sir,—Your letter to hand. I can assure you her Grace is delighted with the Palm-house. She is continually taking gentlemen and ladies into the place, and spends most of her time there. I consider you have greatly pleased her, and Mr. Sander must keep the pot boiling now she is right; so don't spare coming."—Witness: Yes, he did.

Mr. PHILBRICK: Did he also write you the following letter?—"Sir,—Your letter came duly to hand. The Duchess sent for Clarke about the tiles, to give an estimate; but nothing is decided at present. I am sure I shall get the old gal round about the Orchids. I had one or two long chats with her, and I think that I quite talked her round. I shall ask her to give you more orders for Orchids when I see her again to speak to her on the matter. We was very full of company; had the Prince of Wales here again; the house was full, and will be again this next week. All things are looking well, and the old gal was very pleased. I only hope she may continue so."—Witness: Yes, he did.

James Collins was called and examined by Mr. Reid.—I have had twenty-five years' experience in Orchid growing. I was sent to Newmarket to arrange the Orchids. They were worth £1000 and more. One of the houses was full of greenhouse plants. The Duchess came on Sunday, July 3, and saw me on the Monday. I saw her Grace alone, and she said the arrangement of the Palm-house and Orchid-house was simply beautiful. She said the Prince of Wales was going to dine with her on Thursday night, and she should like some more colour. She asked me to order coloured to the amount of £200. She sent a message to Mr. Sander to say she was much pleased. I gave the order to the manager. He fixed the price, and I took them to Newmarket the next Wednesday. The price was rather under than over. After I had arranged this last the Duchess said she thought it was a great improvement.

Cross-examined by Mr. Philbrick.—She did not complain of too much white. She merely suggested that some colour would improve. She did not say she was disappointed and wanted more colour. I unpacked them and arranged them on the shelves. I was there six weeks taking care of them. It requires great skill to arrange Orchids and the colours.

Mr. Coningsby, the foreman of the plaintiff's Orchid-houses, said that the plaintiff told him to pick out 1000 Orchids to the value of 1000 guineas, and he was very careful in selecting them. There was not a single plant in the 1000 that was worth less than a guinea.

Several experts were examined, and stated that in their opinion the prices charged for the work done and for the Orchids supplied were fair, and indeed lower than usual.

Upon the conclusion of the evidence for the plaintiff the further hearing of the case was adjourned. As we are going to press, we learn the jury gave a verdict in favour of Mr. Sander for the full amount claimed, with costs.

TARO (CALADIUM ESCULENTUM).—This is best grown on low ground near to water. In Hainau the beds are made about 4 feet wide, with a trench on each side to collect water. Plants are raised from the small Taros about the size of a Plum growing on a parent root, and these are set about February or March in two rows at each side of the bed, and between these rows holes are dug about the size of a Dutch cheese, which are kept full of human manure. Two kinds of Taros are known, the early maturing about July, and the late, which is ready about October; the first weighs about 6 oz., and the second about 2 lb. Of some kinds of Taros the leaves only are eaten as vegetables. They are gathered as soon as they appear, which is once every few days.

THE WEATHER.

[Accumulated temperature indicates the combined amount and duration of the excess or defect of temperature above or below 32° F. for the period named, and is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	Above or below the Mean for the week ending Nov. 19.	TEMPERATURE.			
		ACCUMULATED.			
		Above 42° for the Week.	Below 42° for the Week.	Above 42° difference from Mean since Jan. 3, 1888.	Below 42° difference from Mean since Jan. 3, 1888.
Principal Wheat-producing Districts.		Day-deg.	Day-deg.	Day-deg.	Day-deg.
0. SCOTLAND, N. ...	5 above	28	2	—231	+180
1. SCOTLAND, E. ...	7 above	33	4	—440	+110
2. ENGLAND, N.E. ...	7 above	39	0	—500	+53
3. ENGLAND, E. ...	8 above	53	0	—373	+176
4. MIDLAND COS. ...	10 above	59	0	—457	+166
5. ENGLAND, S. ...	9 above	69	0	—446	+208
Principal Grazing, &c., Districts.					
6. SCOTLAND, W. ...	7 above	40	0	—349	+67
7. ENGLAND, N.W. ...	6 above	40	0	—369	+108
8. ENGLAND, S.W. ...	7 above	63	0	—473	+255
9. IRELAND, N. ...	6 above	45	0	—255	+29
10. IRELAND, S. ...	7 above	67	0	—243	+97
— CHANNEL ISLANDS	7 above	83	0	—307	+153

DISTRICTS.	More or less than the Mean for the Week.	RAINFALL.		BRIGHT SUNSHINE.	
		No. of Rainy Days since Jan. 3, 1888.	Total Fall since Jan. 3, 1888.	Percentage of possible Duration for the Week.	Percentage of possible Duration since Jan. 3, 1888.
		Tenths of Inch.	Ins.		
Principal Wheat-producing Districts.					
0. SCOTLAND, N. ...	8 more	210	36.5	9	28
1. SCOTLAND, E. ...	7 more	182	26.2	13	29
2. ENGLAND, N.E. ...	1 less	164	23.7	15	26
3. ENGLAND, E. ...	2 less	168	25.5	16	29
4. MIDLAND COS. ...	2 more	154	23.1	18	27
5. ENGLAND, S. ...	5 less	161	24.9	12	29
Principal Grazing, &c., Districts.					
6. SCOTLAND, W. ...	5 more	171	36.9	11	30
7. ENGLAND, N.W. ...	5 more	174	26.6	3	28
8. ENGLAND, S.W. ...	1 more	179	32.4	13	34
9. IRELAND, N. ...	2 more	184	31.3	21	27
10. IRELAND, S. ...	3 less	166	32.1	22	32
— CHANNEL ISLANDS	6 less	197	27.5	25	40

THE PAST WEEK.

The following summary record of the weather for the week ending Nov. 19, is furnished from the Meteorological Office:—

"The weather has again been dull, rough, and unsettled very generally, with much rain in the north and north-west and frequent, but less heavy, falls elsewhere. Thunder and lightning were experienced at several of our north and northwest stations on the 17th.

"The temperature has been much above the mean in all districts. In Scotland the excess has varied from 5° to 7°, and in Ireland from 6° to 7°, while over England it ranged from 6° at the north-west stations, and 7° in the north-east and south-west, to 8° in 'England, E.' 9° in 'England, S.' and 10° in the 'Midland Counties.' The highest of the maxima which were registered on the 15th in Ireland, and on the 16th over Great Britain, varied from 56° in

'Scotland, W.' to 62° in 'England, E.' The lowest of the minima were recorded at most stations either on the 18th or 19th, when they ranged from 32° to 35° in Scotland, from 39° to 41° in Ireland, and from 36° to 40° in England; in the 'Channel Islands' the lowest reading was 46°. During the greater part of the week the minima were very high for the time of year.

"The rainfall has been considerably more than the mean in Scotland and rather more in some parts of England and Ireland, but in the east and south of England and in the south of Ireland a deficit is shown.

"Bright sunshine has continued very deficient generally, but has been rather more prevalent in Ireland and the 'Channel Islands' than elsewhere. The percentage of the possible amount of duration ranged from 3 in 'England, N.W.' and 9 in 'Scotland, N.' to 18 in the 'Midland Counties,' to 22 in 'Ireland, S.' and 25 in the 'Channel Islands.'"

MEAN TEMPERATURE OBSERVED AT CHISWICK DURING THE WEEK ENDING DEC. 1. (AVERAGE OF FORTY-FOUR YEARS.)

Nov. 23 ...	41°·5	Nov. 29 ...	41°·4
" 26 ...	41°·4	" 30 ...	41°·3
" 27 ...	41°·4	Dec. 1 ...	41°·3
" 28 ...	41°·4	Mean for the week ...	41°·4

MARKETS.

COVENT GARDEN, November 22.

[We cannot accept any editorial responsibility for the subjoined reports, which, however, are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list, and who are responsible for the quotations. It must be remembered that these quotations represent averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the supply in the market, and they fluctuate, not only from day to day, but often several times in one day, and therefore the prices quoted as averages for the past week must not be taken as indicating the particular prices at any particular date, and still less can they be taken as guides to the prices in the coming week. Ed.]

BUSINESS still quiet. Market well supplied with all classes of goods. Prices low all round. *James Webber, Wholesale Apple Market.*

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Apples, half-sieve ...	2 0-4 6	Lemons, per dozen ...	12 0-21 0
— Canada and Nova ...	2 0-6 0	Peaches, dozen ...	2 0-6 0
— Scotia, per barrello ...	0 15 0	Pine-apples, Eng., lb. ...	1 6-2 0
Cobs, 100 lb. ...	10 0-...	— St. Michael, each ...	2 0-8 0
Grapes, per lb. ...	0 6-2 6		

VEGETABLES.—AVERAGE RETAIL PRICES.

	s. d. s. d.		s. d. s. d.
Beet, red, per dozen ...	1 0-2 0	Mustard and Cress, punnet ...	0 4-...
Carrots, per bunch ...	0 6-...	Onions, per bunch ...	0 5-...
Cauliflowers, each ...	0 3-...	Parley, per bunch ...	0 4-...
Celery, per bundle ...	1 6-2 0	Potatoes, per cwt. ...	4 0-5 0
Cucumbers, each ...	0 9-...	" kidney, per cwt. ...	4 0-5 0
Endive, per dozen ...	3 0-...	Shallots, per lb. ...	0 6-...
Green Mint, bunch ...	0 6-...	Spinach, per bushel ...	2 6-...
Herbs, per bunch ...	0 6-...	Tomatoes, per lb. ...	1 0-...
Leeks, per bunch ...	0 4-...	Turnips, per bunch, new ...	0 5-...
Lettuce, per dozen ...	2 0-...		
Mushrooms, punnet ...	2 6-...	POTATOS.—Beauty of Hebron, 70s. to 80s.; Imperators, 65s. to 75s.; and Magnums, 80s. to 90s. per ton.	

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Aralia Sieboldi, doz. ...	6 0-18 0	Ferns, in var., doz. ...	4 0-18 0
Chrysanthemums, doz. ...	4 0-9 0	Foliage plants, various, each ...	2 0-10 0
— large plants, each ...	2 0-4 0	Ficus elastica, each ...	1 6-7 0
Coleus, dozen ...	2 0-4 0	Fuchsias, doz. ...	3 0-6 0
Cyperus, per dozen ...	4 0-12 0	Hyacinths, Roman, dozen pots ...	10 0-12 0
Dracena terminalis, per dozen ...	30 0-60 0	Liliums, var., doz. ...	18 0-30 0
— viridis, per doz. ...	12 0-24 0	Marguerites, doz. ...	6 0-12 0
Erica hymalis, doz. ...	12 0-24 0	Palms in var., each ...	2 6-21 0
— cafrica, dozen ...	9 0-12 0	Pelargoniums, scarlet, let, per dozen ...	4 0-9 0
— gracilis, dozen ...	8 0-12 0	Primulas, per dozen ...	4 0-6 0
Euonymus, in var., per dozen ...	6 0-18 0	Solanums, dozen ...	9 0-15 0
Evergreens, in var., per dozen ...	6 0-24 0		

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Abutilons, 12 bun. ...	3 0-6 0	Narciss., paper-white, (French), 12 bun. ...	3 0-6 0
Bouvardias, per bun. ...	0 6-1 0	Pelargoniums, 12 spr. ...	1 0-1 6
Camellias, 12 blms. ...	3 0-4 0	— scarlet, 12 spr. ...	4 0-8 0
Caranations, 12 blms. ...	2 0-3 0	Primulas, double, 12 sprays ...	1 0-1 8
Chrysanthemums, 12 blooms ...	0 6-3 0	Roses, Tea, per doz. ...	1 0-3 0
— dozen bunches ...	4 0-12 0	— coloured, dozen ...	2 0-4 0
Eucharis, per dozen ...	3 0-6 0	— red, per dozen ...	1 0-2 0
Gardenias, 12 blooms ...	3 0-6 0	— Safrano, dozen ...	1 0-2 0
Heliotropes, 12 spr. ...	0 6-1 0	Stephanotis, 12 spr. ...	4 0-6 0
Hyacinths, Roman, 12 sprays ...	1 0-1 6	— Tuberoses, 12 blms. ...	0 6-1 0
Lapageria, 12 blooms ...	1 0-2 0	Violets, 12 bunches ...	1 0-1 6
— 3 0-6 0		— dark, Fr., bunch ...	1 6-2 0
Marguerites, 12 bun. ...	3 0-4 0	— Parme, Fr., bun. ...	3 6-4 0
Mignonette, 12 bun. ...	2 0-4 0		

SEEDS.

LONDON: Nov. 21.—Messrs. John Shaw & Sons, seed merchants, of 37, Mark Lane, E.C., report to-day's market without any striking feature. Clover seeds generally are quiet, but firm. The present lull coming after so much excitement and activity is regarded as quite healthy. Some small orders still come to hand for Winter Vetches. Blue Peas are in good demand at full prices: choice samples are inquired for. In Haricot Beans the tendency continues upwards. There is no change in either Mustard or Rape seed. Bird seeds are steady. Feeding Linseed hardens in value.

CORN.

Averages.—Official statement showing the average price of British corn, imperial measure, in the week ended November 17:—Wheat, 31s. 11d.; Barley, 27s. 10d.; Oats, 16s. 9d. For the corresponding week in 1887:—Wheat, 30s. 6d.; Barley, 29s. 6d.; Oats, 15s. 6d.

FRUIT AND VEGETABLES.

SPITALFIELDS: Nov. 21.—Good supplies of all kinds of farm and market garden produce. Dull trade, except for best samples, which realise fair prices. Quotations as under:—Pears, 2s. 6d. to 3s. 6d. per bushel; English Apples, 3s. to 5s. do.; do., 1s. 6d. to 2s. 6d. per half-bushel; American do., 10s. to 18s. per barrel; Cauliflowers, 3s. 6d. to 6s. 6d. per tally; Savoy, 2s. to 3s. 6d. do.; Cabbages, 1s. 3d. to 2s. 6d. do.; Brussels Sprouts, 1s. to 1s. 6d. per half-sieve; Greens, 1s. 6d. to 2s. 6d. per dozen bunches; Turnips, 1s. 9d. to 2s. do.; Carrots, 1s. 9d. to 2s. 6d. do.; Parsley, 2s. to 2s. 6d. do.; Horseradish, 10d. to 1s. 2d. per bundle; Celery, 4s. to 12s. per dozen bundles; Endive, 1s. 6d. to 2s. per dozen; Cos Lettuce, 4d. to 8d. per score of 22; English Onions, 4s. to 5s. per cwt.; Belgian Onions, 3s. to 3s. 6d. per bag; Dutch Onions, 3s. 6d. to 4s. 3d. do.; pickling Onions, 4s. to 5s. do.; Carrots, 20s. to 30s. per ton.

POTATOS.

BOROUGH AND SPITALFIELDS: Nov. 20.—With moderate supplies the trade has been firmer, and a fair weight of supply cleared off.—Regents, Scotch, 85s. to 105s.; English, 65s. to 100s.; Hebrons, 60s. to 110s.; Magnum Bonums, 65s. to 100s. per ton.

SPITALFIELDS: Nov. 21.—Quotations:—Beauty of Hebron, 80s. to 100s.; Magnums, 65s. to 70s.; Imperators, 80s. to 90s.; Champions, 65s. to 70s.; Regents, 60s. to 90s. per ton.

HAY.

Averages.—The following are the averages of the prices obtained at the various metropolitan markets during the past week:—Clover, prime, old, 120s. to 144s.; new, 80s. to 110s.; inferior, 45s. to 75s.; prime meadow hay, 120s. to 130s.; good new hay, 80s. to 100s.; inferior, 40s. to 70s.; old straw, 42s. to 48s.; new, 29s. to 44s. per load.

NOTICES TO CORRESPONDENTS.

CARPET-RED DESIGNS: *Carpet Bed*. We have no intention of illustrating the designs you mention. Send to Messrs. Cannell & Sons, Swanley, Kent, for a book of patterns.

CORRECTION.—In "Douglas Fir," p. 569, col. a, Cascade Range rainfall—instead of 2 feet 6 inches, read 64 inches.

CORRUGATED IRON TUBS: *H. H. S.* We have no experience of plant tubs made of this material, but should think it is about one of the worst to use for the purpose. Unless galvanised, they will not last long; and when galvanised, the roots coming in contact with the surface would be injured. Use slate sides, or Oak staves which have been charred on the inner side. The latter will last ten years if made of sound material well dried before being made-up.

NAMES OF FRUITS: *Constant Subscriber*. The large number you send is quite unreasonable. You should confine yourself to six specimens at one time. Apples: 1, Warner's King; 2, Colonel Vaughan; 3, Blenheim Orange; 12, Sam's Crab; 13, Dumelow's Seedling. Pears: 1, Beurré Hardy; 2, Williams' St. Christien; 3, Soldat d'Esperen; 4, Uvedale's St. Germain; 5, Colmar d'Aremberg;

6, Beurré Superfin; 7, Marie Louise d'Uccle.—*R. A. G.* Apple: 1, Hambledon Deux Ans; Pear: 2, Bishop's Thumb.—*E. Mann*. Blenheim Orange.—*A. M.* Pear, not known.—*P. C.* 1, Beurré Bosc; 2, Comte de Lamy; 3, Seckle, true.—*James Geddes*. 8, Louise Bonne of Jersey; 9, Seckle; 4, Brown Beurré; 24, not recognised; 25, Bergamot Cadette.—*L. Allegro*. Pear, rotten. Apple, King of the Pippins.—*H. P. Reynolds*. Apple, Tyler's Kernel.—*G. Massey*. Apple, Fearn's Pippin.

NAMES OF PLANTS: *C. W. K.* *Cypripedium barbatum* var., *Cypripedium Crossianum*, the greenish flower.—*Hull*. *Gongora galeata* (*Acropera Lodigiesii*).—*E. M.* *Pleione lagenaria*.—*G. Mantin*. It is impossible to name Orchids from the miserable withered scraps you send. The pollen masses are wanting in many cases. You must send fresh material together with leaves if you expect us to do anything.—*J. Needham, Rugby*. 1, *Diplacus glutinosus*; 2, *Helleborus fetidus*.—*P. D. W.* You did not affix numbers to your specimens, but the one with cones is the true *Thuia gigantea* (of which *T. Lobbi* is a garden synonym), and the other is *Libocedrus decurrens*. The name *Lobbi* should be abandoned, as it is altogether irregular and not recognised, save in nursery catalogues.—*W. H. C.* Apparently a starved *Clarkia*.

ORCHIDS FROM BRITISH HONDURAS: *J. F., Hull*. There are many Orchids indigenous to British Honduras which it would be interesting to get over for yourself and friends, but which would scarcely be profitable commercially. *Cattleya Bowringiana* is one of the best; *Lælia* (*Brassavola*) *Digbyana*, also pretty, if not free-flowering; *Brassavola venosa* is a fragrant species, and *Schomburgkias* and *Epidendrums* are plentiful, the latter in several species.

PRUNING EVERGREENS AND PRIVET: *L. C.* The best periods of the year for merely cutting back young growth of evergreens which do not flower in the spring, or from which flowers are not desired, are April and August—late if in the South and West, but early in the month in the North-midland and North. All pruning of evergreens should be done with the knife or *secateur*. Cutting back old limbs or heading back severely may be done in late autumn and winter—preferably the former. Prune Privet any time between March and the end of July, once, twice, or thrice, as may seem desirable. Ordinarily the second pruning is done in July, and, except in warm moist districts, a third will seldom be required. Old plants may be cut-in hard in late autumn; or, where a bare look in the plants is objected to during winter, the work may be done in March.

SCARLET EGG-FRUIT FIT TO EAT: *R. E. W.* Yes; when cooked it is as good to eat as the others.

VINES: *A. B. C.* Mildew attacking the decaying foliage. It is of no consequence if you burn the foliage and clean the canes. The Fuschias are affected with Scale; use Gishurst Compound. Your question should have been addressed to the Editor and not to the Publisher.

CATALOGUES RECEIVED.

HOWDEN & Co., Inverness Nurseries, Inverness, N.B. Trees and Shrubs, Herbaceous Plants, &c.

W. SMITH & SON, 18, Market Street, and 103, Hadden Street, Aberdeen, N.B.—Trees, Shrubs, Roses, &c.

DICKSONS (LIMITED), The Nurseries, Chester—Forest and Ornamental Trees, &c.

A. LIETZKE, 644, Rio de Janeiro, Brazil—Seeds of Palms.

THE THAMES BANK IRON CO., Upper Ground Street, London, S.E.—Trade List.

WOOD & INGRAM, The Nurseries, Huntingdon.—Nursery Stock.

KELWAY & SON, Langport, Somerset.—Wholesale List of Gladioli.

COMMUNICATIONS RECEIVED.—Thames Bank Iron Co.—*J. Donovan*.—*J. H. S.*—*R. H.*, Stockport.—*H. W. W.*—*G. Howes*.—*A. H.*—*R. C. W.*—*B.*—*W. Clark*.—*R. A. R.*—*W. W.*—*F. R. A.*—*D. H. E.*—*J. R. J.*—*F. A.*—*J. Scorrer*.—*J. J. W.*—*Theta*.—*W. Collett*.—*W. S.*—*Wild Rose*.—*N. E. B.*—*J. G. R.*—*H. H.* (we have no knowledge).—*S. W.*—*C. W. K.*—*W. H.*—*G. W.*—*A. B.*—*W. S.*—*Semi-double Cyclamens* are not uncommon).—*A. H.*—*F. W. B.*—*Sereno Watson*, Boston.—*V. L. Nancy*.—*O. T.*—*W. G. S.*—*H. C.*, Geneva.—*J. T. B.*—*M. D.*

DIED.—At Bedford, on the 17th inst, JANE MARIA, the dearly loved wife of Thomas LAXTON, aged fifty-four years.

BEESON'S MANURE.—The Best and Cheapest Fertiliser for all purposes. Write for Circular containing the Leading Gardeners' and Market Growers' Reports. Sold in Tins, 1s., 2s. 6d., 5s. 6d., and 10s. 6d. each, or 1 cwt. Bags, sealed, 13s. By all Seedsman, or apply direct to W. H. BEESON, Carbrook Bone Mills, Sheffield.

BONES!—BONES!!—BONES!!!

Crushed Bones in all sizes for Vine Borders, Lawns, Potting, Grass Lands, &c. Also BONE MEAL for Poultry Feeding. GARDEN GUANO, DISSOLVED BONES, Special MANURES and FERTILIZERS for all purposes.

For Prices, apply to

HARRISON, BARBER & CO. (Limited), GARRETT LANE, WANDSWORTH, SURREY, S.W.

SAVE HALF THE COST.

GARSIDE'S SILVER SAND,

BEDFORDSHIRE

Coarse and Fine,

Is admitted by the leading Nurserymen to be the Best Quality obtainable in the Trade. Consumers should Buy Direct from the Owner of these Celebrated and Extensive Pits, which contain a practically inexhaustible supply of Splendid Sand, and thus save half the ordinary cost. NO TRAVELLERS OR AGENTS.

Apply direct to the Proprietor for Samples and Price. Free on Rail or Canal. All Orders executed with the utmost promptness and under personal supervision. Special Railway Rates in force for all parts.

GEO. GARSIDE, JUN., F.R.H.S., Leighton Buzzard, Beds.

GISHURST COMPOUND, used by leading Gardeners since 1859 against Red Spider, Mildew, Thrips, Green Fly, and other Blight. 1 to 2 ounces to the gallon of soft-water; 4 to 16 ounces as winter dressing for Vines and Orchard-house Trees; and in lather from the cake against American Blight. Has outlived many preparations intended to supersede it. Boxes, 1s., 3s., and 10s. 6d.

GISHURSTINE keeps Boots dry and soft on wet ground. Boxes, 6d. and 1s., from the Trade. Wholesale from PRICE'S PATENT CANDLE COMPANY (Limited), London.

ORCHID BASKETS, RAFTS, BOATS, AND CYLINDERS, AND ALL GARDEN SUNDRIES.

SEND FOR A

PRICE LIST

from the Largest Manufacturer in the Trade,

H. C. SMYTH,

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DELAY NOT! TIME FLIES!

EVERY LADY IS DELIGHTED WITH

ROBINSON

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CLEAVER'S

QUALITY

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STYLE

SPECIALLY

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FABRICS

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They are the Best, Cheapest, and Latest Fashion,

As testified by the numerous repeat orders they induce.

A Post-card, Letter, or Telegram brings Patterns, Post-free. Please name any article specially required, also this paper.

ROBINSON & CLEAVER,
(By appointments to the Queen and the Empress of Germany),
BELFAST.

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Patronised by 16,000 of the Nobility, Gentry, and Clergy, for all kinds of

OUTDOOR WORK, CONSERVATORIES, Greenhouses, Frames, &c.

1 Cwt., and Oil Mixture, Free to all Stations. Liquid Non-Poisonous Paints for Inside of Conservatories, &c. Prices, Patterns, and Testimonials, Post-free.

LA BELLE SAUVAGE YARD, LUDGATE HILL, E.C. BACHELOE'S WALK, DUBLIN.—Discount for Cash.

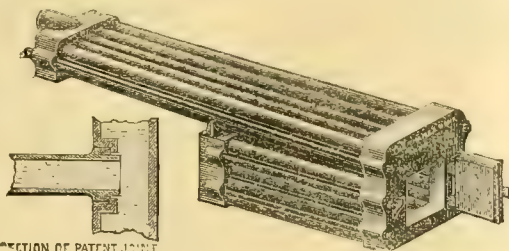
CONTRACTORS TO HER MAJESTY'S WAR DEPARTMENT.

THE THAMES BANK IRON COMPANY

(Telegraphic Address—"HOT-WATER, LONDON." Telephone—No. 4,763)

Have now pleasure in bringing to the notice of Horticulturists and Gardeners generally their
NEW PATENT (No. 9090, 1888) HORIZONTAL TUBULAR BOILER,
Which is, without doubt, the Best All-round Boiler in the Market.

It combines all the advantages of its class so well known, and by the improved method of forming the joints—viz., with India-rubber Washers, the old and too often ineffectual way of caulking the joints is entirely dispensed with.



SECTION OF PATENT JOINT

It can be erected in a few hours, and may be relied upon as a thoroughly sound and good Hot-water Generator. It has been carefully tested in every possible way, more especially with regard to power and durability, and the result has been highly satisfactory.

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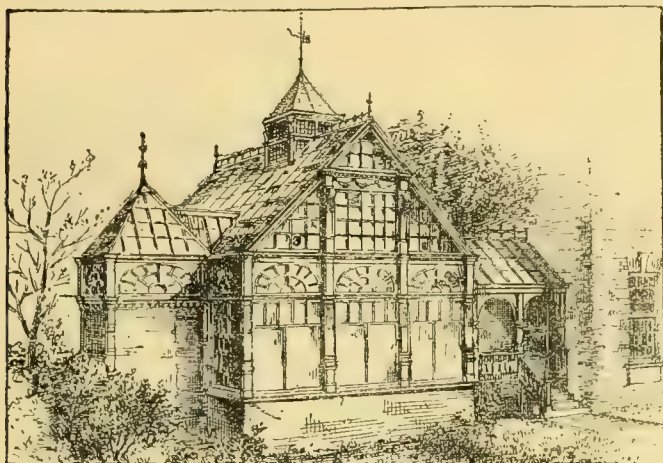
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PIPES, CONNECTIONS, VALVES, VENTILATING GEAR, &c.

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ILLUSTRATED CATALOGUE, 1s.

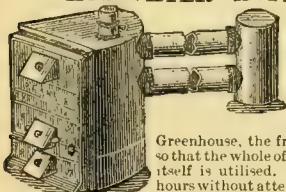
UPPER GROUND STREET, BLACKFRIARS, LONDON, S.E.



CROMPTON & FAWKES,
HORTICULTURAL BUILDERS,
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NEW BOOK of Photo-Lithographed Sketches of Winter Gardens, Ranges of Hothouses, Vineries, Architectural Conservatories, &c., of various Designs and Sizes, recently constructed, erected, fitted, and heated complete by us in different parts of the country; with particulars of the most successful Hot-water Heating Apparatus of the century. Post-free on application.

THE LOUGHBOROUGH GREENHOUSE HOT-WATER APPARATUS.



This is the simplest, cheapest, and most powerful apparatus made. It requires no brick setting, no stove-hole, and no hot-water filter for fixing. The Boiler stands in the Greenhouse, the front only being outside, so that the whole of the heat from the Boiler itself is utilised. It burns over twelve hours without attention, at a nominal cost. Price, as engraving, with Boiler, open feed syphon, 12ft. of 4-inch hot-water pipe, and patent joints, complete, £1 4s. Delivered free to any station. Discount for cash. Cost of apparatus COMPLETE for Greenhouses as below, delivered free, with pipes cut and fitted ready for fixing.

ft.	ft.	£ s. d.	ft.	ft.	£ s. d.	ft.	ft.	£ s. d.
10	6	4 14 0	15	9	5 10 8	25	12	6 16 8
12	8	5 1 0	20	10	6 0 0	40	16	12 12 4

Proportionate prices for other sizes. Estimates free. Illustrated List, with full particulars of these and every description of Fuel, Gas, and Oil Heating Stoves free.

DEANE & CO.,
HORTICULTURAL BUILDERS AND HOT-WATER ENGINEERS,
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GLASS BELLS, &c.
ROCHEZ-VANDER ELST,
Charleroi, Belgium.

Agents: H. PUCKERT AND CO., 110, Cannon St., London, E.C.

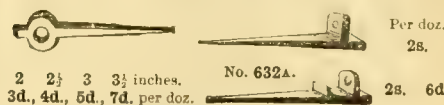
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ANTHRACITE.
Best quality. Horticultural and general purposes.
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Straining Bolt and Holdfast.—No. 635.
As illustrated above, price 3s. and 4s. per dozen.
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Per doz. 2s.
2 2½ 3 3½ inches. No. 632A. 2s. 6d.
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Best Galvanised Wire, 1/3, 1/6, 1/9 per 100 yards.
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8s. 6d. per 100 feet 15 oz. 12x10, 18x12, 18x14, 24x14, 14x12, 20x12, 18x16, 24x16, 12s. per 100 feet 21 oz. 16x12, 16x14, 20x16, 24x18, &c. Putty, 6s. 6d. per cwt.; White Lead, genuine, 21s.; Our Speciality, 17s. 6d. per cwt.; Paints ground in Oil, Stone Ochre, 20s.; Oxford Ochre, 24s.; Green, 16s.; Black, 16s. per cwt.; Varnish, from 5s. 6d. per gal.—Full Price List on application to **THE CHEAP WOOD COMPANY,** 95, Bishopsgate Street Within, London, E.C.

HEATING APPARATUS.—Catalogues free. Improved EXPANSION JOINTS, half a million sold. Write to Inventor, J. ATTWOOD, Stourbridge.

STOVES.

Terra-Cotta! Portable! For Coal!
ROBERTS'S PATENT (IMPROVED),
for Greenhouses, Bedrooms, &c.
GREENHOUSES Heated 24 Hours for about One Penny, without attention. **ROBERTS'S PATENT TERRA-COTTA STOVES** for COAL give pure and ample heat with common coal, or coal and coke. For Greenhouses, Bedrooms, &c. Pamphlets, Drawings, and authenticated Testimonials sent. See in use at Patentee's,
THOMAS ROBERTS,
112, Victoria Street, Westminster, S.W.

HORTICULTURAL GLASS.

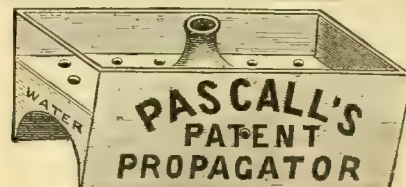
A large quantity of all descriptions and sizes in stock, at the lowest possible prices.
NICHOLLS & CLARKE,
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WATERPROOF TREE LABELS,
and all qualities of
DIRECTION LABELS,
for Nurserymen, Seed-men, and Florists.

Samples and PRICE LIST on application.

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LABEL MANUFACTURERS, BOSTON, LINCOLNSHIRE.

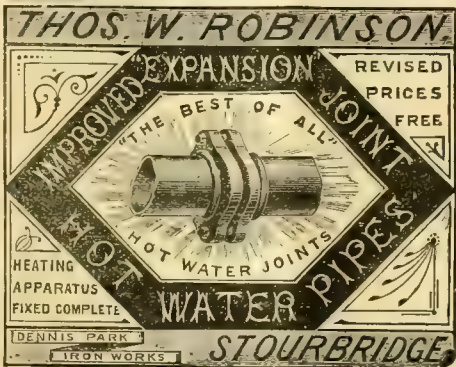


Made in superior earthenware, 14 inches long, 6½ inches deep, and 3 inches wide. Inside, 2½ inches from the top, is a perforated movable false bottom, upon which the soil for cuttings or seeds is placed, the lower half being filled with water, which is replenished when required through the funnel. It fits evenly on 4-inch hot-water pipes, and will be found a simple and effectual means of utilising them for propagating purposes. With the false bottom removed it forms an effective vaporiser. Price 3s. each. Six carriage and package free to any station in Great Britain on receipt of P.O. for £1 1s. Sole makers and patentees, **T. PASCALL AND SON,** South Norwood Pottery, Surrey, S.E. **GARDEN FOTS.**—Ours are unsurpassed by any in the Trade. £2 orders carriage paid to any goods station within 100 miles of London. Send for Price List. Orchid Pottery of every description. Samples carriage free. **THOS. PASCALL & SONS,** South Norwood Pottery, Surrey, S.E.

SPEARMAN'S SERGES.—THE BEST IN THE WORLD.—Pure INDIGO DYE, ROYAL NAVY BLUE, WOODED BLACK. Also in all other colours and FANCY WEAVINGS. Low quotations. No draper or tailor sells SPEARMAN'S renowned Serges; they can only be obtained direct from SPEARMAN, SPEARMAN, PLYMOUTH. No material manufactured is so useful for Ladies' Autumn and Winter Wear or Gentlemen's Suits. Send for patterns, and select at home for yourselves. Parcels carriage paid in Great Britain and Ireland. Goods packed for export at lowest freights.

RUSSIA MATS—RAFFIA.—NEW ARCHANGEL MATS and all kinds of ST. PETERSBURG MATS, RAFFIA FIBRE, TOBACCO PAPER and RAG, BAMBOO CANES, &c., supplied at Lower Prices than any other Firm. The Trade only supplied. **MAKENDAZ AND FISHER,** James Street, Covent Garden, W.C.

To Nurserymen, Seed Merchants, and Florists.
J. BLACKBURN AND SONS are offering Archangel Mats lower than any other house in the trade; also Petersburg Mats and Mat Bags, Raffia Fibre, Tobacco Paper, and Shading. Prices from 1s. 6d. to 1s. 10d. per 100.



THE GARDENERS' CHRONICLE

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Head Line charged as two.

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9 " ..	0 5 6	20 " ..	0 11 0
10 " ..	0 6 0	21 " ..	0 11 6
11 " ..	0 6 6	22 " ..	0 12 0
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AND SIXPENCE FOR EVERY ADDITIONAL LINE.

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Page, £3; Half Page, £1 10s.; Column, £3.

Gardeners and others Wanting Situations.

28 words, including name and address, 1s. 6d.,
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of a line.

THESE ADVERTISEMENTS MUST BE PREPAID.

This scale does not apply to announcements of Vacant
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IMPORTANT NOTICE.—Advertisers are cautioned
against having Letters addressed to Initials at Post-offices, as
all Letters so addressed are opened by the authorities and
returned to the sender.

BIRTHS, DEATHS and MARRIAGES, 5s. each insertion.

Advertisements for the current week must reach the Office by
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All Subscriptions Payable in Advance.

THE UNITED KINGDOM: 12 Months, 15s.; 6 Months,
7s. 6d.; 3 Months, 3s. 6d.

FOREIGN (excepting India and China): including Postage,
17s. 6d. for 12 Months; India and China 19s. 6d.
Post office Orders to be made payable at the Post Office,
42, DRURY LANE, W.C., to W. RICHARDS.

PUBLISHING OFFICE and OFFICE for ADVERTISEMENTS.
41, Wellington Street, Strand, London, W.C.

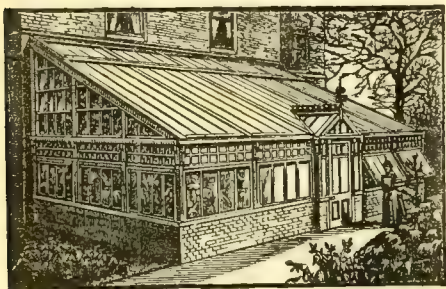
GLASS	SHEET	SIZES	
		Inches.	Feet.
21-oz.	14x12	20x15	24x18
	16x12	20x16	24x18
	18x12	22x16	24x18
	20x12	24x16	24x18
	20x12	24x16	24x18
	20x12	24x16	24x18
	20x12	24x16	24x18
	20x12	24x16	24x18

21-oz. Foreign of the above sizes, in 100 and 200 feet boxes,
3rds and 4ths qualities, always kept in stock.

A large stock of similar current sizes of 15-oz. glass in
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English Glass, cut to buyer's sizes, at lowest prices, including
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GEORGE FARMLOE & SONS,
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Stock List and Prices on application. Price List of Colours,
Varnishes, Designs of Stained & Leaded Glass. Quote Chronicle.

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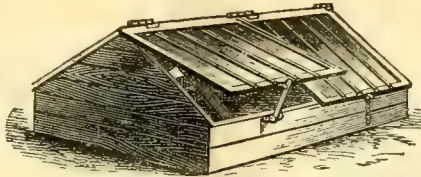
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Fixed in any part of the Kingdom
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Numerous
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Catalogue
Free.

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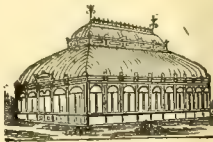


PORTABLE PLANT FRAMES.

The above are without exception the most useful kind of
Frame for Plant Growing, and every one with a garden should
possess one. The sashes turn right over one on to the other, and
the boxes are put together with wedges, and can be taken apart
in a few minutes. Sizes and prices, carriage paid to any station
in England, ready glazed and painted:—
6 feet long, 4 feet wide, packing cases free £2 15 0
12 feet long, 4 feet wide, " " " 4 15 0
6 feet long, 5 feet wide, " " " 3 15 0
12 feet long, 5 feet wide, " " " 6 10 0
The glass is nailed and puttied in.

B. HALLIDAY & CO.,

Hothouse Builders and Engineers,
ROYAL HORTICULTURAL WORKS, MIDDLETON,
MANCHESTER.
London Agent: Mr. H. SKELTON, Seedsman, &c.,
2, Holloway Road, N.



JAS. BOYD & SONS,

HORTICULTURAL BUILDERS
and HEATING ENGINEERS,
PAISLEY.

HORTICULTURAL STRUCTURES

of every description,
in either Wood or Iron,
or both combined.



Wooden Chapels,
Shooting Lodges,
Tennis Courts,
Cottages, &c.

Hot-water Apparatus
for warming
Buildings of every
description.
Illustrated Circulars
Post-free.

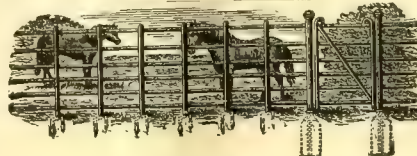
Complete Catalogue, 3s.

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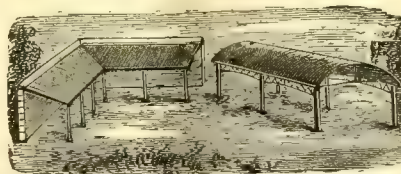
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IRON FENCING, HURDLES, GATES, &c.



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Special Estimates given for Large Contracts in Fencing,
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advice given as to the best and most economical Fences to put
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Illustrated Catalogues Free by Post.

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MADE WITH BOILING MILK.

POWELL'S BALSAM OF ANISEED, THE SUREST COUGH MEDICINE.

TRY IT.

Persons who suffer from a CHRONIC INFLAMMATORY
CONDITION of the mucous membrane, periodically assuming
an acute aspect, in the form of COUGH, CATARRH, BRON-
CHITIS, and ASTHMA, will find POWELL'S BALSAM of
ANISEED a friend indeed. Sold by Chemists throughout the
World, 1s. 1½d. and 2s. 3d. per bottle. See Trade-Mark—LION,
NET, and MOUSE. Established 70 years.

Accidents all the Year Round.

Provide against them by Policy of the

RAILWAY PASSENGERS' ASSURANCE

COMPANY, 64, Cornhill, London, E.C.

Hon. EVELYN ASHLEY, Chairman.

Annual Income, £248,000.

Invested Capital and Reserve Fund, £275,000.

Compensation Paid for 126,000 Accidents, £2,500,000.

Moderate premiums—Favourable conditions—new concessions.

Prompt and Liberal Settlement of Claims.

West End Office:—8, Grand Hotel Buildings, W.C.

Head Office:—64, Cornhill, London, E.C.

WILLIAM J. VIAN, Secretary.

"Destined to become the fruit garden of the
Universe."—Morning Post.

THE AUSTRALIAN IRRIGATION

COLONIES, Illustrated; 3s. 6d., all Booksellers.
CHAFFEY BROS. (Ltd.), 35, Queen Victoria Street, E.C.
Pamphlet free.



OUR NOTE BOOK, 112 Pages, 6d. post-free.

A Collection of Valuable Papers by experienced Representa-
tive Growers on how to grow successfully Grapes, Nectarines,
Peaches, Tomatoes, Mushrooms, and most Vegetables; also compre-
hensive and latest information on the culture of Orchids, Roses,
Begonias, Ferns, Chrysanthemums, Carnations, Auriculas, Pan-
sies, &c., by Baines, Douglas, O'Brien, Wright, Rivers, Hudson,
Baillie, Molyneux, Richards, Orchard, Birkenhead, Castle, Dean,
Laing, &c. Appendix Articles on Fruits and Vegetables; their
value, and how to Preserve and Cook them. Also a Valuable
Calendar on how to be successful in the Management of Bees,
giving directions for each month. Price 6d., post-free.

W. WOOD AND SON, Wood Green, LONDON, N.

Now Ready, the Seventh Edition, revised and enlarged,
price 3s. 6d., post-free.

CULTURAL DIRECTIONS for the ROSE,
by JOHN CRANSTON, King's Acre Nurseries, near Here-
ford, containing every information relative to Rose Culture;
a choice selection of all the finest Roses, fully described; a select
List of sorts adapted to various circumstances, situations, soils,
and climates; a complete Catalogue of varieties of Roses intro-
duced up to the present time; and a Calendar of Operations to
be performed during each month throughout the year.

Estate Sales.

The best County medium for Advertising Sales of
Estates is

THE WORCESTER HERALD, the largest
and leading County paper. Extensive circulation among
the upper and middle classes in Worcestershire and adjoining
counties. Advertisers would do well to forward for reference
and distribution, plans and particulars of Estates, Catalogues
of Machinery, Furniture, Books, and other property advertised
in the columns of the Worcester Herald. Specimen copies sent
free. Published Friday for Saturday, price 2d.
Offices, 72, High Street, Worcester.

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THE WORCESTER HERALD is the most
effective organ for giving publicity to announcements of
this class. It is the largest and leading Agricultural paper in
the county, and circulates most extensively among Agricul-
turalists in and around Worcestershire. Specimen copies free.
Published Friday for Saturday, price 2d.
Offices, 72, High Street, Worcester.

Farms to be Let.

LAND AGENTS, ESTATE MANAGERS, and all having Farms
to Let, would do well to advertise in

THE WORCESTER HERALD, the Largest
and leading County Paper. Specially adapted for
bringing such notices before Tenant Farmers. Large Circula-
tion, moderate charge. Specimen free. Price 2d. Published
Friday for Saturday.
Offices, 72, High Street, Worcester.

GARDENING APPOINTMENTS.

Mr. J. HARRISON, late Head Gardener at Watlington Park, Oxon, has been appointed as Head Gardener to Sir A. PAYTON, Bart, Swifts House, Bicester, Oxon.

Mr. C. DAWSON, lately Foreman at Ewenny Priory, Bridgford, has been engaged as Gardener to Mrs. SAUNDERS DAVIES, Kilwendy Park, Boncath, Pembrokeshire, South Wales.

Mr. W. A. COOK has been appointed Gardener to Major HENEGGE, Compton Bassett, Calne, Wilts, in place of Mr. ALLEN, who retires after forty-nine years' service.

WANTED, a PARTNER (with capital), active or otherwise, in a well-established Nursery and Florist's Business.—R. M., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

WANTED a HEAD WORKING GARDENER, for a Gentleman's establishment, where the chief part of the produce is sold.—Must be thoroughly competent in all branches, including Packing Fruit and Flowers, and Making Bouquets, Wreaths, &c., and with special knowledge of Growing Chrysanthemums, Roses, Violets, and Stove Plants. Must be a married man, and between 30 and 40 years of age.—Address, enclosing photograph, to J. P., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

WANTED, by a Lady, a strong, active, single Man, as GARDENER, who understands Vines, Cucumbers, &c. Wages, at first, 18s. per week.—M. P. Taylor's, Chigwell, Essex.

WANTED, a competent PROPAGATOR. One who is thoroughly experienced in Roses, Clematis, &c.—Apply, stating full particulars, to H. ENGLISH, Clevedon Nurseries, Clevedon.

WANTED, a few really first-class CUCUMBER GROWERS. None but A1 men need apply.—State particulars of experience, wages required, and send copies of testimonials to F. ROBINSON, The Nursery, Ponder's End.

WANTED, for the Counter, a HEAD SHOPMAN, to take entire charge of Retail Work in Bulbs, Vegetable and Flower Seeds. The latter work to be personal. No one need apply unless able to produce first-class references, and have at least 12 years' experience.—WM. BAYLOR HARTLAND, Seedsman, 24, Patrick Street, Cork.

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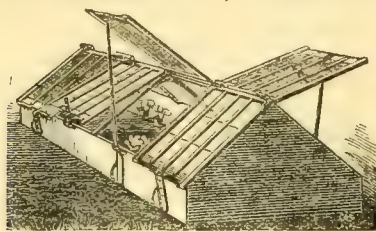
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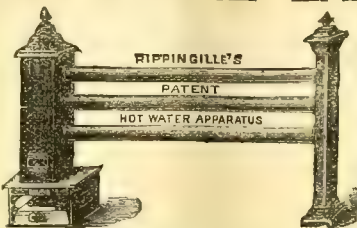
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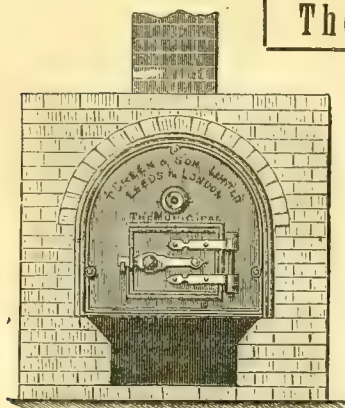
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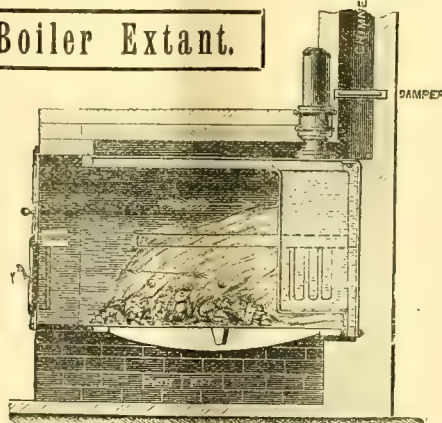
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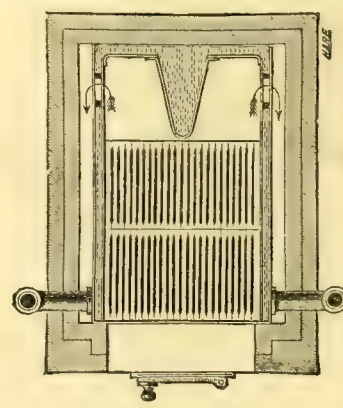
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DAFFODILS a SPECIALTY.—Bart's Daffodils should now be potted for Indoor Flowering, or planted out in beds, or naturalized in Orchards, Meadows, and Woods. Illustrated CATALOGUE free on application.
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"SIR WATKIN" is the best NARCISS. Price and all particulars post-free.
DICKSONS (Limited), The Nurseries, CHESTER.

SEED TRADE, 1888-9.—Before placing your Orders please write for our SPECIAL PRICES, which, owing to crops having proved better than expected, are exceedingly low.
HOWCROFT AND WATKINS, Seed Merchants, Covent Garden, London, W.C.

ABIES AMABILIS, True, and other North American Seeds and Plants collected personally by WILLIAM STEWART, 28, Esplanade, Greenock, Scotland. Price LIST and Samples on application.

GIANT ASPARAGUS.—Grand clumps for Forcing; 2s. dozen, 15s. 100, £7 per 1000.
WILL TAYLER, Osborn Nursery, Hampton, Middlesex.

STRAWBERRY PLANTS, in small pots. Splendid stuff of all best kinds, and true to name. Price List on application.
FRANCIS R. KINGHORN, Nurseryman, Richmond, Surrey.

CHRYSANTHEMUM CULTURE.—Standen's Manure, admitted by growers to be unrivalled for this purpose; in tins, 1s., 2s. 6d., 5s. 6d., and 10s. 6d. each. Sold by all Seedsmen.

SULPHIDE OF POTASSIUM (Harris).—A certain cure for Mildew on Plants, Red Spider, Aphid, &c. Enough to make 32 gallons of solution, free for 1s. 3d. The only kind to use is "Harris's specially prepared Sulphide of Potassium." Sole Manufacturers:—PHILIP HARRIS AND CO. (Limited), 9, Bull Ring, Birmingham.

THOMSON'S IMPROVED VINE and PLANT MANURE.—This valuable Manure is made only by us. Every bag and tin has our name on it. To be had of all Nursery and Seedsmen, and direct from us. 1 cwt. and over carriage paid. London Agent—Mr. GEORGE, 10, Victoria Road, Putney.
WM. THOMSON AND SONS, Clovenfords, Galashiels, N.B.

SALES BY AUCTION.

Bulbs from Holland.

Sales every MONDAY, WEDNESDAY, and SATURDAY, in Large and Small Lots, to suit all Buyers.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., every MONDAY, WEDNESDAY, and SATURDAY, at half-past 12 o'clock precisely each day, first-class consignments of HYACINTHS, TULIPS, CROCUSES, and other BULBS, arriving daily from well-known Farms in Holland.

On view morning of Sale, and Catalogues had.

Monday Next.—(Sale No. 7813.)

BULBS from Holland.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on MONDAY NEXT, December 3, at half-past 12 o'clock precisely, 600 lots of first-class BULBS, just received from Holland, comprising Hyacinths, Tulips, Crocuses, Narcissus, Snowdrops, Anemones, Lily of the Valley in Crowns and Clumps, *Spirea japonica*, &c.

On view morning of Sale, and Catalogues had.

Wednesday and Saturday Next.

Choice Dwarf-trained and Pyramid FRUIT TREES, several hundred first-class Standard and Dwarf ROSES, HARDY ORNAMENTAL SHRUBS and CONIFERS; BORDER PLANTS in great variety; LILY of the VALLEY in Crowns and Clumps; SPIRÆA JAPONICA; several hundred lots of Dutch BULBS, just arrived in fine condition, consisting of Hyacinths, Tulips, Narcissus, Crocuses, &c., Home-grown Lilliums.

MR. J. C. STEVENS will SELL the above by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY and SATURDAY NEXT, December 5 and 6, at half-past 12 o'clock precisely each day.

On view morning of Sale, and Catalogues had.

Thursday Next.—(Sale No. 7816.)

5000 Grand Bulbs of LILUM AURATUM, 2000 L. LONGIFLORUM, 1800 L. KRAMERI, L. SPECIOSUM ROSEUM, just received from Japan in the finest possible condition; also a fine lot of Home-grown LILIES, hardy Japanese IRIS, 1500 extra strong clumps of HELLEBORUS NIGER, First-class Double South African TUBEROSES, AMARYLLIS SPECIES, and other South African roots just to hand, &c.

MR. J. C. STEVENS will SELL the above by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, December 6, at half-past 12 o'clock precisely.

On view morning of Sale, and Catalogues had.

Special Sale of Orchids in Flower and Bud.

MR. J. C. STEVENS begs to announce that his NEXT SPECIAL SALE OF ORCHIDS in FLOWER and BUD, will take place at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, December 13, at half-past 12 o'clock precisely, and he will be glad if Gentlemen desirous of Entering Plants for this Sale, will SEND LIST NOT LATER THAN THURSDAY NEXT.

Cheap Bulb Sales.

MESSRS. SMAL and CO. will SELL by AUCTION, at 123, Fenchurch Street, City, E.C., every MONDAY, WEDNESDAY, and FRIDAY, at 12 o'clock each day, large consignments of LILUM AURATUM, LILY of the VALLEY, DUTCH BULBS, &c., specially lotted to suit all buyers.

Horticultural Auction Rooms, 123, Fenchurch Street, E.C.

Dutch Bulbs.

MONDAY, THURSDAY, and SATURDAY NEXT. Great Unreserved Sales.

MESSRS. PROTHEROE and MORRIS will SELL by AUCTION, at the Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on MONDAY, THURSDAY, and SATURDAY NEXT, December 3, 6, and 8, at half-past 11 o'clock precisely each day, extensive quantities of first-class HYACINTHS, TULIPS, CROCUS, NARCISSUS, and other BULBS, from Holland, in lots to suit Large and Small Buyers.

Tuesday Next, December 4.—Sale by Sample.

IMPORTANT to the TRADE and PRIVATE BUYERS.

MESSRS. PROTHEROE and MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on TUESDAY NEXT, December 4, at half-past 12 o'clock precisely, large quantities of NURSERY STOCK by SAMPLE, including the following:—

10,000 Dwarf Roses	7,000 Azalea mollis
5,000 Asparagus	3,000 Fancies
1,000 Senkale	200 Eucalyptus
500 Hardy Primulas	600 Dracena Veitchii
20,000 Scotch Fir	2,000 Dwarf-trained and
300,000 Quick	Standard Fruit Trees
3,000 Laurel	Thousands of Christmas Roses
500 Retinospora plumosa.	Quantity of Silver Ives
500 Cupressus Lawsoni	Thousands of Strawberry
150 Ficus elastica	Plants

Wednesday Next.

8000 LILUM AURATUM, 1000 LILUM LANCEFOLIUM RUBRUM and ALBUM, and 400 LILUM LONGIFLORUM, just received from Japan, in splendid condition; 3000 Berlin Crowns LILY of the VALLEY, BARR'S DAFFODILS, English-grown LILIES, Japanese IRIS, 500 AZALEAS and CAMELLIAS from Belgium, STOVE and GREENHOUSE PLANTS in variety, 1000 SPIRÆA JAPONICA, various hardy BULBS, Standard and Dwarf ROSES from English Nurseries, &c.

MESSRS. PROTHEROE and MORRIS will SELL the above by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on WEDNESDAY NEXT, December 5, at half-past 12 o'clock precisely.

On view morning of Sale, and Catalogues had.

Beckenham.—The Gardens, Kelsey Manor.

About a mile from Beckenham Junction Station. CLEARANCE SALE OF STOVE and GREENHOUSE PLANTS, HANDSOME DRESDEN CHINA, FOUNTAIN, HORSES, CARRIAGES, and Effects.

MESSRS. PROTHEROE and MORRIS are favoured with instructions from C. A. R. Hoare, Esq., (who is giving up the Gardens) to SELL by AUCTION, on the Premises as above, on THURSDAY and FRIDAY, December 6 and 7, at 12 o'clock precisely each day, the whole of the choice Collection of STOVE and GREENHOUSE PLANTS, including very fine specimen Camellias and Azaleas, large PALMS, about 200 ORCHIDS, specimen Eucharis in splendid condition, 2 powerful CARTHORSES, Brown COB, several Sets of HARNESS, Convertible WAGGONETTE, CARRIAGES, 2 CARTS, Market WAGGON, large Iron Field ROLLER, 4 MOWING MACHINES, a handsome Self-acting 3-tier Dresden China FOUNTAIN, standing 6 feet high, a large quantity of OAK PANNELLING, several 2-light BOXES and numerous other effects.

May be viewed on presentation of Catalogue the day prior to the Sale. Catalogues may be had of Mr. GOLDSMITH, the Head Gardener, at the Gardens; and of the Auctioneers, Estate Agents and Valuers, 67 and 68, Cheapside, E.C.

Friday, December 7.

SELECTED DUPLICATE PLANTS from the well-known collection of R. J. Measures, Esq., consisting almost entirely of rare and valuable hybrid CYPRIPEDIUMS.

MESSRS. PROTHEROE and MORRIS are favoured with instructions from R. J. Measures, Esq., to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY, December 7, 1888, at half-past 12 o'clock precisely, selected DUPLICATE PLANTS from his well known Collection, including the following:—

Cypripedium Measuresianum	Cypripedium expansum
.. apiculatum	.. melanthophyllum
.. Thibautianum	.. Fraseri
.. Germinyanum	.. leucorrhodum
.. orphanum	.. Walacartianum
.. reticulatum	.. Hartwegianum
.. Carrieri	.. plumeum
.. Williamsii	.. regale.
.. Turpe	

On view morning of Sale, and Catalogues had.

Friday Next.

IMPORTED and ESTABLISHED ORCHIDS.

MESSRS. PROTHEROE and MORRIS will include in their SALE by AUCTION, on FRIDAY NEXT, December 7, imported ODONTOGLOSSUM CRISPUM (ALEXANDRE) of the best type, and a quantity of Established unflowered Plants, O. GRANDE, O. VEXILLARIUM, CATLEYA AUREA, &c., from Messrs. Shuttlevorth, Carter & Co., and also a selection of well grown ESTABLISHED ORCHIDS.

On view morning of Sale, and Catalogues had.

Barnet, N.

In the High Court of Justice, Chancery Division, Cornwell v. Cornwell.

SIX DAYS' CLEARANCE SALE of the whole of the extensive and well-grown NURSERY STOCK and GREENHOUSE PLANTS.

MESSRS. PROTHEROE and MORRIS (the Messrs. appointed by Mr. Justice Stirling, the Judge to whose Court the cause is attached) will SELL by AUCTION, on the Premises, the Hadley Nursery, High Street Barnet, and the Common Nursery, Barnet Common, within a short distance of the High Barnet Railway Station, on MONDAY, December 10, and five following days, at 12 o'clock punctually each day, the whole of the unusually well-grown NURSERY STOCK and GREENHOUSE PLANTS, including the following:—

20,000 Conifers, of sorts	10,000 Standard Roses
500 Specimen Conifers	10,000 Dwarf Roses
3,500 Aucubas	1,000 Standard Roses, Gloire de Dijon
3,000 Laurels	10,000 Privet
2,000 Green and Variegated Hollies	3,000 Fruit Trees
6,000 Ivies	6,000 Gooseberries and Currants
5,000 Standard Ornamental Trees	6,000 Fruit Stocks
1,500 Euonymus	2,500 Tea Roses, in pots
6,000 Fruit Trees	250 Camellias and Azaleas

and large quantities of other Stock.

Grey MARE, 4 CARTS, Spring VAN, HARNESS, UTENSILS in Trade, &c.

May be viewed one week prior to the Sale. Catalogues may be obtained at the Home Nursery, High Street, Barnet; of Messrs. HOUGHTON and BYFIELD, Solicitors, 55, Gracechurch Street, E.C.; and of Messrs. MONTAGU-SMITH and BAKER, Solicitors, 10, Gray's Inn Square, W.C., and Hatfield; and of the Auctioneers and Valuers, 67 and 68, Cheapside, E.C., and Leytonstone.

Orchids in Flower.—Friday, December 21.

MESSRS. PROTHEROE and MORRIS desire to announce that their NEXT SPECIAL SALE OF ORCHIDS in FLOWER will take place as above, for which they will be glad to RECEIVE NOTICE OF ENTRIES as early as possible.

Under Distraint for Rent.

MR. CHARLES WILSON will SELL by AUCTION, on the Premises, Dartmouth Park Nursery, York Rise, Kentish Town, N.W., on TUESDAY, December 4, at 11 o'clock sharp, the Stock of a Nurseryman and Florist, consisting of a large variety of Flowering and other PLANTS, BULBS, SHRUBS and TREES, MANURE, the GREENHOUSE and HEATING APPARATUS, and other Effects of the Nursery (established 35 years).

On view Saturday and Monday. Catalogues on the Premises, and of the Auctioneer—

Offices:—122, Kentish Town Road, N.W.

To Market Gardeners, Florists, Nurserymen, &c. HAMPTON-ON-THAMES.

FOR SALE, choice FREEHOLD LAND, in Acre Plots, suitable for above. Rich Garden Soil with gravel and sand sub-soil. The land is considered by the Trade the finest near London for Grapes and all other Market Products.

Apply, SECRETARY, Estates Investment and Villa Farm Company, Estate Office, Tangle Park, Hampton-on-Thames.

South of England.

LARGE GARDEN, 20 Acres, with Twenty Greenhouses and Vineries. £7000 has been spent on the property. Seven years' lease. Two Cottages inclusive. £150 a year. ELDRIDGE, Portsmouth.

Fifty Nurseries, Market Gardens, Florist and Seed BUSINESSES to be DISPOSED OF.

MESSRS. PROTHEROE and MORRIS' HORTICULTURAL REGISTER contains full particulars of the above, and can be obtained, gratis, at 67 and 68, Cheapside, London, E.C.

ORCHIDS.

THE LIVERPOOL HORTICULTURAL CO.

(JOHN COWAN), Limited,

Have just received a fine importation of the following

ORCHIDS:—

MAXILLARIA SANDERIANA, ODONTOGLOSSUM POLYXANTHUM, ONCIDIUM MACRANTHUM HASTIFERUM, &c., &c., &c.

Circular with full particulars on application.

THE VINEYARD AND NURSERIES, GARSTON, LIVERPOOL.

10,000 DAFFODILS, Double Yellows or

Telamonius plenus, for planting in newly planted Orchards, 17s. 6d. per 1000, cash for immediate reply.

WM. BAYLOR HARTLAND, F.R.H.S., Seedsman, Cork.

ADIANTUM CUNEATUM ELEGANS.—

This is one of the most useful Ferns for cutting (see recent report in *Gardeners' Chronicle*). Strong plants in 6-inch pots, 18s. per dozen, offered by the raiser.

CHAS. KERSHAW, Slead Syke Nurseries, Brighouse.

BROCCOLI SEED.—For Sale, a quantity of

Gordon's Celebrated NIDRIE LATE WHITE, true stock.—Price on application to P. GEMMELL, Jun., Market Gardens, The Crooks, Murrayfield, Edinburgh.

CHRYSANTHEMUMS.—600 best sorts, true

to name, strong Cuttings now ready, 1s. 6d. per doz., 10s. per 100. Many of the best Prizes and Silver Cups are taken by my customers. For price of new sorts, see Catalogue (2 stamps), of WM. ETHERINGTON, Chrysanthemum Grower, Swanscombe, Kent.

HALF-SPECIMEN STEPHANOTIS, free-

flowering variety, very fine stuff, 10 to 12 feet; also 25,000 AUCUBAS, all sizes. For particulars apply to G. SMITH, Dell Nursery, Rock Ferry, Cheshire.

To the Trade.

SEED POTATOS.

H. AND F. SHARPE'S Special Priced List of SEED POTATOS will be issued in a few days. In the meantime they will be pleased to give quotations for any varieties their friends may require.

Seed Growing Establishment, Wisbech.

FOREST TREES, grown in the celebrated Windlestrawlee Nurseries (formerly The Lawson Nursery Company, and recently acquired by us).

SEEDLING and TRANSPLANTED FOREST TREES of all kinds, fine well-rooted and well-grown stuff. Samples and prices on application.

TREES for AVENUES, VILLAS, and PARK decoration, consisting of Poplars, Beech, Birch, Sycamore, Ash, Limes, Elms, &c., all selected, grown singly, and have been regularly transplanted, and can be strongly recommended as being of first-class quality.

Also a splendid stock of EVERGREEN and FLOWERING SHRUBS, RHODODENDRONS, ROSES, FRUIT TREES, &c.

Special quotations given, and Catalogues sent on application. All Orders for Plants or Seeds in England carriage paid.

Trade LISTS on application.

IRELAND and THOMSON, Nurserymen, Edinburgh.

TREES and SHRUBS suitable for Towns and

Smoky Districts. CATALOGUE free on application.—RICHARD SMITH and CO., Nurserymen and Seed Merchants, Worcester.

TO BE SOLD, cheap, about 11,000 large Stools

of RHUBARB, the remaining stock of the late Mr. Martin. May be seen and particular from T. YOUNG, New Villas, Flodden Road, Camberwell, S.E.

SPECIAL OFFER OF FERNS.—Pteris

tremula, P. cretica, P. cretica cristata, P. serrulata cristata compacta, in thumbs, fit for immediate potting. Also the same varieties, good stuff, in 48's, to offer in quantity.

Prices per 100 or 1000 on application.

R. PENGELLY, Dyson's Lane, Upper Edmonton.

Telegrams "Tucker," Nurseries, Faringdon.

COVERT for GAME.—3000 LAURELS, 3

to 4 feet, 15s. per 100; 3000 do., 4 to 5 feet, 20s. per 100. 5000 Evergreen PRIVET, 3 to 4 feet, 4s. per 100; 3000 do., 4 to 5 feet, 6s. per 100. The whole of the above are good bushy plants, well rooted, and would make good covert at once.

30,000 LAUREL, 3 to 4 feet, 30s. per 1000; 20,000 do., 4 to 5 feet, 40s. per 1000. Extra strong transplanted, and put on rail for Cash. CATALOGUES of General Nursery Stock free by post.

R. TUCKER, Nurseries, Faringdon, Berks.

LILY of the VALLEY Crowns, home-

grown, 4s. per 100; extra large, 1s. per dozen, 6s. per 100, post-free.—C. PERKINS, Budleigh Salterton, Devon.

FOREST TREES.—Alder, 2 to 2½ feet, 16s. per 1000; Ash, 1½ to 2 feet, 12s. per 1000; 2 to 3 feet, 16s. per 1000; 3 to 4 feet, 20s. per 1000; Beech, 1½ to 2 feet, 15s. per 1000; 2 to 2½ feet, 18s. per 1000; 2½ to 3½ feet, 22s. per 1000. Spanish Chestnut, 1½ to 2½ feet, 20s. per 1000; Bourtree, 2 feet, 25s. per 1000; Elm, 3 to 4 feet, 18s. per 1000; 4 to 5 feet, 25s. per 1000. English Elm, 4 to 5 feet, 40s. per 1000. Larch, 1½ to 2 feet, 16s. per 1000; 4 to 5 feet, 28s. per 1000. Scotch Fir, 1½ to 2 feet, 12s. per 1000; 2 to 2½ feet, 16s. per 1000; 3 feet, 20s. per 1000. Spruce Fir, 1 to 1½ feet, 10s. per 1000; 1½ to 2 feet, 12s. per 1000; 2 to 2½ feet, 16s. per 1000. Silver Fir, 10 to 15 inches, 18s. per 1000; 1 to 1½ foot, 20s. per 1000. Pinus austriaca, 1 to 1½ foot, 15s. per 1000; 1½ to 2 feet, 18s. per 1000. Sios or Blackthorn, 2 to 3 feet, 20s. per 1000; Sycamore, 1 to 1½ foot, 12s. per 1000; 2 to 2½ feet, 16s. per 1000; 6 to 7 feet, 6s. per 100.

GARLIES MITCHELL, Nurseryman, Stranraer.

W. GORDON, Immense stock of ORCHIDS; best value and cheapest house in the Trade.

The best cut of ORCHID PEAT in commerce; selected turves, 1 bushel, 2s., 3 bushel sack, 5s., carriage forward.

LILIES, Enormous Importations, Silver Bankian Medal, Silver Medal, National Chrysanthemum Society, 1888.

LILIUM AURATUM, Imported Bulbs, 6d., 9d., 1s., 1s. 6d. each; 35s., 45s., 70s., 90s. per 100. Home-grown bulbs, 9d., 1s., 1s. 6d., 2s. each. Special Trade quotation for quantities.

JAPANESE MAPLES, Silver Bankian Medal.

TREE PÆONIES, 7 First-class Certificates.

IRIS, most gorgeous, 4 First-class Certificates.

CATALOGUE of the above on application to

The Nurseries, Anyand Park Road, Twickenham.

ROBERT NEAL, The Nurseries, Trinity Road, Wandsworth, S.W., begs to call the attention of Gentlemen and others Planting, to his large and varied stock of **FOREST and ORNAMENTAL TREES**, also **FRUIT TREES, SHRUBS, ROSES, and CLIMBING PLANTS**, &c., which are in fine condition for transplanting, and being grown near London, are especially adapted for Town and Suburban Planting. Also extra-fine **ASPARAGUS, SEAKALE, and RHUBARB** for Forcing. All goods delivered free by own vans within a radius of 6 miles. **CATALOGUES** free on application, and a personal inspection of the stock solicited.

Cape Bulbs—Cape Bulbs.
THE CAPETOWN BOTANIC GARDENS request their Trade Correspondents to forward their Orders for this season's Bulbs as early as possible. Delivery in Jan. & Feb. —A. F. BAXTER, Sales Depart., Botanic Gardens, Capetown.

TREES and SHRUBS for Game-covers and Underwood. Intending planters should send for **CATALOGUE**, free on application.—**RICHARD SMITH and CO.**, Nurserymen and Seed Merchants, Worcester.

To those about to Plant.
A DESCRIPTIVE CATALOGUE, comprising fine Transplanted Fruit Trees, Roses, Hardy Climbers, Rhododendrons, Conifers, Ornamental and Flowering Trees and Shrubs, Forest Trees, &c., in large varieties and quantities, adapted to all soils and climates. Sent free on application to
GEO. JACKMAN and SON, Woking Nursery, Surrey.

"BEACONSFIELD" YELLOW PRIMROSE.
The large Irish Yellow variety. Trade price, 5s. per ounce. Retail, 6d. and 1s. per packet.
WM. BAYLOR HARTLAND, F.R.H.S., Seedsmen, Cork.

CREEPERS for WALLS.—By planting what is suitable, an ugly object may easily be made beautiful. Most being in pots, can be sent and put out at any time. Descriptive LIST and advice free.—**RICHARD SMITH and CO.**, Nurserymen and Seed Merchants, Worcester.

SPECIAL OFFER.—50,000 RHODODENDRONS, all the early varieties, White and Scarlet, well set with buds, fine plants for forcing. Low prices. Apply to
ISAAC MATTHEWS and SON, Milton Nurseries, Stoke-on-Trent.

PRIMULA OBCONICA.—The best market, or "all the year round" blooming plant in cultivation. Now is the time to sow. Seed, per packet, 6d. and 1s. Large Market Growers Packets, 2s. 6d.
WM. BAYLOR HARTLAND, F.R.H.S., Seedsmen, Cork.

50,000 MAIDENHAIR FERNS, with beautiful Fronds, 9 to 12 inches long, 6 for 1s., free; Cut Fronds, 4 dozen, 1s., free. **PEAT**, 2s. 6d. per sack. **TURNER**, Thatcho Heath, St. Helens.

IF YOU CANNOT GET FRUIT TREES TRUE TO NAME,
Write to **GEORGE BUNYARD and CO.**

IF YOU WANT ANY CHOICE SORTS that your Local Firms cannot Supply,
Write to **GEORGE BUNYARD and CO.**

FOR FRUIT TREES by the Dozen, Hundred, or Thousand,
Write to **GEORGE BUNYARD and CO.**

SEND INTO KENT, and get the **FINEST TREES**—No Starvings, No Blight—at
GEORGE BUNYARD and CO'S.

ILLUSTRATED CATALOGUE OF FRUIT TREES, 800 Kinds, Six Stamps.
SKELTON LIST—Names and Prices—also all Outdoor Stock, Gratis.
ROSE LIST, CONIFER and SHRUB LISTS, Free.
One Hundred Acres Nursery. Liberal terms.

GEORGE BUNYARD and CO.,
POMOLOGISTS and GENERAL NURSERYMEN,
MAIDSTONE, KENT.

CLEARANCE SALE (at sacrifice) of
PALMS, DRACENAS, &c.
LATANIA BORBONICA and **PHENIX RECLINATA**, 12 inches high, 4s. per dozen, 3s. per 100. Package and carriage free.
LATANIA BORBONICA, **SEAFORTHIA ELEGANS**, **CORYPHA AUSTRALIS**, and **PHENIX RECLINATA**, 20 to 24 inches high, 1s. 6d. each, 16s. per dozen; same kinds, 2 feet 6 to 3 feet high, 3s. to 5s. each.
Handsome PALMS, 4 feet high, 18s. each.
6 feet high, 40s. each.
Twelve assorted **PALMS and DRACENAS**, averaging, with pots, 24 inches high, in wood case, free, 18s.; six do., 10s. **KENTIAS**, 3s. to 21s. each.
DRACENAS, 24 inches to 5 feet high, 2s. to 40s. each.
Inspection invited.
GARDENER, Holly Lodge, Stamford Hill, N.

100,000 HARDY HEATHS.—The present is a most suitable time for planting these beautiful plants, which can be supplied as follows—
An assortment of 10 varieties, 16s. per 100.
" " 20 " 18s. "
" " 70 " 20s. "
" " 40 " 22s. "

If less than fifty plants are ordered, price 3s. per dozen. Special quotation per 1000, and Descriptive CATALOGUE may be had free on application to
JAMES SMITH and SONS, Darley Dale Nurseries, near Matlock.

CARNATION "GLOIRE DE NANCY."
We are sending out for the fourth season our true strain of this the grandest White Carnation in cultivation, quite hardy, and for pot culture for cut bloom it has no equal. Robust and free bloomer. £1 per 100, 11s. for 50, 6s. for 25, good rooted layers. We have a fine stock of **GARDENIAS**, the best sorts in cultivation, from 1s. to 40s. each, Cash with Order.
E. COLLINS and SONS, Cumberland Park Nursery, Willesden Junction.

VIOLETS.—**Marie Louise** and **Comte Brazza**.
Extra-large selected clumps (from open), full of bloom and bud, 20s. per 100; special quotations per 1000. Cash with order.—**JOHN ROBERTS**, The Gardens, Tan-y-Bwlch, R.S.O., North Wales.

EVERGREEN HEDGES.
YEW, English, 1½ to 2 feet, 30s. per 100; 2 to 2½ feet, 45s. per 100; 2½ to 3 feet, 65s. per 100.
HOLLIES, Green, 2 to 2½ feet, 40s. per 100; 2½ to 3 feet, 60s. per 100.
LAURELS, Common, 1½ to 2 feet, 12s. per 100; 2 to 3 feet, 15s. per 100; 3 to 3½ feet, 20s. per 100.
THUJA LOBBII, 2½ to 3 feet, 30s. to 40s. per 100.
We hold immense stocks of the above, all bushy and well rooted plants.

Special offer for Covert Plants, &c., free on application.
JOHN PERKINS and SON, The Old Established Nursery and Seed Business, 52, Market Square, Northampton.
TELEGRAPHIC ADDRESS—"QUICK," NORTHAMPTON.

ORANGES, LEMONS, &c.—A splendid collection; fine healthy plants, in fruiting condition.

ROSES for FORCING.—Extra-sized plants, in pots, of:—
NIPHETOS
WM. A. RICHARDSON
MARCEAL NEEL
CELINE FORESTIERE
REINE MARIE HENRIETTE
GLOIRE DE DIJON, &c.
Full particulars on application. Descriptive CATALOGUES free.
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SMALL SHRUBS and CONIFERÆ.—
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13.	" MAXIMA	12 0 0	75 0 0	76.	ONCIDIUM VIRGULATUM, Rchb. f.	8 0 0	45 0 0
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46.	" CLAVICEPS, Rchb. f.	10 0 0	50 0 0	110.	" " KLABOCHORUM, Rchb. f.	15 0 0	
47.	" CRISPUM, Lindl.	8 0 0	50 0 0	111.	" LEHMANNI, Rchb. f.	20 0 0	
48.	" var. LEHMANNI, Rchb. f.	6 0 0	40 0 0	112.	" ROEZLI (EUGLOSSA), Rchb. f.	15 0 0	
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50.	" EDUARDI, Rchb. f.	8 0 0	50 0 0	114.	" spec.	8 0 0	
51.	" EPIDENDROIDES, H. B. Kth.	20 0 0	100 0 0	115.	" (WARSCEWICZELLA) VELATUM, Rchb. f.	10 0 0	
52.	" HALLI, Lindl.	7 0 0	45 0 0	116.	" spec.	10 0 0	
53.	" var. XANTHOGLOSSUM, Rchb. f.	7 0 0	45 0 0	117.	" (CHONDRORHYNCHA) CHESTER-TONI, Rchb. f.	15 0 0	
54.	" HARRYANUM, Rchb. f.	15 0 0	100 0 0	118.	" EUCHARIS GRANDIFLORA, Planch. (MASTERSI, Bak.)	2 0 0	15 0 0
55.	" LEHMANNI, Rchb. f.	25 0 0		119.	" SANDERIANA, Bak.	2 0 0	15 0 0
56.	" LUTEO-PURPUREUM, Lindl.	8 0 0	55 0 0	120.	" HIPPEASTRUM (AMARYLLIS) SOL-ANDREIFLORUM, Herb., var. ALBUM	7 0 0	50 0 0
57.	" var. Flowers smaller	6 0 0	40 0 0	121.	" PHLEDRANASSA CHLORACEA, Herb.	3 10 0	25 0 0
58.	" var. SCEPTRUM	6 0 0	40 0 0	122.	" LEHMANNI, Rgl.	5 0 0	30 0 0
59.	" PARDINUM, Lindl.	7 0 0	50 0 0	123.	" SCHIZANTHA, Bak.	2 0 0	15 0 0
60.	" POLYXANTHUM, Rchb. f.	8 0 0	55 0 0	124.	" VENTRICOSA, Bak.	5 0 0	
61.	" RAMOSISSIMUM, Lindl.	10 0 0	75 0 0	125.	" STENOMESSON AURANTIACUM	3 0 0	20 0 0
62.	" var. XANTHINUM	8 0 0	60 0 0				

CONDITIONS.—Prices are quoted in English Sterling, and where not otherwise stated, relate to plants collected from their natural habitat, delivered free of all charges at the port of shipment. From there Buyers take all risk and expense. The price per 1000 plants is charged on orders of 500 and upwards; that per 100 plants on orders from 50 and upwards. On orders of 2000 plants of the same species a reduction of 15 per cent. is allowed; while on less than 50 plants of the same species a higher rate of 50 per cent. is charged. The packing is executed under F. C. Lehmann's personal care, and the methods employed are those which an experience of over twelve years has proved to give the best results; but under no condition will he hold himself responsible for the state or condition of the plants on their arrival; and Consignments once shipped at the port are entirely at the risk and expense of the persons who have ordered them. To secure the arrival of the Plants in good condition, Consignments—if not expressly otherwise ordered—will be dispatched only when the Plants are in fit condition to travel; the months being January to April, and July to October; and as the communication in this country is defective and wearisome, and the months being few during which shipments can be made, orders should be sent in as early as possible, so as to allow ample time for their execution. The amount of the Orders will be covered by Bills of Exchange drawn on the issue of the Bills of Lading; amounts under £25 payable three days after sight; above that amount 90 days after sight. Payments may also be effected through Messrs. ROSING BROTHERS & CO., 10, Basinghall Street, London, E.C.



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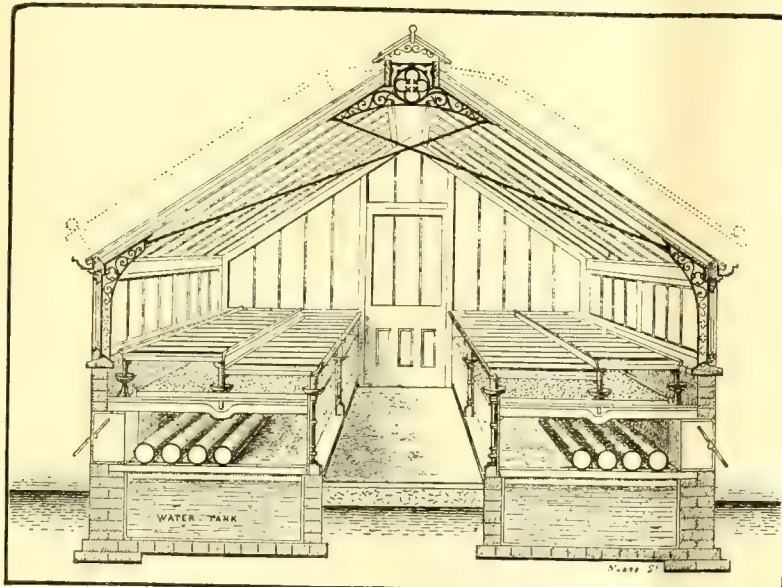
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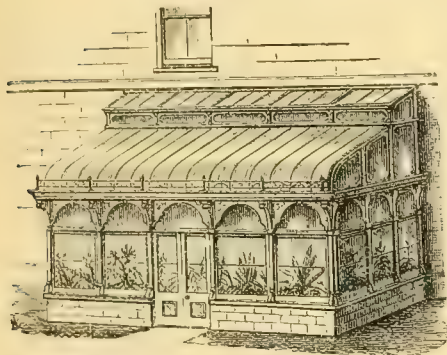
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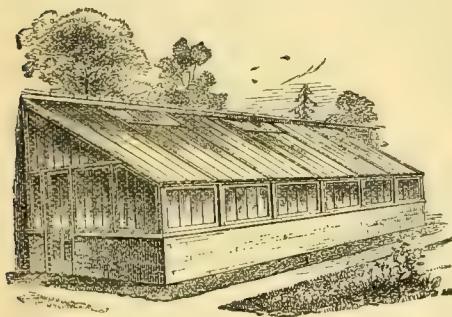
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THE GARDENERS' CHRONICLE,
Vol. III., Third Series, JAN. to JUNE, 1888.
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THE

Gardeners' Chronicle.

SATURDAY, DECEMBER 1, 1888.

ST. AUDRIES.

AT the spot where the Quantocks terminate between the end of the ridge and the Bristol Channel, is the village of East Quantoxhead; and, less than two miles distant, under the shelter of those famous hills of Somerset, lies West Quantoxhead, a little village with a beautiful park sloping to the sea, and enclosing within its pales a handsome and costly modern church, and a mansion well placed and pleasing to look upon—the pride of the country-side. This is St. Audries, the residence of Sir Alexander Acland Hood, Bart.

It is not surprising that Washington Irving should have been charmed with an English country-house, so delightful and retired, and yet, like Audley End, in full view from the high road. In his graceful description of St. Audries, Irving spoke of "vast lawns that extend like sheets of vivid green, with here and there clumps of gigantic trees heaping up rich piles of foliage; the solemn pomp of groves and woodland glades; the brook, taught to wind in the most natural meanderings, or expand in the glassy lake."

The site is ancient, the house modern—built on the foundations of several predecessors. There was probably a St. Audries manor-house here in the century of the Conquest—there has certainly been a house here for at least 500 years. In the present century the place has been in possession of several owners, whose term has been short. The last of these fugitive possessors sold it to Sir Peregrine Acland, Bart., in 1836, and it passed to the present owner by his marriage with Sir Peregrine's only daughter. Both these latest owners added to the house, which contains many works of art and valuable paintings, including Turner's picture of Rose Hill, the residence of the famous Mr. Fuller, M.P. for Sussex, Lady Acland Hood's great uncle. I must not dwell on these matters, but perhaps I may mention that, among the curiosi-

ties of St. Audries, Sir Alexander Hood possesses a singular memento of a most remarkable experience in the married life of one of its former owners. The relic explains the business precisely and concisely. It consists of a glass case containing the garments of three babies which on three successive Sundays were presented to Mr. Palmer, of St. Audries, by his prolific spouse, whom he had married rather late in life. The case stands beneath the portrait of the thrice made happy gentleman, and an inscription sets forth the dates of the three births, June 5, 12, and 19, 1489. It should further be stated that all these children were boys, and lived to be men, two of them becoming persons of some distinction.

There are both red and fallow deer in the park at St. Audries. The latter were gathered in groups around the house; the former seemed to prefer the high ridge of the Quantocks, which rises here abruptly above this well-sheltered domain. As I passed through the park, leaving the house on my left, I could see them on the hill above, tall, stately fellows, their figures showing large against the sky-line. There were several stags in close company, tossing their heads defiantly, for the period of the year (October 20) is the season of their rivalry. At the time I have just mentioned there had been 12° of frost in the neighbourhood of London, and the beauty of the gardens had been sadly marred by the destruction of many of the more tender bedding plants, and of Fuchsias and Pelargoniums. Here on the west coast the same plants which home reports spoke of as having been already destroyed, were not in the least injured. The gardens attached to the entrance lodges of the park were particularly smart, and I ought to add that the lodges themselves are models of substantial, comfortable, and ornamental buildings.

I have mentioned that the mansion is placed immediately under the south-west front of the Quantocks. A little winding valley, enclosing most of the park, and about a mile long, runs down from the house to the sea. The sides of this "vast lawn of vivid green" are covered with timber and "rich piles of foliage." Some of the most stately of the trees stand near the house at the upper end of the valley, and beneath these the deer were gathered. I noticed that the *Arbutus unedo*—a very beautiful shrub when well grown—is particularly flourishing about here, and attains a great size. The *Laurustinus* is another characteristic shrub at St. Audries, and the *Euonymus* is plentiful, finding, in a park bounded on one side by the sea, exactly the situation that suits it. The church, as I have said, stands near the house, within the park. It is an exceedingly handsome building, large enough for the parish, though small, and appropriately though highly decorated, "all marble within," I was told.

The natural beauties of this site would have been concealed by any considerable expansion of the ground devoted to shrubberies and gardens. St. Audries is exceedingly well kept up, and you cannot approach its precincts without perceiving in the tasteful beltings, handsome lodges and excellent cottages, that you are nearing the grounds of some great country house whose owner understands the duties of his station.

Mr. McCulloch, the head gardener, was not at home, but his foreman, Henry Martin, who seeks and deserves a better place, for which his character and knowledge well fit him, showed me through the grounds and hothouses, and through the conservatories opening into the living rooms. The gardening is well done. I was particularly pleased with the *Chrysanthemums* Mrs. Halliburton and Peter the Great, representing the whites and yellows, with many others. Some of these stood 9 feet high, in 18 inch pots, having been specially grown for a position in the hall. Another thing, most pleasing to reflect upon, I would gratefully refer to—the kind and liberal spirit which gives admittance to chance callers like myself, *H. E.*

NEW OR NOTEWORTHY PLANTS.

EUPHARIS GRANDIFLORA (Planch.) var. MOOREI, Baker.*

THIS is a new variety of *Eucharis*, for our knowledge of which we are indebted to Mr. W. Moore, of Glasnevin, who received it from Messrs. Sander & Co., of St. Albans. It differs from *E. grandiflora* by its much smaller leaves, abruptly rounded at the base, and by its staminal cup being pure white inside, only marked by a fine yellow line where the six filaments run down, and by the teeth between the filaments being larger and more acute. For the present I prefer to consider it a variety, and not a distinct species. *J. G. Baker.*

MASDEVALLIA NIDIFICA, Rehb. f.

THIS lovely little gem flowered on the Continent with M. Ortgies, of Zurich, I believe, and with Herr Oberhofgartner Wendland, of Herrenhausen. Now it has made its English debut with Mr. S. Courtauld, Bocking Place, Braintree, Essex. It is a very elegant, tiny plant, with leaves which have a very thin petiole and a cuneate, oblong, apiculate blade with a reddish hue, scarcely reaching 2 inches in height, usually shorter. Some wild-grown specimens of Consul Lehmann's are taller. The very thin, hard peduncles are reddish, with dark, purple spots. The cucullate bract exceeds the winged, purple ovary, has a purple keel on the back, and is whitish. The outer perigone, excepting the purple upper tail, is yellow, with five very conspicuous, indian-purple, longitudinal stripes. The lateral tails are yellow, longer than the body of the perigone, terete, very thin, the one ascending, the two descending. The body of the sepals forms a curved, sub-cylindrical mass, constricted between the chin and the free parts of the lateral sepals. Petals with a descending angular tooth, ligulate, with an oblique keel terminating in an apex of the denticulate, blunt, superior parts. Lateral lacinia of the lip half oblong, acute in front, covering with their apices the base of the median lacinia, which is very variable, varying from ligulate-acute to rhombic, and is often microscopically toothed in front; mid-lacinia light yellow, side-lacinia and disc white; column rosy, with purple spots.

This appears to have been met with since Professor Jameson by Consul Lehmann only, and I have no doubt that Mr. S. Courtauld's plant is of Lehmannian origin. It is exceedingly difficult to find this species, as this excellent collector informed me. *H. G. Rehb. f.*

ARUNDINA BAMBUSÆFOLIA.

ALTHOUGH the *Arundina bambusæfolia* has the making of an elegant plant in it, even when not in flower, it is seldom met with in good condition in collections, probably, because it is usually not supplied with nearly enough water when growing, and is also, in many instances, placed in sunny situations, which, as a shade-loving plant, it resents. Those who have grown it best find that it succeeds admirably when placed in well-drained pans, a proportion of loam fibre being added to the peat and sand in which it is potted, and an unrestricted supply of rain-water given to it while growing. Even after the production of the handsome rosy-petalled and crimson-lipped flowers announces the termination of the growths, the plants, being terrestrial, should not be dried off. A shady corner in the intermediate-house suits it best. It is a native of Tropical Asia, and is allied to *Bletia*. We are indebted to Mr. Weathers, Kew, for the sketch. (See fig. 87.)

* *Eucharis grandiflora* (Planch.) var. *Moorei*, Baker.—Petiole 7–8 inches long, flat on the face in the lower half. Blade pale green, obtusely cuspidate, 6–7 inches long by about 5 inches broad, abruptly rounded at the base. Flowers about 6 inches an umbel; pedicels very short; ovary $\frac{1}{2}$ inch long; perianth pure white; tube covered, under 2 inches long, cylindrical in the lower two-thirds, funnel-shaped in the upper third; expanded limb 3 inches in diameter; segments oblong, $\frac{3}{4}$ –1 inch broad. Staminal cup $\frac{1}{2}$ inch deep, $\frac{1}{2}$ inch in diameter, not at all green inside, faintly streaked with yellow along the decurrent filaments; marginal teeth lanceolate-deltoid, $\frac{1}{2}$ inch long; free filaments $\frac{1}{2}$ inch long. *J. G. Baker.*

ORCHID NOTES AND GLEANINGS.

ARACHNANTHE LOWEI.

I AM indebted to Mr. B. S. Williams, of the Victoria and Paradise Nurseries, Upper Holloway, N., for a fair raceme of this splendid plant, or rather one of the branches of the raceme. It measures 6½ feet in length, and bears thirty-two flowers; the three basal ones being orange, the remainder of the other kind.

I carefully examined each kind of flower, but found the pollen-masses and other organs equally perfect in each. The *raison d'être* of the two kinds of flowers on this remarkable plant seems as much of a mystery as ever. The floral envelopes are, of course, the parts of the flower which serve to attract insects for its fertilisation, and as the difference in the two kinds seems to be confined to these parts, the possibility suggests itself of some curious relation which may exist between the plant and its insect fertilisers, but this does not help matters much. The question seems one for investigation on the spot, if anyone should be fortunate enough to have that opportunity.

MASDEVALLIA PLATYRHACHIS.

THIS very remarkable *Masdevallia*, described by me at p. 178, August 18 last, still continues to flower in the Kew collection, though the racemes are now nearly exhausted. Its remarkable flattened peduncles, in fact the whole structure of the flower, is remarkable, while the colour is quite distinct from any other I have seen. Its history, as already pointed out, is rather curious, and I have not yet heard of any other plant being in the country, or whether it appeared accidentally in a batch of other species from Costa Rica. I should like to point out that the name was incorrectly spelt at the page above cited through the accidental omission of a letter in the type. It should be as given above.

CATTLEYA DOWIANA AUREA.

TWO specimens which I have received through Messrs. James Veitch & Sons will illustrate the variability in colour of this charming plant, which is now classed as a variety of *C. labiata*. The first is from the collection of Baron Schroder, The Dell, near Egham. The segments are of a very deep yellow, while the markings on the lip, which extend quite to the apex, are also of a very deep shade; the whole coloration being very brilliant. The second specimen came from the collection of Lord Rothschild, Tring Park, Herts. Here the segments are unusually pale, almost sulphur-yellow, the markings at the apex of the lip being also of a very pale tint. Behind this they run into light orange near the middle, and into reddish-purple near the base. This unusual paleness of the lip is believed not to be due to any weather influence, and is probably, like the former one, simply another instance of colour variation; not of much importance from a botanical point of view, perhaps, but a point which often enhances their value considerably as garden plants.

SOPHRONITIS CERNUA.

THIS compact little plant, which is the species on which the genus was founded by Lindley, in 1827, is now flowering in the Kew collection, the plant being established on a block. It grows but a few inches high, the pseudobulbs measuring but about half an inch and the leathery oval-oblong leaves about twice this length. The peduncles are few-flowered, the flowers being of a light cinnamon-red, with the base of lip and the column orange-yellow.

It is figured in the *Botanical Register*, t. 1129, also in the *Botanical Magazine*, t. 3677. The species is a native of Brazil, and was originally discovered by Mr. William Harrison, a Liverpool and Brazilian merchant, growing upon trees at Botafogo, near Rio de Janeiro. By him it was sent to his sister, Mrs. Arnold Harrison, of Aigburth, near Liverpool, in whose stove it first flowered, in 1826. *R. A. R.*

ORCHIDS AT FRINGILLA, SEFTON PARK, LIVERPOOL.

The month of November is not one in which flowers may be expected in great numbers, even in the most varied of collections; however, there are at present in the Orchid houses of Reginald Young, Esq., numbers of plants of various species in bloom.

A very rich collection is being formed by Mr.

Fine specimens of *Oncidium macranthum*, *O. ornithorhynchum*, *O. cheiroporum*, *O. maxillaria venusta*, were flowering profusely. A specially fine variety of *Masdevallia bella* was flowering, together with compact masses of the useful *M. tovarensis* and the pretty and interesting *Restrepia antennifera*.

Cattleya gigas was in flower, the width across the flowers being 9½ inches; also *C. gigas Sanderiana*, *C.*

dens is reported to be superior to the original plant in every point; it is figured in the *Orchid Album*, vol. vii., pl. 310. There are plants in the collection of *C. E. Wallisii* and *C. E. crocata*, and its sub-variety *rosea*.

The new and beautiful *Cattleya chrysotoxa* was just over; it was remarked that *C. Bungarothii* enjoys the treatment afforded it. Prominent amongst a fine batch of *Calanthes* is a fine form of *C. Veitchii*, which justly merits its varietal name *superba*. Several fine masses of *Cyclogyne cristata*, *C. c. Lemoiniana*, Chatsworth, Trentham, *maxima*, and *C. Massangeana* were growing with much vigour, and will yield great numbers of flowers a few weeks hence.

Strong plants of *Angræcum sesquipedale*, *A. Sanderianum*, *Cymbidium Lowianum*, *C. eburneum*, *Miltonia candida grandiflora*, and *Oncidium Cavendishianum* were pushing spikes of commensurate strength. *Lælias* are great favourites with Mr. Young, and several excellent forms of *L. anceps morado* were observed in flower, which will be followed by others. One very compact specimen carrying nineteen, and another of the recently introduced *L. a. grandiflora* (true), thirteen spikes; *L. albidia* var. *sulphurea*, *L. furfuracea*, and *L. autumnalis atro-rubens* were very fine, and flowering as they do at this season of the year, these species should be very extensively grown by all who admire winter flowers. Warner's form of *Lælia gigantea* is one of the finest and rarest of the genus, and was represented by a vigorous specimen.

The *Dendrobiums* grown are many, and consist of fine specimens of *D. Brymerianum*, *D. Leechianum*, a remarkable one of *D. Ainsworthii*, *D. A. var. rosea*, *D. luteocarpum*, *D. Wardianum* Lowii, *D. Dearei*, *D. formosum giganteum*, *D. crassinode* var. *Barberianum*. All of these were showing a profusion of flowers.

Cypripediums in flower were *C. Spicerianum magnificum*, *C. Lowianum*, a 20-inch panful; a fine mass of *C. Godefroyæ*, *C. barbatum pulcherrimum*, *C. Ashburtonia*, and *C. vexillarium superbum*. Noticeable amongst those not in flower were large plants of *C. Argus*, *acanthum superbum*, *Leeanum*, *Measuresianum*, *Druryi*, *Robelinii*, *Morganeanum*, *Schroderæ*, *grande*, *Curtisii*, *Sanderianum*, *bellatulum*, *Selligerum majus*, and others.

Other Orchids of interest were the scarce *Oncidium Lanceanum* var. *Louvrexianum*, apical lobe pure white; *Vanda Sanderiana*, *Renanthera coccinea*, *Cymbidium Hookerianum*, and *Brassia Keiliana tristis*, all of which were in good trim. *F. Ashton*.

ANSELLIA AFRICANA.

Several varieties of this species of Orchid exist which vary considerably both in height and in the depth of colour of the flowers, but the variety called *nitotica* is probably the best, being dwafier in habit, with darker and more distinctly marked flowers. It is also the most compact in habit. It does not, however, appear to be so plentiful as the typical form, examples of which are now flowering in the warm Orchid-houses at West Mount, Hillhead, Glasgow. Their reed-like stems—about 3 feet high, with numerous branched-drooping racemes of flowers nearly a foot long, and as much over—were conspicuous objects in the house. The flowers are freely spotted with reddish-brown on a yellowish-green ground. The flower-spikes are not very useful for cuttings, but if kept free from damp, in a moderately warm temperature, the flowers will last for a long time in perfection. Mr. Wilson grows his plants in plenty of material, and affords them much light and heat while making their growth, and obtains healthy, free-flowering specimens.

MAXILLARIA (LYCASTE) PICTA.

Although not so showy as some other members of the genus, yet, owing to the delicious perfume of its flowers, it is a favourite subject with many. The plant grows and flowers freely, and is neat in habit. The flowers, borne on moderately stout peduncles, are spotted and lined with purple-brown on a pale yellowish ground. Not unlike *M. acutipetala*, but



FIG. 87.—ARUNDINA BAMBUSÆFOLIA: COLOUR OF FLOWER, PALE MAGENTA AND ROSE. (SEE P. 628.)

Young, and Mr. Poyntz, the gardener, is managing them very well. Amongst *Odontoglossa* a very fine *O. crispum virginale* was in flower, as well as the ordinary type of *O. crispum*. Many examples of *O. Pescatorei*, *O. Edwardii*, *O. Cervantesi decorum*, *O. Sanderianum*, *O. aspersum*, *O. grande*, were in flower, or pushing their flower-spikes. Several compact and well-flowered *Sophranotis grandiflora* were remarked, and also a fine plant of *Oncidium crispum*, with fifty-five flowers on a single spike.

guttata, and a splendid specimen of *C. Bowringiana*, very dark in colour, and out of one of Mr. Sander's importations. *Cattleyas* all round were in good condition; and those in sheath included some which are very distinct. A number of *C. Mendelii* were as yet unflowered, and a rich find in point of variety may reasonably be expected shortly. *Cattleya Eldorado* and its varieties are well represented, and formed part of the now famous importation of the Liverpool Horticultural Company of 1886. *C. Eldorado splen-*

differing from that species by being more incurved, and the petals and sepals not so acutely pointed. A good specimen, in a basket, was in flower recently at the Royal Botanic Gardens, Edinburgh. Like most other *Maxillarias*, the cool or intermediate-house is the proper place for it, *F. R.*

ODONTOGLOSSUM CERVANTESII MORADA.

A very fine and highly coloured form of this plant is now flowering at Allerton Beeches, the residence of H. Tate, Esq., jun. The plant is of easy culture, and the specimen here mentioned is suspended in the cool house. *F. A.*

THE JENSENIAN SYSTEM AT CHISWICK.

THE report of the small trial of the Jensenian theory with respect to the earth-protection of Potatoes from disease, furnished at p. 572, is both very interesting and valuable. It is interesting, because it exhibits something very practical done in a quiet unassuming way, and with excellent results. It is valuable, because it naturally points to means whereby the *Peronospora* can be successfully combated.

From the first announcement of Mr. Jensen's theory of high-moulding I have had considerable faith in it, but for the credit of that distinguished man it did prove unfortunate that several successive seasons were favourable to the Potato, and unfavourable to the disease; hence, trials of the protective earthing system proved little or nothing. Now that we have had a really bad season it would seem, with the exception of this single, somewhat late entered upon trial of the method at Chiswick, no one else had tested high-moulding, and yet the season proved to be exceptionally one in which the plan would be subjected to the severest test. That the trial at Chiswick was hardly a fair one because entered upon late, is certain, although in this case, unavoidable. Mr. Jensen has laid it down that the actual protective earthing should be done before disease spots appear on the foliage, or, at least, directly evidences of such are presented that would, according to his belief, ensure that the protective earthing was applied ere the fungus spores had been washed into the soil. Mr. Jensen stated that some 4 to 5 inches of soil should cover the forming tubers, to prevent the spores being washed through the soil into contact with the tubers. That may be an essential precaution, but I believe is not so necessary to the success of the protective moulding as is the prevention of the rush of moisture incidental to heavy rains, which in the ordinary method of earthing invariably flows into the basin formed in the soil by the swelling tubers through the cavity around the stems. That cavity is always existent, and is enlarged in windy weather by the motion of the stems. The foliage and stems of the haulm act as conductors of moisture, and a far larger quantity of rain is thus carried to the tubers than would be the case were there no stems, but only cavities. The Jensenian moulding system in throwing the haulm on to one side of the ridge, and obliterating cavities at the base of the haulm, diverts the rain into the furrows, and thus the tubers are left fairly dry. I had ample evidence during the past summer, when occasionally lifting roots of Potatoes after rain, of the way in which moisture will gather in the tuber basin. Then the soil exterior to the tuber basin would be fairly pulverised, and workable, but that about the tubers would be literally like mud. The swelling tubers naturally force the soil outwards, and others form a sort of basin, the walls of which are harder than the adjoining soil, and thus the moisture running down the stems is retained, and through its instrumentality the fungoid spores are brought into ready contact with the tubers. That some sorts escape disease appreciably under the same conditions of culture can only be due, I think, to the tubers possessing stouter skins, so that the action of the spores is to some extent resisted. On the other hand

it has been proved conclusively over and over that Potatoes grown in richly-manured soils suffer from disease with double severity compared with Potatoes grown on unmanured soil. The reason seems to be found in the rapid growth of tubers in the rich soil, promoting the development of thin skins and soft watery flesh. It is difficult to furnish any other theory in relation to this diversity of result. The Jensenian system of protective earthing seems to be entirely opposed to the theory put forth a few years since by Mr. Wilson, to the effect that *Peronospora* spores or sclerotia were wintered or stored in the seed tubers, and developed activity after the plants had made due growth in the summer. Were such the case it seems impossible that protective earthing could in any way check the activity of the spores. Then there is some belief that the spores are wintered in the soil, but, if that be correct, it is as difficult to understand how the protective earthing can secure for the growing tubers comparative immunity from harm. It does seem absolutely certain that the spores float about in the air, and settling on the foliage and stems, produce the well-known black spots, or are washed into the tuber basin and thus affect the tubers. But what becomes of all those spores which fall upon the soil remote from the tubers, or from whence they come, still seems to be veiled in uncertainty. If the protective moulding be widely tried next year under essential weather conditions, and it be found as generally successful as it has proved to be at Chiswick this year, very much will have been done to clear up the ignorance which still prevails as to the action of the Potato fungus. *A. D.*

MARKET GARDENING AROUND NEW YORK.

WE believe that much may be learnt by our horticulturists by a careful study of the methods adopted by successful cultivators in other countries, and probably nowhere is the business of market gardening better done than in the vicinity of New York.

Mr. Peter Henderson tells us that the reason for this is possibly to be found in the fact that New York, being the great depot for all the nationalities of Europe it gets from them the various methods there practised; in addition to this, and which may even have more to do with it, the high price of labour forces them to adopt plans entirely unthought of elsewhere. Certain it is that, as far as the practical work in use for cultivation is concerned, their methods in nearly all operations are most expeditiously accomplished.

In the immediate suburbs of New York, where the lands are rapidly being purchased for building sites, many the market gardeners pay as high as 100 dols. (£20 16s. 8d.) rent per acre, annually, and that, too, in most cases, without a lease. All such lands, of course, are cultivated to their fullest capacity, and even at present low prices bring an average gross income of over £200 per acre.

A great advantage is found in having the lands for growing vegetables as near to the city as possible. The saving in hauling of manure is one important item; but another, and one of far more consequence, is that, if the grower is near enough to the city to make two or three trips a day, in such a fluctuating market as New York, it is greatly to his advantage.

Whatever kind of horticultural product is grown—whether fruit, flowers, or vegetables—he that is nearest the market, other things being equal, has decidedly the best of it—so much so that in most cases it is considered by Mr. Henderson better to pay £10, or even £20 per acre rent, if within one or two miles of the market of a large city, than to get land ten or twelve miles away for nothing.

Many important improvements have in recent years been made in culture under glass, particularly in the methods in use in starting plants of Cabbage, Cauliflowers, and Lettuce; the old plan of sowing the seeds for these plants in the open air in September and pricking them out in October, and keeping them in cold frames, is gradually giving way to sow-

ing in greenhouses or hotbeds in February and pricking out in March, which gives a far healthier and nearly as strong a plant by the first week in April as those that have stood the winter.

The plan adopted in the preparation of the seed-bed appears well worthy of imitation. Only 2 inches in depth of soil is used, which is made up as follows:—The first layer, of about an inch, consists of good friable loam, run through a half-inch sieve. This is patted down with a spade, and made perfectly level and moderately firm. On this is spread about one-fourth of an inch of sphagnum (moss from the swamps), having been dried and run through a sieve, so that it is of the condition of fine sawdust. On the top of the moss the ordinary soil is again strewn to a depth of about three-fourths of an inch. This being levelled, the seed is sown very thickly and then pressed into the soil with a smooth board. On this fine moss is again sifted, thick enough to cover the seed only. The bed is freely watered with a fine rose. The plants are pricked out into hotbeds just as the rough leaf appears. The advantages of this method may thus be expressed:—When the seeds of most plants germinate, and they are thickly sown, the stems strike down into the soil, the roots forming a tap-root with few fibres, unless arrested by something. Here, then, comes the value of the one-fourth of an inch of sifted moss, placed three-quarters of an inch from the top. As soon as the rootlets touch the moss they ramify in all directions, so that when a bunch of seedlings is lifted up and pulled apart, there is a mass of rootlets attached to each, to which the moss less or more adheres. To the practical gardener the advantage of this is obvious; the tiny seedling has to begin with a mass of rootlets ready to work which strike into the soil at once. The advantage of the moss covering of the seed is not so apparent in the matter of a free-germinating seed, such as Cabbage, as in many others; but in many families of plants it is pronounced to be of the greatest value.

With regard to general culture, it need only be said that every year brings out some improvement in varieties. Within the past dozen years many important advances have been made in earliness and in the quality of the vegetables grown.

Quite a number of the market gardeners are now getting to grow Strawberries in conjunction with their vegetable crops, by following the pot-layering system, by which a crop of fruit is obtained in less than a year from the time of planting.

The question of fertilisers for the use of the market garden is now becoming a very serious one for the market gardeners in such cities as New York, where the manure from the stables does not increase in the ratio of the increase of the lands cultivated, as perhaps half of all the products grown are shipped to adjacent towns and cities.

Still there are few market gardeners who do not use stable manure, which costs, when fit to go on the land, from 2 dols. (8s. 4d.) to 3 dols. (12s. 6d.) per ton. This is put on in spring at the rate of from 50 to 75 tons per acre, to which is often supplemented half a ton of Peruvian guano or bone-dust, which is harrowed into the land after the stable manure has been ploughed in.

A great variety of fertilisers are used besides Peruvian guano and bone-dust, such as fish guano, dried blood, blood and bone fertilisers, together with superphosphate of lime; but the majority of cultivators prefer pure bone-meal or Peruvian guano to all others. *Garden and Forest.*

CHEILANTHES.

THE most useful species of this genus are those which are sometimes found under a separate generic name, viz., *Myriopteris*, yet I believe they are better known as *Cheilanthes*, and are generally found under that name in nursery catalogues. Although the *Cheilanthes* can hardly be classed with Ferns useful for ordinary decorative purposes, the peculiar beauty of their somewhat slender fronds renders them indispensable in a collection; they also afford distinct shades of colour. *C. elegans* is one of the most

beautiful; the finely cut fronds are about 1 foot long and 2 inches broad, of a pale glaucous green on the upper surface, and densely covered with greyish-brown scales underneath. It is commonly called the Lace-Fern. *C. tomentosa*, a very distinct species, with rather long narrow fronds, not quite so finely cut as the above, thickly covered with silvery-grey scales or hairs, the whole plant having a greyish-green appearance. *C. hirta* (Ellisiana) is another desirable variety; it has larger fronds than either of the above, with a bright green surface, and brownish underneath.

All of the above may be readily obtained from spores, and are of free growth. They will succeed well in any ordinary compost; and a good loamy soil will suit them better than peat. They succeed best in an intermediate temperature, though *C. elegans* may be grown in the stove, and the other two in a low temperature, and although they like a fairly shady position they should not be grown under the shade of other plants or too closely together, or they will get drawn up, and when separated the fronds will not support themselves. A few young plants grown together in shallow pans make the best display; this is the best way to treat all of the smaller growing Ferns, especially if a succession of young plants can be obtained. A few fresh young plants grown together always have a better appearance than older specimens grown singly. *Pteris*.

PLANT NOTES.

PLANTS FLOWERING AT KEW.

The following interesting plants are now in flower in the Palm-house at Kew:—

Bauhinia tomentosa var. *glabra*.—This is one of the few species of the very large genus *Bauhinia* which are amenable to stove cultivation and which flower annually. It is a bush 6 feet high, with long switch-like branches and leaves 3 inches across. These are bilobed, as are all *Bauhinias*, and they always have a healthy look. The flowers are in pairs on the ends of the branches, each one being 1 inch across, and deep cupped, composed of five ovate petals which are canary-yellow in colour, the upper one having an additional blotch of purple. This species is figured in *Bot. Mag.*, t. 5560. It is a native of India, &c.

Carludovicia rotundifolia. A large tuft of this stemless, tall-leaved species is a conspicuous ornament in one of the beds. The leaf-stalks are 8 feet high, 1 inch in diameter at base, half an inch at top, round, smooth, shining green. The blade is 3 feet across, palmate, split to the base into about four divisions, which are again split into narrow segments at the top. The flower-stalk rises from the sheathing base of the youngest leaf, and is about a yard high, as thick as the leaf-stalk, and it bears three overlapping boat-shaped sheaths, 8 inches long and 2½ inches wide, green, falling off as soon as they unfold. They enclose a spadix 6 inches long by 1½ inch through, which is covered with flowers, with long white filaments attached to them, and hanging down in the most graceful manner. Afterwards the fruits, or rather the whole spadix, ripens, curves downwards, and the fruits split away at the base, revealing the most brilliant scarlet and yellow colours. It is difficult to describe the peculiar character of these flowers and fruits. A figure has been made for the *Botanical Magazine*. An allied species, *C. palmata*, is the source of the well known Panama hats, which are manufactured from its leaves.

Pandanus ceramicus.—It is only rarely that the cultivated species of *Pandanus* flower. In the Palm-house at Kew the very large *P. odoratissimus* has borne cones several times, and a male plant of the same species has only lately borne a magnificent inflorescence. *P. ceramicus* is a small kind when compared with that species. The plant now in fruit is 10 feet high, the stem naked, 1½ inch in diameter, covered with abortive spine-roots, and bearing at the top a crown of graceful green leaves, each one a yard long, and 1½ inch wide, channelled, the keel spiny

only near the apex, and the margins clothed with fine white spines. The fruit (they are really flowers, but one doesn't like to use the term for a solid cone, made up of little nuts) are in clusters on curving peduncles a foot long; each cone is 2½ inch long, by 1½ inch through, green at first, ripening to a rich scarlet colour of great attractiveness. This species is generally known in gardens as *P. ceramensis*.

Licuala grandis.—The large specimen of this is again flowering freely. It has bloomed every year for the last five years, but it has never ripened seed, although the flowers were carefully pollenised last year. The older name, viz., *Pritchardia grandis*, is that generally used for this Palm, although it is not a bit like a *Pritchardia*.

Xanthosoma robusta.—This grand Aroid attains gigantic proportions when liberally treated and allowed plenty of space. The plant now flowering has a stem 4 feet long, 6 inches in diameter, nearly erect, and bearing six leaves, the blade of which is 4½ feet by 3 feet, and the stalk 5 feet long, 6 inches in diameter at base, narrowing to an inch where it joins the blade. The flowers spring from the sheath of the young leaf, the scape being stout, 1 foot long, the boat-shaped spathe being 1 foot, and the erect spadix 8 inches, the whole not unlike a gigantic *Caladium* inflorescence. For large plant-stoves this Aroid is as useful as a *Musa*, and as easily grown.

Begonia socotrana and two of its offspring, viz., *B. John Heal* and *B. Adonis*, are now flowering side by side in the Begonia-house at Kew. As winter blooming kinds these are of first-rate excellence, for they bloom freely, remain in perfection several weeks, and are large flowered and brightly coloured. There is no reason whatever why these three plants should not be the forerunners of a race of winter-flowering Begonias as useful and beautiful as the race which owes its origin to two or three South American species. Everyone knows that the Messrs. Veitch set the ball rolling which resulted in the grand summer blooming Begonias, and it is to them that we owe this new and very promising race. *B. Adonis* is very much like an ordinary tuberous Begonia, except that it is flowering now when they are all at rest, and it retains its blooms longer. These are 1½ inch across, rosy-red, paler in the centre.

Rhipsalis Houlettianus.—There is only one really good garden plant amongst the numerous species of *Rhipsalis* known, and that is the above named. The stems are flat, like a knife-blade; each "blade" is about 9 inches long, sinuately lobed or toothed, with a flower springing from each sinus. This flower may be called a small white Epiphyllum-like flower. The stem is thin and cylindrical below, so that the flattened portion looks like a long leaf with a thin stalk. A well grown plant when in bloom is a pretty and unusual picture; such a plant may now be seen in the collection at Kew.

Ipomœa ternata.—This is now flowering freely in the stove at Kew. As will be remembered, it was introduced a few years ago as "the white-flowered *I. Horsfallii*," and was then named *I. Thompsoniana*. It afterwards proved to be the old *I. ternata*, of which Jacquin published a good figure in 1797 from a cultivated plant. Of course it is not nearly so attractive as *I. Horsfallii*, of which a very large example, covered with bunches of bright crimson blossoms, may be seen in the same house with *I. ternata*. *W. W.*

SPEROGASTRA CONCINNA VAR. MULTIFLORA.

This is a neat small plant, attaining a height of about 2 or 3 inches. It should be treated as a stove-plant, and several of its tuberous rhizomes put into pans just below the surface of the soil. A mixture of peaty sandy soil suits their requirements, and this should be raised well above the rim, mound-shaped, with several small pieces of sandstone inserted here and there over the surface, between which the rhizomes may be planted. It is very floriferous, continuing in flower for a long period, the colour being of a lilac-blue. To propagate it, each small stem should be separated and put into small pots, or, if sufficient can be

procured, made up into a permanent pan and put into a close case for a few days, which is best done in the spring time; or the rhizomes may be cut into two or three pieces. This is figured in *Bot. Mag.*, t. 5253; but this genus, together with *Gloxinia* and a few others, is now placed with that of *Sinningia*.

TORREYA MYRISTICA.

In any collection of Conifers the above-named deserves a place, not so much on account of its appearance as a tree, for as such it cannot be compared with many of the beautiful Pines and Piceas, but it is worth planting for the sake of its curious appearance when in fruit, especially from July to the end of October.

A plant in the collection here, about 20 feet in height and the same in diameter of branches, has borne fruit regularly the last eleven years, some years more abundantly than others; but this year I have never seen it better, many hundreds of its curiously nutmeg-shaped fruits, about 1½ inch long having been produced near the extremities of the branches, giving the tree a quite distinct appearance from any other Conifer.

A thick husk, similar to a Walnut, encloses the solitary fruit, and when ripe, peels off in the same manner. This husk has a unpleasant and peculiar smell, and the tree has, no doubt, on that account been called the Fœtid Yew.

It is a native of California, and is said to attain a height of 40 or 50 feet. It thrives well in a gravelly subsoil, and is very hardy, our winter not appearing to injure it at all. Its wood seems hard and durable like the Yew, but the trunk is small in comparison with the spread of branches. *A. Harding, Orton Hall, Hunts.*

THE CHEMISTRY OF VEGETATION, IN REFERENCE TO THE GROWTH OF THE POTATO.

(Continued from p. 442.)

Now to get an idea of the passage of starch from the leaves to the tuber—which journey it cannot, it is said, perform as starch—let us for a moment, as we used to as little children, "just pretend." We will pretend there are groups of happy little beings in parties in a leaf made up of six Cs, ten Hs, and five Os, and they want to go a long journey exploring. They don't know what has become of little beings like them before. They all have hold of one another and they find, try how they will, they can't get away as they are. And then pretend that some good fairy tells them that if they get two more little H's and one more little O to join them, they will be as if they were something quite different, and able to get about. People won't know them. And they do; and then they journey ever so far and ever so long. And then they get to a place where they want to stop. But some of them want to be as they were before. And the good fairy tells them that to do so they must say good-bye to two little H's and one little O; and they do, and find they are just what they were before: and so they settled down in their new home, and—well—lived happily ever after, and never wanted to go any more journeys.

But although it is so commonly believed starch molecules cannot, or do not, go as such from one part of a plant to another, Sachs distinctly speaks of finding starch in the petioles.*

Now although the grouping, or, as it is often called, the "linkage" of atoms in molecules of inorganic compounds has been arrived at in many cases with what appears to be tolerable certainty, the case is very different with organic. It has indeed been suggested that the composition of soluble starch may be $C_{120}H_{201}O_{100}$ † (The relative proportions, 6, 10, 5, still remain.)

* Marshall Ward's translation of the Vorlesungen edition of 1857, p. 329.

† Horace T. Brown and John Heron, "Contributions to the History of Starch and its Transformations," *Journ. Chem. Soc.*, xxxv., 1879, pp. 595-654. The reference is to p. 649.

Analysis with the combustion-tube, as mentioned above, which gives the carbon of a compound as carbonic acid, and hydrogen as water, makes known the total amount of carbon and hydrogen in the weighed quantity examined, but it does not tell anything about the molecular arrangement. This is work yet to be done.

The polariscope, to which brief reference must be made, has revealed to us that bodies having the same chemical composition (as regards weight proportion) may have very different physical properties. The natural inference is, that they are not identical in the form of their composition.

Perhaps the polariscope is not familiar to all cultivators, even under its trade name, saccharometer, which is one form of it. Most people, I suppose, have seen Iceland spar in an optician's window. There is generally a wafer or spot of colour under it. In certain directions this appears double. Now, without entering into questions of optical axes, or the wave theory of light in connection with the subject, what has been found can be done with this. Leaving out all details (which, with the theoretical explanation can be found in popular form in Mr. Spottiswoode's lectures to his workpeople),* a slice of the spar cut in a particular direction is fixed in a tube which admits light on to it. There must be no other light in the room powerful enough to interfere with what has to be watched. Another slice is in another tube, so fixed that it can be turned round. The two tubes are placed so that the light, after passing the first, passes on through the second to some white surface. Some coloured light is used—say yellow. The light is seen on the white surface—a white wall, or sheet of paper. Then the further tube is gradually turned round, still kept in the position that the light enters it; but as it is turned, and with it of course the slice of spar, the light fades till it disappears. This takes place at half a full turn round.

If a glass vessel with flat sides containing dissolved sugar be then placed between the two tubes the light will reappear, passing on to the white surface. But a certain amount of turning of the tube will stop it again.

Different solutions are found to have different effects in this respect, and they have been carefully examined with apparatus, in which the amount of turning given is indicated on a scale marked off in degrees. They have also been examined with lights of different colours, and in this way their action on what is called polarised light is known. Now, with regard to the action of solutions of the carbo-hydrates it has been found that even those which have the same chemical constitution behave differently. Just as at a meeting it all depends on whether you are on the platform or in the hall which you call right or left, so it depends on whether you are in front of or behind the tube you would say it turned right or left. But it is conventionally agreed which is called right and left. The practical point is that some solutions give the light a "right hand twist" and some a "left hand twist." The second tube has to be gradually turned right or left to gradually cut off the light or let it pass again. I hope this makes the facts clear, though the language is far from scientific. But then, as regards using scientific language, we know what we mean by a Potato-apple, though it is not an Apple, and even "tuber" is not a proper word to use if it is rightly used for some plants other than Potatoes.

However, leaving out questions of "specific rotatory power," and the numbers used to express this, the broad fact is, that some turn the light to the right and some to the left. The plus sign (+) is used for right and the minus sign (−) for left. Dextro and levo are sometimes used in naming combinations.

Now let us look at what has been found with regard to some of the carbo-hydrates.

Among the glucoses, all of which have the same chemical composition, as given above, dextrose (Grape sugar) is +, while levulose (fruit sugar) is −;

some others are + or −. Among the amyloids, starch is +, while inuline is −, and dextrine is very powerfully +. Temperature affects "rotatory power." Composition, as shown by weight proportions, is not, then, a full explanation of differences. Though the polariscope is used in testing the strength of saccharine solutions, I am not aware that it has been applied in starch manufacture.

What is the significance of such facts as these appears to have received but little attention. What their study may in time practically lead to it is impossible to guess. What is the physiological effect between + and a − sugar is not known. It has been wantonly suggested that babies cry when their milk has − sugar, and laugh when it has +. It has also been suggested there is a + Potato starch and a −, and that both are grown in Ireland, and give a right or left-handed light in which public events are viewed. This can hardly be considered a serious political suggestion, for there is no hint whether it is the Unionist or Home Rule districts that furnish the hypothetical − starch.

Before passing on from this part of our subject, there are one or two points to mention.

Though both starch and dextrine belong to the group amyloids, that is, they have the H and the O present in the same proportion, and both are + starch forms with iodine a deep blue compound, which dextrine does not. Dextrine is called British gum, and can be formed from starch when heated to about 150° C.

Cellulose, the colourless material of the woody fibre of young plants, has the same composition, but

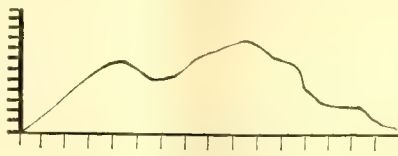


FIG. 88.—CHLOROPHYLL SPECTRUM.

it behaves differently with sulphuric acid, or on boiling.

The addition of nitric acid and water to starch affords an example of a substitution product. The acid is NO_2 added to starch $\text{C}_{12}\text{H}_{20}\text{O}_{10}$; the result is $\text{C}_{12}\text{H}_{19}(\text{NO}_2)\text{O}_{10}$, where NO_2 has substituted the place of our H.

Reference has been already made to some early observations on the effect of light on plants in decomposing the carbonic acid of the air, and so obtaining their carbon. The connection of this with the influence of chlorophyll has in recent years received considerable attention, especially with the aid of the spectroscope. Though the latest forms of this instrument are complicated and costly, the principle may be readily understood. It is easy to do as Newton did, let light into a dark room through a circular hole in a shutter, and hold a glass prism in the path of the light. An ordinary candelabra drop does very well. The coloured spectrum formed on a wall beyond is no doubt familiar to everybody. Wollaston used a straight slit instead of a round hole, and got his spectrum more clearly defined. What is seen is what is called in ordinary language "all the colours of the rainbow." In a spectrum caught on white paper from a good prism in strong light it is not difficult, with attention, to see there are dark shades or lines in various parts of the spectrum. It is on the presence of these lines that the work of spectroscopy is based. Quartz prisms or a wedge-shaped bottle containing a solution of bisulphide of carbon, is used instead of a glass prism; the source of light is in a lantern, and a tube with lenses collects and focuses the light on to a narrow slit. The electric light gives the spectrum complete, but different bodies are found on ignition to give only parts, in some cases very small parts of it, bright bands only here and there. The position and number of these bands

differs for different bodies, but is always constant for the same body. Hence it has been possible, taking the complete spectrum as a standard and marking it off into degrees (see fig. 88), to map the position of the bands and lines which occur in spectra from different sources. So characteristic are these that by looking at the spectrum any one familiar with this kind of work can tell what body or mixture of bodies is being used as a source of light. Different solutions also put in the path of the light are found to "cut out"—obliterate—part of the spectrum; and as the behaviour of so many has been studied it is possible to recognise certain solutions in this way. The applications of spectrum analysis at the present day are many—from reading the constitution of heavenly bodies to detecting the presence of minute quantities of bodies which ordinary analysis would fail to do. In plant physiology its two chief uses are a study of the effects of different portions of the solar spectrum, and of solutions obtained from different parts of plants.

It was to the development of the daguerrotype process of taking pictures we are largely indebted for the impetus given to the study of the action of different parts of the solar spectrum.

RECENT WORK.

There have been already mentioned:—

- a. The discovery of "fixed air."
- b. The recognition by Lavoisier that this is $\text{O} \text{ C } \text{O}$ and its being named carbonic acid.
- c. The recognition of the distinction between $\text{O}=\text{C}=\text{O}$ CO_2 and $\text{O}=\text{C}-\text{O}$ CO .
- d. The many investigations of the composition of the atmosphere.
- e. The determination of the fact that plants obtain their carbon from the CO_2 of the atmosphere.
- f. That intensity of light has an influence on the amount of carbon fixed. And
- g. That the colour of light has also an influence.

It now remains to notice the more recent work which has been effected with the refined appliances which modern science has devised. This work has in part confirmed and in part modified the conclusions drawn from earlier work. It has narrowed the questions still under discussion and given to them greater precision. Much of our increased knowledge of the various forms of solar energy has come from the subjects being taken up from a purely physical point of study. Starch and its modifications has also been studied from a purely chemical point of view. But it is with it only in connection with the growing plant we are at present concerned.

Recent work has mainly centered round the questions:—

1. What is the true function of chlorophyll? (chlorophyll is mentioned above under Sénéquier) and what is it?
2. What is the connection between chlorophyll, light action, and starch formation?
3. Is starch the first carbon compound formed in a plant?
4. What is the constitution of starch-forming bodies themselves?

Around these are clustered many subsidiary questions.

Memoirs and papers on these points are numerous, all of them, however, from foreign sources. Many of their questions overlap, and are treated in the same paper, and the work on the different lines has been going on more or less simultaneously. A retrospect in chronological order is therefore hardly possible.

As already mentioned, Sénéquier drew attention to connection of plant growth and coloured light. H. von Mohl first pointed out (1836) the common association of starch with chlorophyll, and though but vaguely, this was enough to direct attention to the subject. Subsequently Böhm, with improved iodine test, found a means of more easily determining its presence in chlorophyll corpuscles. From gradually extending examination of a wide range of

* W. Spottiswoode, F.R.S., *Polarisation of Light: Nature series.*

plants it would appear that in some starch is not found at all, some other carbon compound instead being present.

Sachs, writing in 1882, claims that he was the earliest investigator to lay down that the first definitely established product of assimilation is starch. He says that in 1862 he came to the conclusion that the enclosed starch, which had been observed in the chlorophyll corpuscles by Nägeli and Mohl, is to be regarded as the first evident product of assimilation formed by the decomposition of carbonic acid, and gives references to his papers of 1862 in *Flora und Botanische Zeitung*. He points out that the action in a leaf is local. By placing one-half of a leaf in

the leaves is perhaps of secondary importance. The paper (of which an abstract has been given in English) is, however, of interest, since among other things it gives a description of the method of studying the chemical effect of light on cells with the help of the microscope. The plates show, magnified 700 or 800 times, the appearances of the cells as chemical changes occur in them, and he especially points out the care he took that the effects of heat and of light should not be confounded. Though he speaks of the relation between the action of chlorophyll and the formation of carbon compounds being wholly hypothetical, and not supported by experiment, it may be noted that Sachs, who has

intense enough to produce the green colouring matter of plants, is not necessarily enough to affect the decomposition of carbonic acid followed by formation of starch. It would be an interesting point to know the relative amount of starch-forming work effected by Potato leaves fully exposed, and by those shaded by others, as this might be found to point to the value or not of full-foilage plants.

The kind of light, or "part of the spectrum," which has the greatest influence on the decomposition of carbonic acid and assimilation of carbon, has been studied by Draper and by Pfeffer.* Pfeffer has represented the results of his researches by a diagram (fig. 90). A. is the band at the red end of the spectrum, and the letters follow to H in the violet end. The figures 1, 2, 3, are in the "infra red." The height of the thick line shows the varying amount of assimilation, and it will be seen that its maximum is between D and E, where the yellow and blue of the spectrum begin to mingle into green. Outside C and F the effects are but slight. In experiments with artificial cultivations, or in growing under tinted glass, such knowledge is of importance.

The method of development of starch-grains has been carefully studied by A. F. W. Schimper.† Even for those who would not trouble to read the paper the plate is of interest. But in no illustration does he refer to the Potato. He does, however, in passing, mention starch grains in the stem of the Potato.

Amid all the activity of work it seems strange that with our Potato crops, second in importance only to our cereals, the study of the formation of tubers is practically untouched. Beautiful Potatoes may be met with at shows; at certain places good table Potatoes may be purchased; but our general market supply is certainly not so good but that it might be improved, W. S. M.

(To be concluded.)

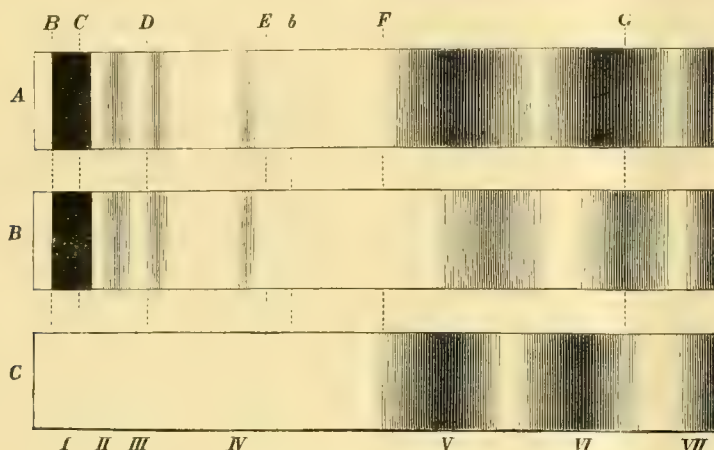


FIG. 89.—SPECTRA OF CHLOROPHYLL.

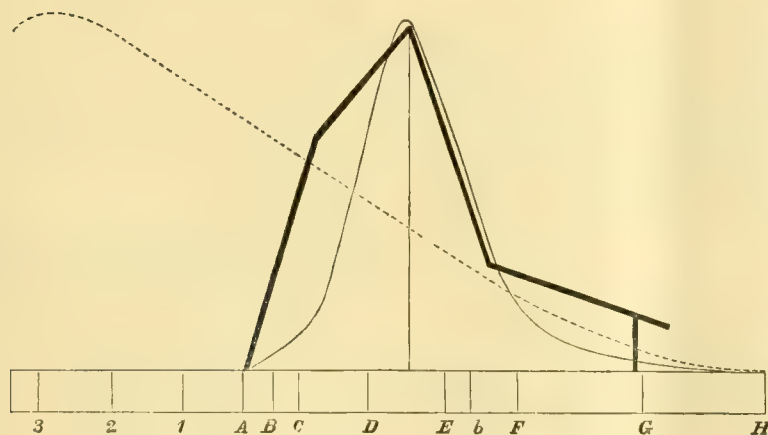


FIG. 90.—DECOMPOSITION OF CARBONIC ACID, AND ASSIMILATION OF CARBON.

Dotted line = heat; fine line = brightness; thick line = assimilation. From a paper by W. Pfeffer, *Die Wirkung farbigen Lichtes auf die Zersetzung der Kohlensäure in Pflanzen*, p. 46, bd. i., "Arbeiten des Bot. Inst. in Würzburg," 1874.

atmosphere deprived of carbonic acid, while the other half is in ordinary atmosphere, there is no starch formed in the first half, while in the second there is. Similarly, if a portion of a leaf is shielded from light action, no starch formation takes place there. This limits the question of starch formation to the action of individual cells, and reduces the study of this part of the question to the action of light and decomposition of carbonic acid in each cell.

Pringsheim, however, in a lengthy paper published in Leipzig, 1881, urged that hypochlorin is the primary product of assimilation resulting from decomposition of carbonic acid. To the cultivator whose chief consideration is the formation of starch in the tuber, the question of details of its formation

since written, maintains that starch is the first visible product.

With regard to the chlorophyll itself, researches with the spectroscope have shown that it is probably not so simple a body as was at first proposed.

Fig. 89 gives the spectrum (A) of the extract of green leaves obtained by their solution in alcohol; (B) of the blue constituent, which is soluble in benzol; and (C) of the yellow constituent. The letters refer to the position of the lines (known as Fraunhofer's) so commonly used in mapping spectra, and the figures to Kraus' absorption bands.

But whatever may be the outcome of present research, the fact seems well established that the action of light with chlorophyll is essential to the formation of starch, and, further, that light which is

THE APIARY.

BEEKEEPERS will again need reminding that, winter coming upon us, the long evenings may be usefully employed in reading up the subject, though books without practice is not advocated.

The month has been stormy generally, but the weather has been mild, and bees have had a great many flights. This is good for them, but as a consequence there is an immense demand on the stores, and woe betide the man who has not fed his bees! I know a cottager who acts on the "let 'em alone" system. Already he has about thirty stocks out of fifty dead. It is absolute nonsense to let them alone. If fodder were scarce would the farmer starve his cows? It is too late now to give liquid food, but candy may be put under the quilt just over the cluster, and this will save many a stock. Entrances may now be opened to their full width, as all danger of robbing may be considered at an end till spring, and air is beneficial to the hive in assisting to keep it dry. The bees should not be disturbed unless they are starving, and then only as above directed. If it is necessary to move hives, it had better be postponed till the bees are absolutely gone to rest. That will be in about another month. Bee.

EXPERIMENTS IN HYBRIDISING BARLEY. †

THE author stated the results he has obtained by crossing *Hordeum vulgare*, *H. hexastichum*, *H. distichum*, *H. Zeocriton*, and *H. trifurcatum*, as made by him since 1884 on a large scale. He illustrates his subject with specimens. He described the precautions to be taken in such crossing experiments, and deduced the following conclusions:—(1), All the

* Draper, *Ann. de Chimie et de physique*, 1844, p. 214, &c.
† *Bot. Zeit.*, No. 52, 1880; Transl. in *Q. J. Mic. Sci.*, 1881, p. 201, with plate xix.

† By M. Beyerinck: before Royal Academy of Sciences, Amsterdam, Holland, June 30, 1888.

above mentioned Barleys may be crossed with facility, indiscriminately. (2), The hybrids thus obtained are very perfectly self-fertile; those produced from *H. vulgare* (fem.) and *H. distichum* (m.), and those from *H. vulgare* (fem.) and *H. Zeocriton* (m.) even cleistogamous. (3), The hybrids of the first generation partake in general of a middle shape between the parents. An exception to this rule was made by those of *H. nudum* (fem.) and *H. trifurcatum* (m.), a great part of which proved to belong to the not expected common intermediate form between *H. vulgare* and *H. distichum*. A few specimens belonged to the expected cornutum form. (4), The seedlings from hybrids obtained by self fertilisation are very various. Some new varieties were also secured. It was remarkable that the third generation of a cross between *H. vulgare* (fem.) and *H. Zeocriton* (m.) produced *H. hexastichum*. (5), In the present summer, a cross effected in 1884 between *H. distichum* (fem.) and *H. trifurcatum* (m.) produced a form almost completely without awns. *Abridged from "Nature," August 2.*

THE HERBACEOUS BORDER.

AT p. 510, your correspondent, Mr. J. Horsefield, has given instructions respecting the above, and as his remarks are intended "for the benefit of those who are taking up the cultivation of these plants for the first time," it may be as well if a good representative list of first-class plants be given at the start, so as to encourage the growing of these plants, and make each newly-formed collection sufficiently attractive, that all who become acquainted with it may feel disposed to attempt something of a similar kind. Though it was not to be expected that Mr. Horsefield could, in his article, include all the good things to be found now among hardy perennials, yet it appears quite necessary that only good things should be named, and not those which, from a decorative standpoint, are valueless. If we would have the culture of hardy plants extended, even as far as their merits deserve, we must encourage new beginners, and not include any weedy subject which may hereafter prove disappointing. Some of those mentioned in the list referred to are only fit for a botanical garden—for example, the *Veratrum*s; others, as the *Tussilago*s, should only be found in out-of-the-way corners; for no plant could be more out of place than *Tussilago fragrans* would be in the front, especially in company with *Hepaticas* and *Gentiana verna*—the last-named quite unfitted for the beginner, and often very troublesome to the experienced; others, again, are misplaced, such as *Aquilegia corulea* and *Aster dumosus*; these two rarely attain 1 foot in height, and yet they are given as companions plants fully 3 feet high—for example, *Anemone japonica* (which is very often 3½ feet), *Aquilegia chrysantha*, *Asphodelus luteus*, and so forth, all of which are calculated to disappoint a beginner. And really there is an endless number of first-rate showy border plants not mentioned at all. Take the front row nearest the edge: here you may have *Snowdrops*, *Winter Aconite*, *Christmas Rose*, *Polyanthus*, bedding *Violas*, *Phloxes amoena*, *Nelsoni*, *frondosa*, *setacea*, *Vivid*, *The Bride*, and others; *Saxifraga Wallacii*, *Cheiranthus alpinus*, *Gentiana acaulis*, *Pink Mrs. Sinkins*, *Iberis corifolia*, *Iris nudicaulis* and *I. pumila* vars., *Campanulas* *turbinata*, *carpatia*, and *alba*; while, if greater effect were needed in spring, *Chionodoxa*, *Erythronium*, *Triteleia uniflora*, *Crocus* in variety, *Anemone fulgens*, and such like, may be added, all these being not more than 9 inches high on an average. The next row, if rows are the order of planting, should contain *Lychnis fulgens* and *Haageana*, *Iceland Poppies*, *Aquilegia corulea*, *Anemone sylvestris*, *Aster dumosus*, *Trumpet Daffodils*, such as *princeps*, *Horsfieldi*, *spurius*, *rugilobus*, *Henry Irving*, *Golden Spur*, and so forth; *Orobis vernus*, *Helleborus orientalis* vars., *H. niger maximus*, *Geum coccineum* pl., *Iris Victorine*, *Arnebia echioides*, *Onosma taurica*, and the like. Behind these should appear *Senecio pulcher*,

Aster bessarabica, *A. longifolius formosus*, *Trollius* in variety, *Iris germanica*, and allied sections, a dozen good assorted kinds of about 2 feet high; a few clumps also of Spanish and English *Iris*, the double crimson form of *Paeonia tenuifolia*, *Helenium pumilum*, *Rudbeckia Newmanii*, *Anthericum* in variety, *Hemerocallis Thunbergi*, double white *Rocket*, *Lychnis viscaria flore-plena*, perennial *Cornflowers*, *Potentillas*, a dozen good *Carnations* in variety, and many more. Another batch of increased height are single and double *Pyrethrums*, *Coreopsis lanceolata*, *Paeonies* in variety, *Gaillardias*, *Irises L'Innocence*, *Madame Chereau*, *Hortense*, *pallida*, *Walneri*, and *Imogene*; *Lilium dahuricum* in variety, *L. tigrinum* and its forms (these will attain 7 feet high and even more when established and well suited), *Hemerocallis flava*, *Stenactis speciosa*, *Helenium autumnale*, *Leucanthemum maximum*, some good and distinct herbaceous *Phloxes*, *Lychnis vespertina*, *L. chalcidonica*, *Doronicums*, *Oenothera Youngi*, *Rudbeckia purpurea*, and others. Another row may be planted with *Galega officinalis* and *alba*, *Pyrethrum uliginosum*, *Iris sibirica*, single and double *Sunflowers*, *Aster ericoides*, *Anemone japonica alba*, *Spiraea venusta*, *S. Ulmaria plena*, *Dictamnus fraxinella*, *Tritoma uvaria*, *Iris Kämpferi*, *Lilium candidum* and speciosum forms, and *Delphiniums*. While if plants of statelier growth were needed the want may be supplied with *Hollyhocks*, the taller *Delphiniums*, *Bocconia cordata*, *Iris ochroleuca*, *Lilium pardalinum* (a peat lover), *Tritoma nobilis*, *Aster novæ-angliae*, and the variety *rubra*, and the like; always allowing a greater space for the taller subjects to develop themselves. *Bocconia cordata* and *Pyrethrum uliginosum* make good isolated specimens, as do *Gynerium* and *Tritoma*.

In the foregoing we have a good assortment, as varied in colour as in height, and in the seasons in which they flower; and, best of all, all may be grown successfully by any one in fairly well enriched soil. Those who desire to get the full beauty of *Tussilago fragrans* should plant it in some out-of-the-way corner; give it a few soakings of liquid manure during the season, and annually in October pot up, say, six of the flowering crowns in a large 32-pot; water well, and place in a frame and shade for a few days; they make excellent pot-plants for conservatory or cool greenhouses, and, despite their dinginess of colour, the flowers impart a delicious perfume, which renders them worthy of the appropriate name of winter *Heliotrope*; thus treated this variety is far too good to be cast aside as worthless. *E. Jenkins.*

SPRINGWOOD, DARTFORD.

[SEE SUPPLEMENTARY SHEET.]

SPRINGWOOD, Dartford, in Kent, is the residence of T. Honychurch, Esq.; the gardens, which are of small dimensions, are kept in excellent conditions of neatness and order by Mr. H. Davis, the gardener, who is carrying out several improvements. The gardens are utilitarian to a degree, flowers suitable for cutting and decorative purposes receiving much attention, and consist of *Dahlias* (singles especially), *Tuberose*s, *Marie Louise* and *Neapolitan Violets*, which are favourites; *Pelargoniums*, *Primulas*, *Fuchsias*, &c., with which also the conservatory attached to the house was furnished when we visited it. One feature in the conservatory is the very fine plants of *Passion-flowers*, which are trained over the roof, the hybrid *Van Volxemi* being particularly noticeable, flowering freely, and giving life and brightness to the whole.

Immediately outside this structure, and in an angle formed by it and the residence, is a fine vigorous specimen of *Magnolia grandiflora*, about 25 feet high, growing freely, and bearing a number of flowers in its proper season. The beds about the lawn are furnished chiefly with sub-tropical plants and a few small *Conifers*, the lawn itself extending for about 100 yards in length, and at one side of it towards the far end is a collection of *Roses*.

After reaching the end of the lawn we emerge on

"The Wood," of which the illustration (see Supplement) is a representation, the view being taken at its limit. The wood consists of young trees of varied nature, as *Birch*, *Lime*, *Elm*, *Beech*, &c., with an undergrowth of *Ivy* and *Brambles*, which are allowed to grow freely. The walks are edged with a slight rockwork, in which are planted bulbs of *Snowdrops* and *Daffodils*, and throughout the rest of the ground the wild *Scilla nutans*, which forms a conspicuous object in the surrounding country, is to be seen cropping up in abundance. The walks are carpeted with moss, and the whole makes a quiet, cool, and pleasant retreat during the summer months.

The garden is a good type of a modern suburban residence, of which many examples may be seen around the outlying districts of London and other large towns.

FORESTRY.

HEDGEROW AND FIELD TIMBER.—There are very few timber trees common to this country, whether native or introduced, which do not occasionally occur in our hedgerows. Speaking broadly, however, three species have the monopoly, viz., the *Oak*, *Elm*, and *Ash*. Of these, the *Elm* is by far the most common. This, no doubt, arises from the fact that the *Elm* propagates itself so freely from suckers, whereas the others are produced from seedlings only. Though but comparatively little is said of this class of timber in forestry publications, it is a subject which deserves attention, as from hedgerow and field trees a large proportion of the supply of home-grown timber is drawn, especially in this part of England. The few writers who touch upon the matter at all, as a rule, speak in a condemnatory sense. One cannot deny that there are certain well-founded objections to growing timber in these positions, but when the question is looked into fairly and dispassionately, it will be seen that a little judgment is all that is necessary to put the whole thing on a satisfactory footing. The greatest opponent of the cultivation of the hedgerow and field tree is, without doubt, the arable farmer, and in view of the many difficulties this gentleman has of late years had to contend with, his objections are entitled to consideration. Anything which can be done to remove any drawback to the successful growth of crops every reasonable land-owner is ready to do.

Removal or Lopping.—Overhanging trees, either in the cultivated fields themselves or in the hedgerows between the fields, certainly do not tend to increase the productiveness of the land they overshadow, and where the surrounding conditions admit of it their numbers should be kept within such bounds as will be just sufficient to relieve the dreariness of a treeless landscape. In this, however, meeting his wishes the occupier should be very clearly made to understand that under no pretence whatever, would he be allowed to interfere with what timber remained, either in lopping, or in that very favourite amusement of driving nails into the boles of standing trees in lieu of posts. This extremely interesting and time-honoured abuse would chiefly occur where the side of the cultivated field was next to pasture land, or by the side of a public or private roadway. This assumes wider dimensions where trees grow between pasture fields, and the fences have to be kept intact. Bad, however, as this is, the lopping part is by far the more serious, as the ruin of thousands of trees, both as regards their ornamental and marketable value, is being annually accomplished through this pernicious practice being allowed to go on unchecked. There are, of course cases where there is no alternative but to lop off overhanging limbs—for instance, by the side of highways. This, if done carefully and neatly, and if the limb be removed as nearly as possible to the body of the tree, will only result in a single sound knot, and the operation will not need to be repeated. It is the senseless habit of continual lopping which is so lamentable, and which has so much to do with the relatively small prices obtainable for what would otherwise be good lots of hedgerow timber.

Pastures and Meadows.—I must now say a word with regard to pastures and meadows, as here the conditions are so different, and it is chiefly upon the fences which surround land of this nature, that we

have to depend for the bulk of this class of timber—in other words, for our supply of Elm. On all soils suited to it, in and around grass fields, the growth of the Elm should be encouraged. There may, perhaps, be some objection to such trees, as the Ash and the Oak being largely grown upon grass lands, as the pasturage underneath is not improved by their presence. Fortunately there is no necessity for their being largely cultivated in these positions, as both of them produce clearer timber when grown collectively in woods and coppices. The Elm, however, is peculiarly the field and hedgerow tree, as it springs naturally from the soil; produces the most useful timber when partially or entirely isolated, and its leaves act as a manure to the grass underneath it.

How to Improve Hedgerows.—It can no doubt be said with truth that there is a great deal of Elm standing in our English fields and hedgerows which is neither good nor useful, but, whilst conceding this, I must point out that it is largely due to preventable causes. It arises from neglect on the one hand, and ignorant manipulation on the other. It cannot be expected that, in the case of a tree to a very large extent naturally reproducing itself by means of suckers, that no attention whatever will be necessary to preserve and direct, when small, the growth of the most promising young trees, and to remove the weaker and unnecessary ones, which, if left in existence, would only overcrowd and hamper the progress of what would, in due course, become good timber trees. The experience needful to make this selection properly is not difficult to gain by careful observation. Not unfrequently two or more large and thriving trees may be found upon a space which may almost be reckoned by inches. The great thing to be regarded when trees are starting into growth at close quarters like this is that each is equally vigorous, and has a fair chance of keeping pace with its neighbour. When trees are growing thus in close proximity, and it becomes clear that one or more is losing ground and is becoming dwarfed and stunted, the sooner it is removed the better. Where many years have been allowed to pass without attention to this important matter, much may be done even now to remedy the neglect. It cannot, however, be so easy or so satisfactory as a periodical inspection when the trees are young. By ignorant manipulation or interference I mean the plan of lopping of which I have spoken, and also the nailing, both very reprehensible practices.

In closing I would remark, that even when a slight loss occurs in crop, before removing a tree its prospective value should be weighed against any damage it may be, or supposed to be, doing. The consideration, too, of what our English landscape would be without its fairest ornament has its practical as well as sentimental side. *D. J. Yeø, Lyneham, Wilts.*

PLANTS AND THEIR CULTURE.

EPACRIS.—To prolong the season of these useful plants, a portion of the stock may be hastened by giving it a few degrees more heat, selecting those with the flower-buds well advanced; strong forcing should however not be practised, or the flowers would lose in colour and substance, and much of their lasting properties when cut. A temperature of about 55° will be sufficient, by which, with a good light, airy position, flowers of fine quality may be produced. With an increase of temperature more water will be required, and it may occasionally be tinged with weak liquid manure, but the *Epacris* dislikes strong doses of manure as well as any superabundance of water at the root, the latter evil showing itself by falling leaves and poor flowers. At present the main stock of plants should be in a night temperature of not less than 45°; and great care should be exercised in watering the plants. They do best when the soil is kept uniformly moist, without being wet; and this condition of the soil it is not difficult to maintain if the drainage be good, and the soil firm, yet elastic.

Epiphyllums.—Those which are now resting after finishing their growth may, if required, be moved into warmer quarters, where with little further attention their flowers will soon expand. A shelf near the glass in a warm pit is the best position to bring them on, and if it be moderately moist, the plants will require but little water at

the root, and the flowers will open without any fresh growth being made—which is very desirable. As soon as the flowers are well expanded, remove the plants to a cooler and airier atmosphere. Small well-flowered pieces may be cut from the plants and used as miniature plants for table or other decorations. Such pieces need not be sacrificed, as after the flowers have faded they can be used to increase the stock of plants, either to be grown on their own roots or grafted on the *Pereskia aculeata* or other stock. The main batch of plants will be safe if kept rather dry at a temperature of 45°–50° for the present.

Stephanotis floribunda. The present is a good season to thin out and cut away all weak and superfluous growths, cleaning and putting in order the plants for the next season. Where *Stephanotis* is grown as a plant in a pot, it sometimes does not flower satisfactorily. Of course this may arise from various causes, and one of the most frequent is that of not giving the plants a proper period of rest, but by keeping them in a warm moist house, they are more or less kept in a growing condition, with the result of much weak growth. The plants do not then flower so freely, and, indeed, I have found the plant flowers best when kept rather dry in winter, and in a temperature of 50° to 55°. This is more easily done with pot plants than with those planted out in a stove.

Stocks.—East Lothian Stocks when grown for winter flowering are scarcely excelled by any other plants. Those which were sown late and grown in pots for this purpose should be potted on as they require it, using sound loam with a little leaf-mould and sand. The best place to grow the plants is a cool frame with a rather steep-pitched roof, the pots to be plunged in cinders. Here, with attention to ventilation, the plants may stand during the winter, and may be drawn upon as occasion requires. For indoor work the white variety is generally preferred, and a scarlet form is also very good. *F. Ross, Bletchingley.*

THE HARDY FRUIT GARDEN.

BUSH FRUITS.—When large quantities of fruits of Currants, Gooseberries, and Raspberries are required by the household, it is of importance that new plantations be made from time to time; therefore, when a break of bushes or canes begins to show signs of becoming worn out, a corresponding area should be planted with young bushes of stools without loss of time, and when these come into bearing the old plantation may be grubbed up. In small gardens the bush fruits are best when planted in quarters by themselves, as they can then be protected from the birds more economically than when distributed about the garden.

Currants and Gooseberries succeed in almost any kind of soil, but the Black Currant prefers one that is rather retentive, and a position that is shady and cool.

For Raspberries the ground should be heavily manured and trenched previous to planting; but the spade should not be allowed to be used amongst the plants afterwards for fear of destroying the roots near the surface. The autumn-bearing varieties are best planted so that they can be trained to a trellis, which may consist of four horizontal wires made secure at each end to iron or oaken posts. The height of the post needs not to exceed 5 feet.

The distances at which Gooseberry and Currant bushes may be planted are 5 feet between the bushes, and 6 feet between the rows; and Raspberries at 3 feet from stool to stool, and 5 feet between the rows. The best varieties for planting, taking Gooseberries first, are:—

Red varieties.—Whinham's Industry, Ironmonger, Nutmeg, Talfourd, Speedwell, Rough Red, Scotch, Warrington, Champagne, Slaughterman, Crown Bob, and Rifleman.

White, yellow, and green varieties.—Whitesmith, Transparent, Green Walnut, Pitmaston Green Gage, Champagne, Catherine, Criterion, Leader, Rubbullion, Ringer, and Yellow Ball.

Of Currants, Raby Castle, Cherry, Dutch, and Gloire de Versailles are the best reds; and the best whites are Transparent and Dutch. The best black varieties are Naples, Lee's Prolific, and Carter's Champion.

Of Raspberries, Baumforth's Seedling, Lord Beaconsfield, Carter's Prolific, Fillbasket, and Fastolf are the best red varieties; and the best yellow is the

Antwerp. The two best autumnal varieties are October Red and Belle de Fontenay. The first-named bears medium-sized fruits, very rich in flavour, and on that account of use in the dessert. The fruit of the last-named is very large, of a dark colour, and with some acidity, and consequently of much culinary value where Currants are kept till late.

A few red and white Currants should if possible be planted on a northern aspect, and for this purpose the White Dutch and Raby Castle Red are the two best varieties to plant.

Planting.—This should be pushed on without loss of time and while the mild weather lasts. Examine the roots of bought-in plants, and trim off the ends of all those that are broken or much bruised, and give them a mud bath if found to be dry. Avoid planting too deeply, but plant as near to the surface as is consistent with safety. In planting, spread the roots out at various depths, work some small quantity of fresh soil amongst them, giving the bush a gentle shake to and fro as the work proceeds, afterwards treading the soil firmly and evenly. A mulch of half-decayed manure may then be spread over the ground. All young stuff should have some temporary support to which the stem or canes may be loosely fixed to prevent wind-waving, the final tying being left till the spring months. Trees on walls should have the largest branches likewise loosely fastened to the same. *A. Ward, Stoke Edith Park.*

FRUITS UNDER GLASS.

THE PINE-APPLE.—Fruiters should be kept at a night temperature of 65° to 70° according to the weather—if cold and windy let the lower figure be taken. Where any difficulty is experienced in maintaining the requisite temperature, a covering of Frigi Domo, or mats, should be used; the former is the handiest, and best. Allow a day temperature of 10° higher, and 5° more with sun-heat. Keep the bottom-heat steadily at 90°; examine the plants once a week, and water only such as are found to be dry. When the fruit is half coloured give no more water to the plant until the fruit is cut. Let the atmospheric moisture be wholly supplied by sprinkling the paths and surface of the beds, the vapour pans being at this season entirely dispensed with.

Early Fruiters.—A selection should be made from those plants which have been at rest for the past few weeks, and the selected plants plunged in the compartment prepared for their reception about the end of the month. In choosing those which are most likely to start without making any growth, it will be found that those which have the shortest leaves in the centre, and in which the latter is spread open, and which are thickest at the collars, will start into fruit the more certainly. A few of the short leaves may be removed from the collar, and the surface-soil pricked over with a sharp-pointed stick and removed down to the roots. Have in readiness some fibry loam to which a fair proportion of Thomson's manure has been added, and squeeze this firmly round the collars and over the surface of the ball, leaving about 1½ inch in depth for water. The bottom-heat for these plants may not exceed 90°, nor be less than 85°, when the plants are plunged in the hotbed, a good soaking of water should be afforded them at a temperature of 90°, and unless the weather be such as to entail hard firing no more need be given until the plants are in flower. Do not syringe the plants overhead, but maintain a nice moist state of the air by sprinkling the paths and other surfaces. Let the night temperature be 65° or 70°, according to the state of the weather, 80° by day with 5° increase with sun-heat, when air should be admitted. Shut up about 1 p.m., and afterwards allow the temperature to run up to 95°. The fruiters to be started about the middle of the month of February should at present be kept at rest, and air admitted to them at all suitable times. For a night temperature 55° to 60°; by day 65° to 70° with sun-heat, and ventilation in fine weather.

Succession Stock should be examined once a week, to see that no plant suffers from an over-dry state of the soil. The watering must be done with care, using clear water. The night temperature should be kept at from 55° to 60°. Suckers recently shifted which are still growing, must be very carefully tended and all growth, as far as circumstances will permit, should be discouraged; bottom-heat of 85°, and a night temperature of 60° to 65° will be sufficient for them. *W. M. Baillie, Luton Hco.*

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APPOINTMENTS FOR THE ENSUING WEEK.

MEETINGS.

WEDNESDAY, DEC. 5 { National Chrysanthemum Society :
Floral Committee.

THURSDAY DEC. 6—Linnæan Society.

SALES.

MONDAY, DEC. 3 { Dutch Bulbs, at Stevens' Rooms.
Dutch Bulbs, at Protheroe & Morris' Rooms.
Bulbs, Lily of the Valley, &c., at Smail's Rooms.

TUESDAY, DEC. 4 { Nursery Stock, from sample, at Protheroe & Morris' Rooms.

WEDNESDAY, DEC. 5 { Roses, Fruit Trees, Shrubs, Border Plants, and Dutch Bulbs, at Stevens' Rooms.
Lilies from Japan, Greenhouse Plants, &c., at Protheroe & Morris' Rooms.
Dutch and other Bulbs, at Smail's Rooms.

THURSDAY, DEC. 6 { Liliun auratum and other Bulbs, at Stevens' Rooms.
Dutch Bulbs, at Protheroe & Morris' Rooms.
Plants and Effects, at the Gardens, Kelsey Manor, Beckenham, by Protheroe & Morris (two days).

FRIDAY, DEC. 7 { Hybrid Cypripediums, from the collection of R. J. Measures, Esq., and other Orchids, at Protheroe & Morris' Rooms.
Dutch and other Bulbs, at Smail's Rooms.

SATURDAY, DEC. 8 { Roses, Fruit Trees, Shrubs, Border Plants, and Dutch Bulbs, at Stevens' Rooms.
Dutch Bulbs, at Protheroe & Morris' Rooms.

thoughts, and of revising judgments made, perhaps on insufficient consideration, or imperfect evidence. Such power of revision might be exercised if the awards were always made at one meeting, subject to confirmation or rejection at the next. Again, it may be suggested that, in many cases, a sub-committee of specialists should report to the general body on the merits of plants shown for certificates, and that on the reception of their report the whole committee should vote. This plan is, we are aware, sometimes adopted now, but too often it is acted on somewhat capriciously although, it requires to be done regularly and systematically.

To avoid the unseemliness now often witnessed of a certificate being awarded on the verdict of two or three out of twenty or thirty then present, it may be suggested that no certificate should be granted unless it has gained an absolute majority of votes—that is to say, the vote of at least half of those present with one over.

The names of those present at the meetings should continue to be publicly reported, but in addition the names of the voters for or against a particular proposal should be recorded.

Again, the commercial test—if it be sanctioned at all—should at least only be applied in those cases in which it is fairly appropriate. The distinction may be difficult to formulate, but practically there would rarely, if ever, be any doubt at all upon the subject. Certain plants have, or are likely to have, a regular market-price, and may fitly be judged by those competent to form an opinion on such matters. Certain other plants have little present and possibly less prospective market value, because they cannot be, or are not likely to be, grown and propagated wholesale for commercial purposes, but only on a limited scale by amateurs.

The intrinsic interest and value of this last class of plants can only be indirectly estimated in pounds, shillings, and pence. That, however, affords no reason why they should be lightly esteemed by a society representing all departments of horticulture. Rather may we not say with truth, that commercial interests need no encouragement from the Society? The most important duty the Society has to fulfil is, on the other hand, to foster the interests of the science and art of horticulture generally, and specially as illustrated by the class of plants we have in view.

Bearing these things in mind, it may further be suggested that in all cases the grounds on which the certificate is awarded should be recorded. A First-class Botanical Certificate should, at least, rank as high as a First-class Floral or Fruit Certificate, though granted for a different purpose. As it is, Certificates by the dozen are awarded to Chrysanthemums, Dahlias, or other already well-known and popular florists' flowers, of which we have thousands already, while either no award at all, or, at least, no higher form of award is granted to novelties of far greater importance and rarity.

Take, for the sake of illustration, the Begonias. First-class Certificates are awarded to new varieties, year after year, and will continue to be awarded as long as the "improvement" continues. There is, of course, no objection to be raised to the judicious maintenance of this practice; our point is, that the original plants B. Veitchii, B. boliviensis, &c., when first introduced could have gained no higher award. Plants of that character when first exhibited are often treated as mere botanical curiosities, and either passed over or awarded a Botanical Certificate. This award, by some people, is looked on rather as a badge of dis-

honour than as a mark of distinction, and yet on consideration there is no one who will not see that the importance, even from a commercial point of view, of the original introduction, must be higher than that of the offspring from it.

The two classes of plants should, in fact, not be looked at from the same point of view, but each should be treated according to its merits, and the Botanical Certificate should take, at least, equal rank with the other. As it is impossible to make people appreciate things by telling them they ought to do so, we suggest that newly introduced plants, new hybrids, and, in fact, all plants not yet in commerce, and not belonging to groups in general cultivation, should be subjected to the examination of a special sub-committee of experts, chosen from any or all the three committees, and who should be empowered to grant Botanical Certificates. After all, much must depend on the wide, if not necessarily deep knowledge, of the chairman, his broad sympathies and his tact.

PINUS PINEA.—The following notes sent by Mr. GEO. NICHOLSON, Royal Gardens, Kew, of the dimensions of the specimen at Kew, figured in our last week's issue, may be of interest. Height about 35 feet, spread of branches 40 feet, girth of stem at 4 feet from the ground, 6 feet. Mr. NICHOLSON continues:—"I regret I am unable to give any details as to the age or history of this particular tree. With regard to the two forms of leaves which are not unfrequently produced by some trees, it might be as well to refer those interested in the subject to the figure published in these columns for July 14, 1883, p. 45—which gives a better idea of this peculiarity than any description. In an interesting account of the juvenile forms of Conifers—a *resumé* of which is given by Mr. HEMSLEY in the *Gardeners' Chronicle* of March 12, 1881, p. 333—published in REGEL'S *Gartenflora* for December, 1880, by Herr W. HOCHSTETTER, the Superintendent of the Royal Gardens, at Tübingen, that writer informs us that he has succeeded in fixing the juvenile forms of P. Pinea and P. canariensis by cuttings. They form 'incomparably beautiful' bushes, with spirally arranged solitary needles."

SOCIETY OF AMERICAN FLORISTS.—We have now before us the report of the fourth annual convention, held at New York in August last. The gathering was evidently a successful one, and the record is both amusing and instructive. To our taste there is too much "voicing" in the report, and many things that doubtless were appropriate and effective at the time seem to us not worth reproducing in type. But tastes differ, and while the Americans are mostly good speakers, we "er—er—er" so much, as to have provoked the just sarcasm, that we of all people best illustrate the truth of the statement that to err is human!

EEL WORMS.—Much destruction is done to Cucumbers by the lodgment in the roots of minute worms. It is not only the Cucumbers that are affected but many other plants, while the leaves of cereals, of Carnations, and even of Orchids, are affected by creatures of this description. Dr. CHARLTON BASTIAN some years since published an elaborate treatise on the species and varieties; and certain Dutch naturalists have taken up the work. Dr. J. RITZEMA Bos is the latest of these, and he has just published a treatise in French on the "Anguillule de la Tige" (*Tylenatrix devastatrix*), and on the disease it produces. This worm occurs in the stems and leaves of various plants, but never in the roots. It is curious but satisfactory to read that decomposing organic matter, such as farmyard manure, acts injuriously on the creatures. A 1 per cent. solution of carbolic acid kills the creatures, as also certain other acids and caustic potash, all used at a strength of 1 per cent. Dr. Bos treats in succession of the disease in Barley, Onions, and Hyacinths.

Certificates at the Royal Horticultural Society.

AMONG the many points which require the consideration of horticulturists in the thorough revision that is now going on is the system followed in granting certificates by the Floral Committee. These are now sought after for their commercial value—a matter of great importance to the trader, but one in which the Society, as such, has, or ought to have, no concern. The commercial value of a plant is something outside the Society's purview; still we must take things as we find them, and endeavour to amend them as best we may. Under existing circumstances it often happens that a certificate is granted on the award of a very small proportion of those present, the majority not voting. Frequently also it happens that a multiplicity of certificates is awarded to the same set of plants—say Dahlias, or florists' flowers generally—especially at the beginning of a meeting where one or two only would be adequate. Various methods of counteracting the injurious effects arising from this unsystematic and profuse certificate granting may be suggested. One is, that some means should be allowed to give the committee the power of indulging in second



NATIONAL CHRYSANTHEMUM SOCIETY: Nov.

21.—A meeting of the Floral Committee was held at the Royal Aquarium on this day. Mr. E. SANDERSON in the chair, there being a good attendance of members. At the outset of the proceedings the following resolution was unanimously passed:—"That a protest be entered against a system that has been, and is still adopted by certain exhibitors, of sending up for adjudication flowers that have been re-named since imported." First-class Certificates of Merit were awarded to Miss M. A. Haggas; a golden sport from Mrs. Heale, an incurved flower of the finest quality that promises to take a high place as an exhibition variety, shown by Messrs. DAVIS & JONES of Camberwell, but obtained by Mr. T. E. HAGGAS, of Keighley, Yorkshire. To L'Automne, an incurved variety, said to be raised by a French amateur cultivator, the colour a charming shade of buff, with broad florets well arranged, and forming a full and handsome symmetrical flower. Shown by Mr. G. S. ADDISON, of Thornton Heath. To Alcion (reflexed Japanese), rosy-carmine, with a bright silvery reverse—a good sized full flower, of decided promise; from Messrs. H. CANNELL & SONS, Swanley. To Miss Wheeler, a Japanese variety of American origin, in the way of Edwin Molyneux, but not so good, though of much distinctness of character; the florets crimson, with a golden reverse; from Mr. T. BETTESWORTH, Burton Grange, Cheshunt. From Mr. RIDOUT, gr. to T. B. HARWOOD, Esq., Woodhatch, Reigate, came large Anemone-flowered La Margaret, dull purple—a distinct and symmetrical variety. From Messrs. JAMES VEITCH & SON, Royal Exotic Nurseries, Chelsea, came several new Japanese varieties, mainly raised by Mr. ALFRED SALTER, William Elliott, Mrs. H. Thompson, and Europe being the most promising. Messrs. DROVER, nurserymen, Fareham, had large Anemone-flowered Nilson, bright rosy-crimson, new in colour, and a very strong grower. Messrs. CANNELL & SONS had several new Japanese varieties, such as Unko and Mons. Baco, which the committee desired to see again. A stand of blooms of the useful white Japanese Florence Piercy came from Mr. HOOKINGS, gr. to Sir W. THOMPSON, West Moulsey; it promises to make a very acceptable mid-season variety. A sport from Ralph Brocklebank, a pale yellow Japanese variety, named Mrs. Bevan Edwards, came from Mr. BROCKLEBANK, gr. to R. BROCKLEBANK, Esq., Childwall Hall, Liverpool; it is of a rather deeper shade than the variety from which it is sported; the latter is itself a sport from the white Meg Merrilies. The Japanese, like the incurved varieties, are being somewhat largely added to by means of sports.

ROTHAMSTED AND ITS WORK.—The *Pall Mall Gazette*, under date November 22, has a portrait of Sir J. B. LAWES, Bart., and gives a short *resumé* of the work that is being carried on at Rothamsted, and says:—"Whoever seeks to learn of the marvellous workings of plant-life in all its forms must look for inspiration and guidance to the world-famous laboratory at the little Hertfordshire town" (Harpenden).

"THE NATIVE FLOWERS OF NEW ZEALAND."

—We have already had occasion to mention this work, and have now to announce its completion with the third part. The portraits are faithful representations, well drawn and not exaggerated as to colour, but the absence of botanical detail either in the plates or in the text detracts very materially from their value. New Zealand plants have a *facies* or appearance of their own recognisable even in dried specimens, but which cannot be reproduced by the brush of the artist, still less described in words. The only means of appreciating this is to cultivate the plants, and fortunately many New Zealand plants, such as *Veronica Traversii*, *V. Hulkeana*, *Olearias*, and many others are hardy, in ordinary winters in most parts of England, while in the south-west and in the corresponding districts of Ireland the greater part of the New Zealand flora might be grown. The present work will, we hope, stimulate many of our plant lovers to grow many of the beau-

tiful representatives of the New Zealand flora. Mrs. HETLEY's drawings have been reproduced in chromolithography by Messrs. LEIGHTON; and her book, which is dedicated to the QUEEN, is published by Sampson Low & Co. We trust that the authoress may achieve such a measure of success as will induce her to continue her useful labour, for Sir JOSEPH HOOKER's *New Zealand Flora* is, we believe, not to be had except fortuitously, and must in any case be costly. With Sir JOSEPH HOOKER's smaller handbook and a good series of plates a very complete idea of the New Zealand flora might be obtained.

PARIS EXHIBITION, 1889.—One of the horticultural attractions at this will be the exhibit of Brazil. A pavilion is to be erected, and to be kept furnished during the exhibition with Brazilian Orchids in flower, among which are several of the most beautiful. The contract for the plants has been given to The Horticulture Internationale (Messrs. LINDEN) of Brussels.

PENZANCE CHRYSANTHEMUM.—The first show of this Society was held on the 21st ult. Competition was slack in several classes, and the 1st withheld. Groups, &c., were good, Mrs. HARVEY generally leading, and Mr. W. THOMAS was also successful, the latter having the best cut blooms. Messrs. SIMPSON and POPPIN were the chief amateurs. Vases, table decorations, &c. (ladies only) were keenly contested, and fruit was shown by Messrs. T. S. BOLETHO and E. BOLETHO.

STOCK-TAKING: OCTOBER.—The following is extracted from the tabulated summary of imports from foreign countries and British possessions for the month of October, published in the "Trade and Navigation Returns" by the Board of Trade:—

	1887.	1888.	Difference.
	£.	£.	£.
§ II.—(A.) Articles of food and drink—duty free	9,536,918	12,359,622	+2,823,604
(B.)—do., dutiable	3,262,676	2,805,500	—457,176
§ VI.—Raw materials for textile manufactures (including Flax, Hemp, and Jute)	1,956,481	1,883,044	—73,437
§ VII.—Raw materials for sundry industries and manufactures (including wood and timber, hewn, sawn, split, dressed; vegetable materials, for paper-making, &c.)	3,337,188	4,157,309	+819,811
§ IX.—Miscellaneous articles (including Clover, Grass, Flax, Rape, Linseed)	1,180,110	1,119,560	—60,880
Total value of imports	30,551,397	35,022,135	+4,471,828

The following are a few excerpts from the immense mass of figures covered by the summary:—

	1887.	1888.	Difference.
§ II. Fruit:—			
Apples, raw bush.	333,614	779,572	+425,958
Unenumerated, raw	661,380	709,549	+48,169
Onions	112,361	586,331	+473,970
Potatoes cwt.	76,632	61,311	—15,321
Vegetables, raw, unenumerated Value	£10,773	£51,166	+£40,393

The above figures, it is apparent, supply their own commentary to the appreciative reader.

THE NEW PALM-STOVE IN THE JARDIN DES PLANTES, PARIS.—There are, it appears, some matters which they do not "order better in France." The *Jardin* has a severe criticism on the new house, which, it appears, has been seven years in construction, and is, according to competent critics, a costly failure quite unsuited for its purpose of growing plants. A similar misfortune is of not infrequent occurrence where the construction of a conservatory is entrusted to the architect. The new building is

very massive, built upon arches, upon which the soil is to be placed. Regulation of heat, light, ventilation, and moisture—points of cardinal importance in the cultivation of plants—seem to have received very inadequate consideration, and the remonstrances of three successive Directors, *professeurs de culture*, unheeded.

"L'ORCHIDIENNE."—The second meeting of this Society was held on November 11, at Brussels. There were fifty-five plants contributed on this occasion. Messrs. Mocus, Massange de Louvreux, Miteau, Wallaert (Secretary), and J. Linden (Chairman), with others, formed the Jury, and the awards were:—First-class Certificates to *Cypripedium Harrisianum polychromum*, from Dr. Carnus; to *Ansellia africana aurea*, from Madame Gibez; to *Oncidium Forbesii maximum*, from the Count of Bousies; to *Vanda cœrulea* and *Cypripedium callosum*, from Madame de Cannart d'Hamale; and to *Cypripedium nitens superbum*, from Mr. Peeters. Second-class Certificates to *Zygopetalum crinitum cœrulescens*, from Madame Gibez; to *Oncidium Marshallianum* and *Odontoglossum grande fastuosum*, from Mr. Linden; to *Cypripedium Chantini* and *Epidendrum sceptrum*, from Madame de Cannart d'Hamale; to *Cypripedium tessellatum porphyreum*, from Mr. Peeters; to *Oncidium cheiroporum*, from Mr. Miteau; and to *Cypripedium Chantini atratum*, from Ms. Wallaert. First-class Cultural Certificates to *Cypripedium Harrisianum*, from Mr. Moens; and to *C. Harrisianum*, from Mr. Peeters.

LINNEAN SOCIETY.—On Thursday, December 6, the following papers will be read:—1. Dr. J. C. COSTERUS on "Malformations in *Fuchsia globosa*." 2. Mr. B. T. LOWSE on "The Development of the Egg and Blastoderm of the Blow-fly." 3. Mr. G. A. BOULENGER on "The Reptiles and Fishes of Fernando Noronha."

BOLTON CHRYSANTHEMUM SHOW.—The second show in connection with the Bolton and District Chrysanthemum Society was held in the Bolton Town Hall, on Friday and Saturday, November 23 and 24. The exhibition, taken generally, was equal to the inaugural one, twelve months ago. There was a slight inferiority in the display of cut bloom as compared with last year, but this was counterbalanced by an increased entry in the larger classes of Chrysanthemums. A notable feature in the general collection was the abundance of fine specimens of horticulture and floriculture other than Chrysanthemums, these including a splendid Tree Fern, exhibited by Mrs. HASLAM, of Ravenswood; a *Croton Weismanni*, as a single specimen; a *Croton Hendersoni*, a *Cycas revoluta*, *Dracænas*, *Palms*, *Ericas*, and *Cyclamen persicum*. Messrs. DICKSON, BROWN & TAIT, of Manchester, exhibited a fine collection of similar plants, as well as Ferns, &c.; and Mr. J. WATKINS, of Withington, Herefordshire, exhibited a fine collection of Apples, consisting of seventy-five varieties. Messrs. W. CLIBRAN & SONS, of Altrincham and Manchester, offered for inspection a splendid collection of Chrysanthemum cut bloom in all varieties.

CHORLEY CHRYSANTHEMUM SHOW: Nov. 23 and 24.—The fifth exhibition was held in the Assembly-room of the Town Hall. Groups were very pretty; one of these was from Mr. G. Parks, gr. to Lieut.-Colonel Ffarington, of Wigan, who has carried off the prizes for this class at every exhibition the Society has held. The collection comprised fine *Crotans* and *Azaleas*. Mr. J. Rose, gr. to W. Simpson, Esq., Wigan, had a fine group of Chrysanthemums in variety. The cut blooms on the stands were of a superior order, and came in for much admiration. Mr. Kirkman, gr. to J. Stanning, Esq., Broadfield, Leyland, sending the best eighteen. The Orchids comprised some excellent plants, those shown by Mr. J. Eckersley being fine. Fruit was not numerous, but some black and white Grapes, shown by Mr. Middleton, gr. to R. Pilkington, Esq., Rainford Hall, were remarkably fine.

This exhibitor had a close competitor in Mr. W. Smith, gr. to J. Whitehead, Esq., Duxbury Hall. Among Apples, a fine group for culinary purposes was exhibited by Mr. Kirkman, and a collection of Apples came from Mr. John Watkins, Withington, not for competition. The vegetables were not numerous, but some fine Cauliflowers and Potatoes were shown. The amateur exhibits were very creditable.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.—A legacy of £50 has been bequeathed to this Institution by the late Mrs. SARAH CAMERON, who was the widow of the late Mr. GEORGE CAMERON, for many years the respected head gardener to the Duke of Richmond, at Goodwood Park, Sussex. He was a life member of the Institution, and died in 1870.

NATIONAL ROSE SOCIETY.—The annual meeting of this Society will be held at the rooms of the Horticultural Club, Hotel Windsor, Victoria Street, Westminster, on Thursday, December 6, at 3 P.M., for the purpose of receiving the Treasurers' accounts, electing officers for the ensuing year, sanctioning the arrangements for 1889, and general business. The annual dinner will take place the same evening at 6 P.M. at the same place. The chair will be taken by Dr. ROBERT HOGG, one of the Vice-Presidents of the Society, and a large attendance of members is expected.

HARTLEPOOL SHOW: Nov. 28 and 29.—The first annual exhibition of this newly-formed Society far exceeded the expectations of the committee. The chief exhibitors and prize-takers were Messrs. J. Short, Darlington; T. Pattison, A. Taylor, Robert Pool, Rink Gardens, West Hartlepool; J. Hall, gr. to Alderman George Pym, J.P.; Maunders Bros., Seaton Carew; T. Gibbon, George Prince, W. Snowball, B. C. Laycock, W. M. Burns, and J. Bainbridge, all of West Hartlepool. There were also miscellaneous collections of cut flowers, fruits, and vegetables.

ROSES.

NEW ROSES.

It may perhaps be of interest to supplement "Wild Rose's" account of new Roses in 1888 (pp. 206-7), with a few notes on some additional varieties not therein mentioned, but which, nevertheless, appear likely to prove valuable. There is now little doubt that both this year and last will be recorded as considerably above the average in the novelties of interest distributed, and may compensate for the great dearth of Continental addition of value during the two previous seasons. The varieties generally distributed in this country for the first time last spring, include some very attractive Roses, and on the principle of last come first served, shall head the list:—

Germaine Caillet (Pernet fils-Ducher).—This beautiful Rose was figured in the *Journal des Roses* just a year ago, and the plate, allowing for the tendency in France to figure Roses in a state that, in this country, would be considered rather too full-blown, is one of the best that has been published in M. Scipion Cochet's periodical, and gives a very good idea of the erect habit, the beautiful colour, and the texture of the substantial petals of this most promising novelty. The reputed offspring of Baroness Rothschild and Madame Falcot (a cross, by the way, from which all these French hybrid Teas seem to be raised), Germaine Caillet follows the former in a robust, erect habit of growth, and in having abundant foliage right up to the flower-buds. The flowers are large, full, well-formed, and of a most delicate flesh-colour; and, judging from blooms seen under glass in the spring, and out-of-doors this autumn, the variety may be described as quite first-rate.

Gloire de Margottin (Margottin).—This brilliant hybrid perpetual has certainly a great many merits, even if the question of its availability for exhibition be regarded as an open one. On this point even, a favourable opinion has lately been expressed by a great authority, and for the rest, the variety is vigorous, free, perpetual, forces most easily, and has fragrant flowers of the most brilliant crimson colour.

Gloire des Polyantha (Guillot).—A very beautiful miniature pink Rose, raised from Mignonette, upon which it is a great improvement. It makes a most charming early forcing Rose in pots, and to plants so grown and exhibited by Messrs. Paul & Son, of Cheshunt, a First-class Certificate was awarded by the Royal Horticultural Society.

Golden Fairy (Bennett).—An addition to the pretty miniature ever-blooming Polyantha Roses, which, if its habit of growth be more compact and bushy than that of *Perle d'Or*, will be valuable, the flowers being of a similar tawny orange colour.

Henriette de Beauvau (Lacharme).—This, a climbing Dijon Tea, recalling in its deep red stems and dark foliage, Levet's Madame Eugène Verdier. The flowers are clear yellow, of good size and form, and the variety is likely to be useful both for exhibition and as a vigorous climber.

Kronprinzessin Victoria (Vollert).—This Bourbon comes from Germany, and is said to be a sport from *Souvenir de la Malmaison*. The flowers are very pretty, especially in bud and half-expanded, of a pale lemon tint deeper in the centre, but becoming nearly white in the full-bloom flower. It is recommended for forcing, and certainly was charming under glass in the spring, as it has been since out-of-doors.

Laurette Messing (Guillot).—Only a China Rose, but so bright and pretty in colour as to be well worth growing. Most free and perpetual, the colour being of the brightest rose with a yellow shade in the centre of the flower—invaluable for bedding.

L'Idéal (Nabonnand).—This vigorous Noisette has been likened in a general way to William Allen Richardson, but the flowers are not of a self-colour as in that popular variety. Rose, yellow, and orange are among the mingled shades of the strikingly tinted flowers which in the bud state, will be in great demand for cutting. The plant is a climber, and a thorough autumnal Rose.

Madame Hoste (Guillot).—A beautiful Tea scented Rose that is likely to maintain the reputation of its celebrated raiser. The plant is vigorous and free, the flowers large, well formed, and of a delicate pale lemon shade, while they are carried erect, and abundantly produced in autumn. The firm of Guillot have raised and sent out many of the most beautiful of all the Teas, and there seems every probability that it will be amongst these that Madame Hoste will rank.

Princess de Sagan.—(Dubreuil).—A most brilliant crimson Tea, flowering abundantly early and late. If only the flowers can be grown large enough for exhibition, this variety will make a most striking addition in a box of Teas and Noisettes, for there is nothing dull or heavy about the colour, and the plant is a pure Tea.

Red Pet (Parker).—A China Rose that is always covered with rich crimson flowers of good form, though not individually very large. The colour becomes especially rich in autumn, and the variety is admirably adapted for bedding.

Of the Roses sent out the previous year it will probably prove that the hybrid perpetuals of value will exceed the Tea-scented varieties, although the latter are not by any means lacking in interest.

Château des Bergeries (Ledecheux).—A pretty pale yellow Tea, growing well, and blooming freely, with flowers of good size and form. Some capital blooms of it were produced early in the season.

Claudine Perreau (Lambert) may be described as an erect-growing *Souvenir d'un Ami*, the globular rosy flowers being produced with very stiff stems upon a vigorous bushy plant, which is always well clothed with handsome foliage.

Comte de Paris (Lévéque).—A very promising rich crimson hybrid perpetual, with large, well-formed flowers; very free, of a vigorous habit of growth, and thoroughly perpetual.

Dr. Antonin Joly (Besson).—One of three probably valuable additions to the salmon-rose colours, of which the flowers are very large, full, and abundantly produced.

Dr. Grill (Ronnaire).—A most free-blooming and

charming tawny-orange Tea-scented Rose, whose flowers are well formed, and of good size. One of the prettiest of the French Tees of its year.

Madame Bois (C. Levet).—A Rose of Victor Verdier race, but fragrant, more vigorous than the type, and producing most freely very fine flowers of great depth, and with a magnificent petal, bright, fresh salmon-rose colour. A novelty that has been greatly admired in the garden in spite of the bad weather, and from which there were cut many beautiful blooms early in June.

Madame Desir (Pernet père).—Somewhat in the same line of colour as the preceding, but a Rose of very great fulness, that will be seen to greater advantage in a hotter season than the past.

Madame Edouard de Bonnières de Wierre (Lévéque) is a handsome and free dark-crimson hybrid perpetual, well formed, vigorous, and a free autumnal. Its chief fault lies in its name, which wants "editing." It has been suggested that Madame de Wierre should be adopted as a more reasonable and a sufficient appellation, and it may be hoped that the suggestion will be acted upon.

Madame Etienne (Bernaix).—Another rosy Tea of considerable promise, that seemed likely at one time to prove the best Tea of its year. The plant is perhaps rather lacking in vigour, but the flowers are of good size, well formed, and distinct.

Madame Henri Percire (Vilin) was one of the most conspicuous of the newer Roses at the exhibitions this year, being frequently very finely shown by Messrs. Paul & Son, of Cheshunt. The flowers are large, and very rich in colour, being of a deep velvety crimson, shaded with almost black, while the plant grows vigorously, and blooms well in autumn, and is beyond question a very striking variety.

Madame Joseph Debois (Guillot).—A most beautiful and refined variety of the highest type of beauty, the flowers being large, erect, pure white shaded with carnation in the centre, and freely produced both early and late. The plant is not a tall grower, but has the robust stiff growth of the Captain Christy race, and appears certain in a fine season to take a prominent position as a first-rate exhibition Rose.

Madame Treve-Marie (Liabaud).—A flower of the form of Marie Baumann—not so fine, but carried erect, very free, and of a charming shade of fresh rose colour, that proves attractive to almost everybody. Probably the best Rose sent out by its raiser since Madame Gabriel Luizet, ten years before.

These are the pick of the 1886-87 Roses, and with those previously described by "Wild Rose," must be held to constitute the most promising lot of novelties sent out for several seasons.

Of the 1885-86 varieties, Max Singer (Lacharme), said to be a seedling from *Rosa multiflora* and General Jacqueminot, is a very useful red, climbing Rose, producing throughout the season endless trusses of well-formed bright cherry-coloured flowers. Presumably "Wild Rose" considers it unnecessary to mention *The Bride*, of the same date, as being already generally known and admired; but it is worth noting that this Rose, the most valuable contribution that has yet been made by America, is already regarded as one of the best twelve varieties of all the Teas and Noisettes.

"Wild Rose's" remarks about the other Roses sent from America, and about *Pride of Reigate*, may be fully endorsed, as well as his recommendation of *Gloire Lyonnaise* (Guillot, 1883), Victor Hugo (Schwartz, 1884), Lord Bacon (Wm. Paul, 1882), especially valuable in the North, *Susanne-Marie Rhodocanachi* (Lévéque, 1883), a charming Rose that has become very popular; *Comtesse de Frigineuse* (Guillot, 1885), *Souvenir de Gabrielle Drevet* (Guillot, 1884), and *Viscountess Folkestone* (Bennett, 1886), a most lovely Rose, whose delicate flesh-coloured flowers, of great size and beauty, and of delicious fragrance, combined with a vigorous and ever-blooming habit, have already secured it almost universal admiration, and render it a Rose for everyone to grow, whether for its beauty in the garden, for cutting, for forcing, or for exhibition. Its con-

stancy, great size, and fine form will ensure its being in constant demand for the last-named purpose, and for the rest, its ever-blooming character and fine fragrance would be almost sufficient recommendation even were its flowers less exquisite than they are, *Theta*.

FOREIGN CORRESPONDENCE.

PINES AT RAVENNA.

I was at Ravenna for the second time some four years ago, and found not a single tree alive, bleached trunks in profusion, but no seedlings—as you suggested might be coming up. There is little chance of the forest being re-established, as the sandy soil is favourable to the formation of vineyards and not propitious for Phylloxera. Peasants were busy rooting up the dead trees and planting Vines. On my first visit I was struck by seeing in the forest numbers of Vines which seemed to have reverted to the wild state, and bore small sour black berries. *J. van Volvem.*

THE KITCHEN GARDEN.

In getting the soil ready for next year's crops, and which many gardens require for special crops, the aim should be, to get a soil of uniform quality and fair depth, and containing the elements necessary for successful growth. It is essential that the texture should be such that it may readily be worked in fine weather, and not liable to dry out quickly, or to retain, on the contrary, an excess of water. Therefore, the first thing to do is to obtain a good outfall for the drainage, and then lay in 2-inch drainpipes, not less than 3 feet deep, and from 12 to 20 feet apart, according to the nature of the soil, the former distance being for clay soils, and the latter for sandy. The main drain should consist of 6-inch pipes, and should have a regular fall throughout its length. This should be laid in first, and the branches arranged to join it at right angles if possible, with a good fall to the main, and before filling in the soil a good coating of small stones should be placed over the top of all the pipes to a depth of 6 inches. As a rule all soils with a subsoil of clay require draining, in order to cultivate them to the best advantage; but if they rest on gravel, sand, or are near to the rock, they are often drained enough naturally to meet all requirements. Where a so-called "pan" or concrete-like stratum is present at a short depth, this must be removed in all cases if successful cultivation is to be carried out. If drainage by pipes is from any cause impossible, much good may be done by opening drains as for pipes and making a V-shaped bottom to the trench, which may be filled with broken stones, brickbats, &c.; and if the soil be clayey fine coal-ashes, charred refuse, mortar rubbish, road grit, and burnt earth may be mixed with it—the last-named material especially adding to its fertility. Burnt earth is prepared by collecting some logs of wood with some small pieces to give the fire a good start, and when it is well alight give a good covering of turf over all, when it should be left until the fire begins to burn through at the sides; some coal refuse should then be thrown over it, and another layer of turf put on and allowed to partially burn through as before. The fire will now consume anything in the way of garden rubbish, soil, or turf, and if now carefully replenished with slack occasionally, a large heap of burnt earth will soon be made. It is a good plan to trench a portion of the kitchen garden each year, but only in very few cases is it advisable to bring the previously untouched subsoil to the top, and what is called bastard trenching is therefore that most commonly employed.

This is performed as follows:—Supposing the plot of ground to be operated on is 24 feet wide, a mark is cut down the centre with a spade, thus making two plots, each 12 feet wide. Two spaces, each 2 feet wide, are then marked off at the end of one of these plots, the good soil is then dug out clean, from the first space and deposited on the other plot of ground close at hand, or if there is room, just on one side. This saves wheeling the soil to the other end of the plot, which would have to be done if all was taken in one strip instead of two. A good dressing of manure, or whatever it is intended to be mixed with the soil, should then be spread all

over the surface for incorporating with the second spit; this layer will also often prevent the work being delayed by frost. At this season of the year especially, it is best to use all manure in a tolerably fresh state, as its manurial properties are apt to be weakened by the winter rains and snow before the ground is cropped. This having been done, the portion of manure on the next 2 feet space should be put into the trench that is open, and well worked in among the soil of the second spit; the good soil on the next space is then placed on the top of this, and the remainder treated as before. It is necessary to take especial care that each trench is of the same width as the first one, and if the plot is destined for small seeds in the spring, or the ground is adhesive in texture, it is a good plan to lay the top spit up in ridges as the work proceeds, and if any manure be considered necessary for the top spit, it may be added when the ridges are levelled down in the spring; this, however, is only required in very poor soil. By placing the bulk of the manure at the bottom of the trench the roots are induced to travel downwards, which gives the plants a better chance of growing well should the summer prove dry and warm. *W. H. Divers, Ketton Hall, Stamford.*

USEFUL INVENTIONS.

THE ORCHID FLOWER HOLDER.

It is a fact well known to growers of Orchids that the plants are liable to be much reduced in vigour through their flowers being left on them too long after they have reached maturity. The object of this simple contrivance is to enable growers to relieve their plants by cutting off the spikes, putting them in the tubes filled with water, and inserting them in a natural position in the pots. The wire being pliable, the tubes can be placed in any convenient position, so that a natural effect can be obtained by showing the flower-spikes in conjunction with the plants, at the same time relieving the latter of the heavy strain upon them.

For floral decorators the Orchid-flower holder will be found most useful, inasmuch as, being made of any length, it will enable them to arrange for the distribution of any kind of flowers, which without it could not be utilised.

FIG. 91.—ORCHID-FLOWER HOLDER.

The inventor is Captain Maxwell, of Terregles, Dumfries, and the seller is Mr. Alfred Outram, 7, Moore Park Road, Fulham, London.

ROOT SHOW AT HEXHAM.—On November 26, Messrs. W. Fell & Co., seedsmen, Hexham, held a root show. The display was very good. The results were:—For twelve Swedes, 1st, Mr. W. Charlton, Felt House, Wexford, Ireland. The heaviest nine Turnips were from Mr. J. A. Cowing, High Morley; weight, 10 stone 12 lb. Messrs. J. A. Cowing, J. Errington, Dukesfield, and W. Charlton, took other 1st prizes. Protests were lodged against the exhibits of Mr. Charlton, on the ground that the roots were not shown with the tops on, and these were upheld by the Judges so far as the classes of Swedes and Mangels were concerned. Under these circumstances the 1st prize for the best twelve Swedes was awarded to Mr. Glaister, Red Platt. A dinner in connection with the show was held.

SCOTLAND.

HORTICULTURAL LECTURES AT THE HERIOTT-WATT COLLEGE, EDINBURGH.

A course of lectures on horticulture has been instituted in the Heriot-Watt College for the session of 1888–89, to provide systematic instruction in the application of certain branches of science to the practice of gardening. The lectures are to be delivered by Mr. John Wilson, B.Sc., of St. Andrew's, at 7 o'clock every Friday evening, from the 16th ult. to March 7, 1889. These lectures should prove a great boon to the large number of young gardeners who come from the country for employment in the numerous nurseries around Edinburgh during the winter season; and the fee, 5s. for the course, is so small that they all may take advantage of it. The lectures will also afford a valuable source of instruction to the gardeners more permanently employed in and about Edinburgh. The facilities which the Heriot-Watt College affords to all who are anxious to acquire information and instruction are inestimable to young gardeners who are so fortunate as to be within reach of such a valuable institution, where all branches of modern science are taught. Along with horticulture young gardeners can take a course of botany, chemistry, geology, drawing, mathematics, languages, or, indeed, almost any branch of learning in which he may wish to be instructed.

The subjects of instruction selected for the lectures during the present session include the following:—

1. General Principles of Horticulture.
2. Seed, Germination, Root and Leaf Action, Influence of Light and Heat, Soils, Manures.
3. Propagation by Buds, Cuttings, Layers, Grafting, Inarching. Effects of Stock on Scion. Sports or Bud Variation. Formation of Flowers and Fruit.
4. General Treatment of Plants. Planting, Training, Pruning, and its Effects.
5. Landscape Gardening. Formation of Gardens; Materials and Appliances.
6. Garden Structures; Heating and Ventilating.
7. Culture of (a) Stove Plants; (b) Greenhouse Plants; (c) Ornamental Shrubs, Alpine and Herbaceous Plants; (d) Fruit under Glass; (e) Hardy Flowers; (f) Culinary Vegetables.
8. Improvement of Plants by Crossing, Hybridising, and Selection. Fertilisation. Single and Double Flowers.
9. Town or Domestic Gardening, its utility in affording a healthy recreation.
10. Diseases of Plants, their cure or prevention. Insecticides, &c.

With such an excellent variety of subjects, in the hands of a skilful lecturer the course must be both interesting and instructive, and should draw many students from all classes of society.

The opening lecture of the course was delivered by Mr. Wilson on the evening of Friday, 16th ult., and the following gentlemen were present, among others, at the inauguration:—F. Grant Ogilvie, M.A., B.Sc., Principal of the College, Bailie Walcot, R. Lindsay, Royal Botanic Garden; M. Dunn, Dalkeith; D. P. Laird, A. D. Mackenzie, A. Milne; R. Bell, Morton Hall; R. Grossart, A. Laing, and a goodly number of young men who had already entered, or intended entering, as students. The Principal having formally opened the class, introduced the lecturer to the students in a few well-chosen remarks, in which he expressed his deep interest in the subject of horticulture, and anticipated a large amount of usefulness and success to flow from the lectures. Bailie Walcot, who occupied the chair, addressed the audience on the great educational advantages offered by the College, and its rise and progress since he attended its classes nearly forty years ago, pointing out the special value to gardeners of a course of study of the various branches of science connected with their profession, all of which are now so successfully taught at the College.

Mr. Wilson then proceeded to deliver his lecture, which was listened to by the audience with the closest attention, and drew forth their applause on several occasions. After indicating the various heads of study which it was intended to follow in the present course, he briefly alluded to the practice of gardening in ancient and mediæval times, and passing on to the consideration of the art as it now existed, he held that it might be fairly assumed that it was in as active a state of progress as ever it had been, and that there was a growing desire to help it still further on. The formation of the class, he said, was an indication of the progressive tendencies of the time. Depression of trade undoubtedly had done much to affect pure gardening, but not to such an extent as to justify the phrase, too often heard from faint-hearted men, that "gardening is done." Gardening must be subject to modification through the inevitable alteration of social conditions. It was for them to accept the inevitable, and to be fully equipped to make the most they could of the altered circumstances. The lecturer then narrated the subjects of study, making a few cogent remarks on each section, and bringing out the special points for the observation of the students with force and clearness.

In concluding, he alluded to several recent movements connected with horticultural education, specially referring to the scheme proposed by Professor Bayley-Balfour of instituting a course of lectures for gardeners at the Royal Botanic Garden, to which he wished every success, and the excellent practical work done by the Scottish Horticultural Association since it was established ten years ago.

Mr. Dunn, Dalkeith Palace, in moving a vote of thanks to Bailie Walcot for presiding, said that for some time it had been the aim of several of them, who were directly interested in the advancement of gardening, to establish a course of study, or horticultural class, such as had just been opened. Recently, Mr. D. P. Laird took the matter up, and, with the ready aid of the Principal of the College, matters were soon brought to a successful issue; and to Mr. Lindsay, Royal Botanic Garden, was due the credit of discovering the able lecturer to whom they had just been listening with so much pleasure and advantage. He thought all interested in the matter had good reason to congratulate themselves on the successful inauguration of the class. Mr. Laird and the Chairman having acknowledged Mr. Dunn's remarks, the proceedings closed.

AN AUTUMN VISIT TO A SCOTCH SEED FARM.

The trip from Glasgow to Rothesay *via* Wemyss Bay occupies about two-and-a-half or three hours, and carries the visitor through some of the most beautiful scenery in the West of Scotland. The natural attractions of the burch itself, and the lovely crescent-shaped Bay of Rothesay, with its background of wooded slopes merging into the picturesque environment of the rugged hills of Arran beyond, tempt me to dwell a little on their charms, but the more practical object of my visit must be first attended to.

The offices and glass structures of Messrs. Dobbie & Co. are situated in the High Street, at no great distance from the boat-pier.

The premises consist of a number of detached gardens and fields, most of them walled-in, and extending to from 1 to 3 or 4 acres each, several of them being a mile or more distant from the others. The costs of management and working are of course increased by such an arrangement, but the power to isolate particular sorts one from the other is increased also, and the choice of soil and situation is all that could be desired.

Immediately in rear of the well-appointed offices is a walled-in garden of considerable extent, on one side of which is a range of glasshouses of about 400 feet in length, and a range of pits runs parallel with the former to the same length. The pits were filled entirely with young stock of selected fancy Pansies and Violas. The houses are used principally in spring for propagating and growing

young stock of named and selected florists' flowers, and Phloxes, Pentstemons, Pansies, Violas, &c. The testing of Tomatos, Cucumbers, and Melons, is also carried out during summer in them. I was fortunate in seeing the crop of Tomatos, consisting of some seven varieties, which were growing in one compartment of the range under the same conditions, so as to test their relative merits. The following varieties struck me as being very good:—Earley's Defiance, said to be the earliest in cultivation; Canadian Victor, productive and excellent; and Dobbie's Prolific, which excelled the others in productiveness, in the size of its clusters of fruits, and in the size and fine colour of the fruits; some weighed in my presence turned the scale at from 8 to 12 oz.

The chief purposes to which the various divisions of this range are put in autumn is the drying of flower and vegetable seeds—a big task here, especially in a moist cold season. The whole space from roof to floor, except the pathway, is occupied with the flower-heads of French and African Marigolds, globe, quilled, and Victoria Asters, &c. The florets of all such are first trimmed closely with scissors, and two, three, or four heads are then tied together and attached to strands of stout twine strained from the dividing walls of each compartment, stakes being employed for intermediate support. The bunches are placed sufficiently far apart to prevent their touching each other. On the stages in other compartments were trays filled with seed-pods of Pansy Mignonette, Antirrhinum, Pentstemon, and other plants which do not lend themselves to the bunching method of drying; but Leek, Parsley, and other vegetable seeds were being dried in a large shed, the internal arrangements of which were well devised for the purpose, notably the drying by means of flues. Skeleton shelves surrounded the sides and ends of the building, supporting trays for such things as may not be bunched and hung up, while on the roof and upper part of the sides, supports for strands of twine or wire in many tiers, were arranged for bunches of Leeks and such like. I cannot dwell on the details of cleaning and preparing the seeds for sale, which found employment for many workpeople at the time of my visit; it must suffice to say, that everything I saw of the harvesting of seeds, impressed me with the conviction that choice seed saving taxes the ingenuity, the attention, and resources of all who are engaged on it largely, and with a determination to excel.

In a run round the several gardens I found it was too late to see many of the flowers in good form; but the remains of African and French Marigolds, Antirrhinums, Mignonette—the latter Dobbie's Giant, bearing spikes, upright and sturdy, a foot long satisfied me that the samples seen at the flower-shows during the season had not exhausted supplies of good things at home. So also with various specialties in vegetables with which the name of the firm is associated.

PEACH GROWING AT DUNIEPACE, STIRLINGSHIRE.

While I have travelled long distances this season to see hardy fruits in their best dress, and taken part in discussion as to the best methods of cultivating Peaches, I was unaware that objects of great interest and of high cultural order were within a few miles of me. At Duniepace House, near Larbert, there have been Peaches grown for several years which have created considerable wonderment and given tangible proof that cultivation, when rightly mastered, can achieve results which are not generally supposed attainable, in Scotland at least, under any system of management. The kinds of Peaches referred to are Royal George and Noblesse; and when these are at their best they are second to none. Take three fine trees on a wall, 17 feet high, a Royal George 17 feet wide, bore 350 fruit of good size and perfect in colour; another of the same kind, 14 feet wide, had 300 equally good; and a Noblesse about the same size as the last-named (perhaps less), matured 190 really good-sized fruit. Now, when we consider that there are no advantages in climate, altitude, or shelter which can be taken

into account, cultivation must claim much credit. The position is low, and it is very subject to spring frosts. Nets are used for protection till after the fruit is set. The trees are kept thin, the roots near the surface, and a fair extent of run for the roots, over which light crops only are grown. The fruit was a month later in ripening this year than usual. Mr. Menzies, Mr. Harvey Brown's gardener, is not willing to take all the credit of growing such fine fruit in a season so adverse as the past has been; as he says, "Man, we have real guid loam," and the roots are well looked after and kept near the surface. I thoroughly believe that root management has a deal to do with success in the cultivation of every plant. Climatic influence cannot be ignored, but healthy food, with all the functions in order to assimilate it, has a given result, which any cultivator may be proud of. *M. Temple.*

ENTOMOLOGY.

CALLIDIUM (GRACILIA) PYGMÆA.

DURING the years 1868–1874 there was published at Munich an elaborate catalogue of all the then described species of beetles (Coleoptera), in twelve volumes, by the Baron von Harold and H. Gemminger, amounting to 77,001 species, to which numbers at least 20,000 more must now be added of species either omitted by the authors of the Catalogue or subsequently described, raising the total list to about 100,000 species. Of this vast number as many as from 28,000 to 30,000 agree in a peculiarity in the formation of the last part of each foot (called the tarsus), which, instead of being formed of five free slender joints, consists of three dilated basal joints, of which the third is bilobed, forming a pair of pads having the real fourth joint very minute and united to the base of the slender fifth or claw-bearing joint. This peculiar structure prevails in the three great families of which the Linnean genera, Curculio (or weevils), Chrysomela (or plant beetles), and Cerambyx (or long-horned beetles), are the representatives; all of which are plant feeders, the dilated pads of the tarsi enabling them to keep a firm footing on the stems or leaves of the plants on which they subsist in the larva state. This remarkable generalisation is well represented in the numerous illustrations which have been published in our articles on the different species of beetles belonging to these three groups which infest plants or trees in one or other of their states.

We here give a further illustration of one of the long-horned species, *Gracilia pygmæa*, which, as the specific name implies, is comparatively of small size, being only a quarter of an inch long, of which several individuals were forwarded to us in the early summer of this year, which had occurred in considerable numbers in a newly-built house, where they were very destructive, as may be seen by the piece of wood figured on the left-hand side of our woodcut (fig. 92), which shows, in the shaded portions, the burrows formed by the larvæ (of which the head with its two small but powerful pointed terminal jaws is shown, greatly magnified, in the lower part of the cut (after Schiodte)).

The larva is about a quarter of an inch long, slender in form, but with a much widened head; it is white, like the larvæ of the Buprestidae, with a few whitish hairs on the sides of the segments of the body; it is furnished with three pairs of small, slender four-jointed feet, attached to the three segments following the head; the antennæ are very small, the fourth or terminal joint resembling a small tubercle.

The beetle is narrow in form, rather flattened on the back, of a dark uniform reddish-brown colour, covered with a fine slight greyish pubescence; the antennæ are equal in length to the entire body, and are nearly cylindrical or filiform, slightly more slender at the tips.

The lignivorous larvæ of this beetle, according to Mons. E. Perris (*Larvæ Coleopt.*, p. 466) is very

partial to Chestnut wood, but will equally attack young shoots of Oak, unbarked Osiers used in basket-making, Whitethorn twigs, the dead branches of the Spindle tree, Rose shoots, the wood of barrels, and even Briers, and when the period of its transformation to the pupa state approaches, it buries itself more deeply in the wood. In its ravages it is often accompanied by the larvæ of another longicorn beetle—*Phymatodes thoracicus*, especially in its attacks of the wood of barrels. The pupa is to be met with in April; it is quite smooth, without roughness or hairs of any kind, and the perfect insect appears about the middle of May. *I. O. W.*

HOME CORRESPONDENCE.

Correspondents will greatly oblige by sending early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

Photographs or drawings of gardens, or of remarkable plants, trees, &c., are also solicited.

PRIMULA NIVEA.—Since the publication of the synonym list, and on becoming a little better acquainted with the numerous species and hybrids of this genus, I now consider the proper place of *P. nivea* of gardens to be under *P. pubescens*. Whether the plant we grow at the present day is the original *nivea* I am unable to decide, but that the plant we grow has nothing whatever to do either with *P. viscosa* or *P. villosa*, anybody taking the trouble to examine them will see for himself. I am perfectly aware that *P. viscosa*, a common plant in gardens (under various names), is very variable, and it has been one of the parents of many beautiful hybrids; but the true plant as found wild in Switzerland, a plant of which was brought to Kew by Mrs. T. Thistelton Dyer, is as distinct from *P. nivea* as *pubescens* is from *Auricula*. The type *viscosa* is entirely covered with viscous hairs, quite sticky to the touch, and, what I take to be a strong characteristic, it is totally devoid of meal; indeed, with meal it would not be *viscosa* at all. On the other hand, *P. pubescens*, which is a hybrid itself (*hirsuta* and *Auricula*) is a much stronger plant than *viscosa*, with the large teeth of *hirsuta*, and the meal of the *Auricula*. *P. nivea* answers in every detail to the latter description, and as experiment has proved with seed from typical *pubescens*, one-third of which produced white flowers, answering in every way to the plant grown in gardens. As Mr. Douglas says, it never ripens seed in quantity, and the produce is never to be depended upon. A few capsules of seed saved by Colonel Beddome, and sown the same year, resulted in a full crop of purple *P. pubescens*, a plant of which was compared with our type, and answered admirably in every detail. The plant figured in the *Botanical Magazine* as *P. villosa* is *viscosa*, the true *villosa* being quite distinct, and an acknowledged species on the Continent. *D. Dewar.*

PEARS.—Mr. H. Markham states that he does not see clearly how it is possible to keep up a constant supply of fruit during the whole of the Pear season, year after year, with only twelve or fifteen varieties as selected and remarked on by me, but I can easily enlighten him on that head, and now assure him that it can be done, unless his provisos come in. These are that we cannot depend on the whole of those I mention cropping annually, which is very true, but when these fail, what about the others? And as I take it, that all are equal as regards free-bearing, and a spring that is adverse or fatal to one would be so to the rest, unless they happen to be exceptionally favoured with shelter. The sorts in my list are those that not only contains the best quality, as Mr. H. Markham admits, but they will, excepting the Williams, remain long in use, and by looking carefully over them and picking out for daily consumption the most forward, the one kind will more than carry on the supply till others come in. *J. Sheppard.*

—“F. M.” remarks that it would be scarcely safe for a gardener to limit his varieties of Pears to twelve or fifteen, but I feel sure that those who do so will give greater satisfaction to their employers or consumers of the fruit than they will by growing a greater number of kinds, as who, I would ask, would be satisfied with the flavour and quality of a Beurré Diel, Marie Louise d’Uccle, and Hacon’s incomparable after tasting a real Marie Louise or

Doyenné du Comice?—and as all ripen at the same time why grow such as are inferior? Beurré d’Aremberg is very good, but then it is not equal to Glou Morceau, which is in season with it; and here again the question comes, Why cultivate an inferior kind? As to Beurré de Capiaumont, and most of the others mentioned by “F. M.” as desirable, the sooner they make way for sorts of higher quality the better; and my advice to those who have them is to use them for stocks if not too old, and put grafts on them in March, taking the scions from Williams’ Bon Chrétien, Fondante d’Automne, Beurré Superfin, Marie Louise, Doyenné du Comice, Glou Morceau, Josephine de Malines, Bergamot Esperens, Beurré Rance, or Easter Beurré for latest supply, but the three last are not certain, as so much with them depends on the soil, situation, and aspect, which should be warm and sunny to have either of them up to the mark. *J. Sheppard.*

—I have been much interested in reading the discussion on the above subject in your columns, and heartily endorse all that “F. M.” and Mr. Markham have said as to the limiting of the number of Pears grown, in any one place or garden, to fifteen, as recommended by Mr. Sheppard; but my object in writing is to draw attention to the merits of that most excellent Pear, Durondeau, or De Tongre, which I find is not mentioned by either of your correspondents. This is, I consider, a first-class

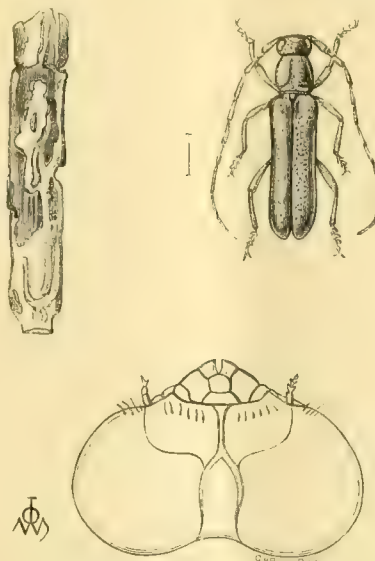


FIG. 92.—CALLIDIUM (GRACILIA) PYGMEA. (S.L.P. 610.)

Pear, the tree being hardy in constitution, and when worked on the Quince stock it bears abundantly, and, in my opinion, is far away ahead of either Beurré Clarigeau or Beurré Bosc. The fruits grow to a large size, and are very highly coloured, the flesh being tender, very juicy, and of excellent flavour. It succeeds well grown as a pyramid in warm localities, but in colder parts of the country it requires a wall with a south-western or western aspect. There are two other varieties of Pear I would likewise mention—the Seckel and Dana’s Hovey. The fruits of both kinds, I will acknowledge, are small in size, but what other varieties can surpass them for their honeyed sweetness? I am glad to see the Knight’s Monarch mentioned both by “F. M.” and Mr. Rust, as it is a capital Pear, and of good quality. Perhaps it is not generally known that there are two varieties of this Pear; but such is the case, and I grow them both here. The one comes into use about the end of the present month, and the other (which is the true variety) the middle or end of December. An excellent representation is given of both in the *Herefordshire Pomona*—the spurious variety on plate 4, and the true variety on plate 51; and I think I cannot do better than quote part of Dr. Bull’s explanation contained therein, as to the way in which the spurious variety became distributed:—“The error arose from Mr. Knight’s gardener accidentally sending wrong grafts under the name of Monarch to the London Horticultural Society; they were distributed over the country, and propagated by the nurserymen

for some years before the error was discovered, and thus was created a confusion which has lasted half a century.” Monarch was raised by the late Thomas Andrew Knight, of Downton Castle, near Ludlow. *J. Ward, Stoke Edith Park.*

MINA LOBATA.—This beautiful climber, mentioned at pp. 542 and 547, has not proved itself hardy here; seeds were sown about the middle of March, the plants, which were transplanted in June, grew away vigorously, and were literally covered with trusses of beautiful flowers, being the admiration of everyone who saw them growing. An abundance of seed-pods were formed, but the early frosts cut it to the ground, and on examining the roots to-day (Nov. 19) I find them to be quite destroyed, so I think it may be fairly termed a half hardy climber. *John Scouse, Folijon Park, Windsor.*

FUCHSIA COUNTESS OF ABERDEEN.—Notwithstanding the many fine varieties of Fuchsias which have been introduced in recent years, this fine novelty stands at present quite unique—both sepals and petals being almost pure white, there being but the faintest tinge of pink in them, but when viewed at a short distance they appear to be white. The flowers are not so large, nor have they so much substance as could be desired, yet as this is but the first of a new race of Fuchsias, it may not be long before larger flowers and other self coloured varieties will be produced. Judging from what we recently saw of the plant in the gardens at Castle Newe, Strathdon, the plant has a neat and floriferous habit, and, as Mr. Pirie told us, it grew quite as freely as any of the others, of which he has a large collection. Indeed, there is little doubt but what the plant will soon be found in all good collections of Fuchsias. *F. Ross.*

WALNUTS.—Mr. J. J. Willis’ remarks in your issue of November 10 concerning the Walnut crop of this year I can fully bear out. My trees bore a good crop, but the shells never hardened; the outer green shell withered up, and we have been unable to find one good nut. The kernels which formed were soft and insipid. *R. C. Williams, Aberystwith.* [The nuts spoken of by our correspondent and others were simply ill ripened owing to the wet summer. *Ed.*]

JUDGING TABLE PLANTS.—As I have won many 1st prizes for table plants at the best shows, I will write a line in reply to “Hortus.” It is not easy, without seeing the plants, to decide between the collections, but had I been judging, it is more than probable I should have hesitated before giving the 1st prize to either of the collections in question. There should be eight species in a collection of eight. Three *Crotons* and two *Dracenas* are far too monotonous. I seldom had even two of a kind—three, never. During the latter part of my exhibiting career, I think I may say I was rarely beaten in this class. Judges differ greatly, unfortunately, in their ideas as to the size desirable in table plants, and I have been disappointed to hear that though my plants were very beautiful, they were either too small or too large. The schedule should limit the maximum height—condition, quality, colour, variety, are the principal points with judges, but there are minor ones, such as the style of setting the plants up, neat and legible labels, clean pots, clean plants! Light-leaved, feathery, graceful plants should alone be exhibited. I have sat at table, where I could hardly see my opposite neighbours, owing to the size and density of the plants decorating (?) the table. They are, however, going, if not gone out of fashion, and I am glad of it, for flowers are so much more delightful. To decorate a dinner table properly, which I invariably did with my own hands, requires taste, experience, and a knowledge of colour and arrangement, not, I am afraid, too common with those who undertake it. In my experience, ladies are the best judges in these matters. May I relate a good story against myself! Nobody enjoyed his own discomfiture at the time more than I did? It happened at Manchester. I had staged my six stove and greenhouse plants, and on looking round the various lots, some half-dozen in number, I satisfied myself that I was a good 1st. So I was. I found a certain friend’s collection however, badly staged, and I asked him if I might re-stage them for him. “Oh! certainly,” said he. I did it in a few minutes assisted by one of my men and friend “Smith,” shall I say? When I had done it, I found I had quietly put him 1st and myself 2nd, which turned out to be the case, and we enjoyed so hearty a laugh at my jolly innocence. Well, if these

lines catch the eye of friend "Smith," he will remember it perfectly. It shows how much depends upon good staging. I have lost many a prize in my time, through the bad staging of my men, when my plants were far the best. Alas! those happy days are past for me, but their memory is fresh and green, I am pleased to think. *T. M. Shuttleworth, Preston.*

—There has just occurred a similar case to that which "Censor" notes at our late Chrysanthemum show. On these occasions much discussion takes place and valuable time is wasted over the most trivial points, and it is time some one took up the matter in the horticultural Press. We want a formula of judging to guide both exhibitor and judge, and such I am sure would be much valued by them, and would be the means of avoiding the heartburning so freely engendered among the exhibitors and others. *R. H. Poynter, Tontonn.*

LACHENALIAS FOR BASKETS.—It would be difficult to find anything more adapted for growing in baskets for greenhouse or conservatory decoration than these. Every successful cultivator knows full well that they require plenty of light, and air on suitable occasions, and by so growing them they gain these two important items. By treating them in this way, it reduces the labour attached to their culture. The bulbs should be picked over, and those of a flowering age selected. Wire baskets lined with turfy pieces of loam should be used, pointing the bulbs between the wires at every 2 or 3 inches; and the centre of the basket to be filled up with a compost of loam, leaf-mould, and sand, finishing the planting by putting a few bulbs about the top of the basket. As soon as they commence to grow they should never suffer from want of water, but when the foliage after flowering has become ripe, they should be allowed to take their rest and watering should cease; when ripened off they can be stored away in any dry quarter. If grown in this way, the baskets need not be disturbed for two or even three years—of course this matter depending upon the quality of the material used when making up the baskets. When in flower the baskets are completely hidden by the arching foliage. The *Lachenalias* most commonly cultivated are *L. tricolor*, *L. pendula*, and *L. Nelsoni*, all of which are equally suited for basket-work. *W. Harrow, Botanic Gardens, Cambridge.*

WATERING.—In the cultivation of plants in pots this is an important feature, as it is the medium by which food is conveyed to the plant. It is easy to see how growth may be influenced by the amount of moisture taken up, for no matter how much available food may be in the soil, it is practically useless unless there be a sufficiency of water to dissolve it. All growing plants should have an adequate supply of water. This varies according to the character of the plant and the soil; but those plants which have hard wood and hair-like roots are more susceptible to fluctuations either way than those with larger roots, and which have generally more recuperative power. However, it is during the winter, and especially in dull foggy weather, that most difficulty is found in preventing loss by damping off, and to remedy which we keep them dry, and often kill their roots by so doing, as is sometimes the case with *Primulas*. These losses by damping usually arise from improper conditions of the air in the houses rather than from a superabundance of water at the root. At the same time it is quite possible for a plant to go off by reason of its getting too much water at the root, particularly where there is deficient drainage. Indeed the roots of some plants are readily destroyed by a water-logged soil, they are practically suffocated by drowning, and this brings us to see the advantages of giving waterings, such as will completely moisten the whole mass, and then disappear by means of the drainage at the bottom of the pot. The interstices of the soil being thus filled with water, are in turn filled with air, as the water becomes absorbed or passes out. It is therefore both watered and aerated by the operation when thoroughly dry, and only partially so when the water has not reached every part. The soil at the same time is more effectively fertilised by the combined disintegrating and solvent powers of the air and the water. It is therefore evident that although a good deal of discrimination is required in watering a plant, yet much evil may be prevented by acting decisively, and either doing it thoroughly, or not at all, and never giving dribbles. By adopting this plan I have seen where there was no other alteration in the course of cultivation followed, a marked improvement in a short time. As to water, that from a river, pond, or the clouds is better than that from any other source. Avoid

water artificially heated, unless in winter, by filling up the cisterns at night for the morrow's use; by so doing sufficient time will elapse to take the chill from it before using it. If the cisterns are provided with hot-water pipes, cut them off at the first opportunity; and also, when there is any connection with the water circulating in the pipes or boiler. Such waters, if not positively injurious, are certainly not in any way necessary or beneficial to plants. *F. Ross.*

JUDGING AT WINCHESTER SHOW.—Referring to the remark in your report of this show, that the decision in the large class for forty-eight blooms was considered by "some persons" to be a serious error, allow me to point out that there are generally two sides to a question. From enquiries made from competent and disinterested individuals I learn that the award gave very general satisfaction until late in the evening, when the 2nd prize man suddenly came on the scene. I understood that no previous complaint had been heard. I do not often take notice of remarks of this description when they concern myself, but I feel that this particular instance is one of much importance to competitors at Chrysanthemum shows, and should be brought before their notice in your pages. With all deference to your reporter I think he has not given a fair report upon this exhibit, for he points out the merits of Mr. Molyneux's blooms, but entirely leaves out their serious defects. The Japanese blooms are spoken of as being so much in advance of Mr. Flight's. They were certainly heavier in point of size, but on the other hand they were decidedly weak in point of freshness. In the incurved blooms, it is true Mr. Molyneux showed a splendid back row, but why does not the report give an account of the other rows?—for whatever the back row blooms may have been there was a great falling off in the front and middle rows, which contained many rough, uneven, and stale blooms; indeed, the whole of Mr. Molyneux's exhibit showed want of freshness, which was greatly enhanced by the contrast with the exceedingly fresh lot in the 1st prize stand close beside them. I cannot agree that Mr. Flight's Japanese blooms were "especially weak." Many of the blooms were as heavy as those in Mr. Molyneux's stand, while the whole exhibit was characterised by its exceeding freshness and uniform good quality. As I said before, this is an important decision, in which size of bloom and *prestige* in the exhibitor fade before freshness, which should be the great desideratum to aim at by any person who attempts to set a good example to his fellow exhibitors. I would ask would stale fruit or vegetables be tolerated at exhibitions?—then why should show blooms of Chrysanthemums? *Norman Davis.*

WALL FRUIT TREE BORDERS.—I quite agree with "F. M." that fruit tree borders are generally made too narrow, but the width they should be depends almost entirely on the height of the walls and the size of the garden they enclose, as where the latter is large, the borders should, as a matter of course, be in proper proportion. Taking the walls at from 10—12 feet, and the garden at about two acres, laid out nearly square, or a little longer than broad, a 15-foot border would be ample for any kind of trees, and would work in with the quarters and look very well. This is what ours are here, and the 5 feet next to the walls is held sacred to the roots, and is never touched by spade or fork, further than just to break the crust by the aid of the last-named tool, just before the mulching is put on in the spring, and that is done to let the water in when it rains, or the trees require it artificially, as otherwise much of it would be lost by finding its way off the surface or down the cracks in the soil. As to the treading, which "F. M." appears to object to, I rather like it, as I hold that borders for stone fruits, and especially Peaches and Nectarines, cannot well be too firm, as in that condition the trees growing in them make less wood, and that of medium strength and more solid and fruitful. With regard to borders being from 1½ to 2 feet higher next the wall, the rise, in my opinion, should be ruled by the conditions of the ground, whether light or heavy, and also as to subsoil and natural drainage; for if the ground be light, such a rise would be bad for the trees in more ways than one, as it would lay the roots high and dry, and take from the height of the wall, and there would in that case be much loss of surface for training. Many years ago, when I took charge here, I found the borders all elevated far beyond what I considered they should be, and by degrees, as trees were replaced and could be removed, we lowered them, and continued on all round till the whole was done, and the improvement has been

great, as the trees suffer so much less from drought. In making the alteration I need hardly say that we did not take away the top soil, but cast that aside and removed the subsoil, which was a sandy gravel, and the pan or bottom of this was broken up and rubbish-heap stuff was worked in, which has been of great benefit to the tree roots, as now they can strike down and be independent of weather. As to drains, their utility depends on whether the rainfall can get away properly or on the natural lie of the garden, whether flat or wet; and if in this latter condition, or the subsoil be heavy and retentive, then drains that will carry off the superabundant water are necessary; but instead of placing them across the border, I should only have them along the front, as there, with proper falls and outlets, they would do all that is requisite for the welfare and health of the trees. In a garden that has a gravelly subsoil, or such as water can pass freely through drains are worse than useless, and here, except for carrying off water from the surface of walks, we have not one on the place, and not a particle of any kind of rubble or material under one of our trees. Like most gardeners we have to crop our borders, but, as I stated above, we do not go nearer the wall than 5 feet or so, and we only put light crops on, such as early Peas, Cauliflowers, Lettuces, Parsleys, and French Beans, and use some for seed-sowing to raise plants for putting out during summer to yield the supply of vegetables. The digging we give the borders is light, and the manuring very moderate, and the little that the roots of the trees get cut does perhaps more good than harm, as the severance of any strong ones leads to their making more fibres. *J. Sheppard.* [Our correspondent resides on a very dry soil, and in dry East Anglia. Ed.]

LOSELIA CARDINALIS.—This plant is much admired here for bedding purposes; but I find some difficulty in keeping the plants through the winter, either in a cold frame or cool-house. The plants rot in the middle during the winter, and, instead of being able to divide them into numerous plants in the spring, I find a difficulty in retaining even a small stock. I have tried keeping them dry, moist, and half-way between the two, but the results have always been the same. I have several times seen the advice—lift the roots, place them in cold frames, and in the spring divide the roots. Does your correspondent "J. S." find his roots rotten in the centre? I have found that the best way to keep the roots, through the winter is by pulling them to pieces at lifting time, placing them thickly together in boxes of moderately moist soil, and placing the boxes in a cold frame safe from frost. Early in April the plants should be transplanted to other boxes, or into the soil in a sod frame, for instance, whence they can be planted direct to the beds. We prefer the plants with single stems, as they can be more uniformly arranged in the beds in masses. Some of the plants, when in bloom, reach a height of 4 feet. The effect of such a bed, with well grown even spikes of bloom, when the sun shines upon it, must be seen to be realised. The bed is carpeted with *Antennaria tomentosa*, which forms a capital contrast to the dark-coloured foliage and bright crimson spikes of the *Lobelia*.

SOCIETIES.

EDINBURGH CHRYSANTHEMUM.

THE third annual show of Chrysanthemums, under the auspices of the Scottish Horticultural Association, was held in the Music Hall, Edinburgh, on the 20th and 21st ult. It was opened by Councillor Colston. Mr. Thomson, Clovenfords, in replying to Mr. Colston's remarks, said that, as it was intended next year to hold the centenary of the Chrysanthemum, and exhibitions in connection with it would be held in England, he did not see why they should not next year hold a great International Chrysanthemum Show. If it could be arranged that the Town Council of Edinburgh would award a Cup with the City arms upon it, he believed other gentlemen would follow suit, and such an exhibition of Chrysanthemums would be got up as had probably never been seen in the country. Councillor Colston, in acknowledging the motion, said with regard to the subject of the Cup that if a proper representation was made to the Lord Provost, magistrates, and Town Council, they would not be backward in considering it. At the dinner to the judges, over which

Mr. Thomson presided, further allusion was made to this subject, and the Chairman stated that a large amount could be raised without difficulty for such a show, and pledged his own firm to the amount of £5 towards it.

CUT BLOOMS.

The show was the best the Society has yet held, the entries in most classes being a considerable increase on those of last year. The success that has attended the efforts of the Council of the Association to meet the public desire for the popularising of the Chrysanthemum is creditable and gratifying, and proof also that the Royal Caledonian Horticultural Society erred when three years ago it declined to take the matter up. There was a marked improvement in the quality and finish of the cut blooms, especially the incurved varieties. The competition for a Challenge Cup offered by the Society for thirty-six blooms, eighteen Japanese sorts and eighteen incurved, was the chief point of interest in the show. For this there were five entries, every one of which was highly meritorious and where so much excellence was brought together there was naturally a difficult piece of work for the judges. Between the 1st and 2nd lots there was little to choose, but Mr. McHattie, of Newbattle Gardens, was awarded the 1st prize for a fine stand in which the principal flowers were:—Criterion, Duchess of Albany, E. Molyneux, M. H. Fabre, Duchess of Manchester, Jeanne d'Arc, Lord Alcester. The 2nd prize was awarded to Mr. Carruthers, gr. to Mrs. Fleming, Hillwood, Corstorphine, who tabled a fine lot, the most prominent varieties being Gloriosum, Mdle. Lacroix, Amy Furze, Barbara, Queen of England, Jardin des Plantes, Pink Venus, Jeanne d'Arc. Mr. Hepburn, gr. to T. Burnley, Esq., Erich Bank, Kilm, Argyleshire, was placed 3rd with a stand of great merit.

In the class for twenty-four blooms, twelve Japanese and twelve incurved, Mr. Hepburn was placed 1st, with Prince Alfred, Jeanne d'Arc, Golden Beverley, John Salter, Elaine, and Boule d'Or as conspicuous blooms, and the whole fine. This competitor was the only one competing with dressed blooms; and on this point there was conflicting opinions, some holding that the practice led to artistic results, others that the undressed flowers were the most effective because natural. The 2nd prize in this class went to Mr. Carruthers, whose stand contained grand samples of Pink Venus, White Venus, Prince Alfred, Lord Alcester, Duke of Albany, Mdle Lacroix, and Queen of England; and Mr. John Foster, gr. to Mrs. Roberts, Welwood Park, Selkirk, was 3rd with also a very excellent lot.

The class of twelve blooms incurved, distinct, brought Mr. A. McMillan, Trinity, Edinburgh, to the front, Mr. Donward, Townhead, Thornhill. Dumfries, being a good 2nd.

For six blooms incurved, distinct, Mr. Peter Matheson, gr. to Mr. Outram Dahling Mohr, Kilm, Argyle, stood 1st with a very fine stand of well-finished blooms; 2nd, Mr. Cumming, St. Roque, Grange Loan, Edinburgh; Mr. Rushton, 3rd.

In six blooms incurved, one variety, Mr. Carruthers took the 1st prize, Mr. Foster making a close 2nd; Mr. Kirie, gr., Sunderland Hall, Selkirk, being 3rd, competition being keen.

Twelve Japanese, distinct, placed Mr. Rushton 1st, with splendid examples of Elaine, Mrs. John Laing, Belle Paule, Boule d'Or, Soleil, Levant; and Mr. Matheson pressed him hard with fine blooms of Madame Rendatler, Belle Paule, Mdle. Lacroix. Mr. Jardine made a close 3rd in this class.

Among plants (Chrysanthemums) there was less keen competition. Mr. Jardine, of Ravelston Hall, Edinburgh; Mr. Cumming, Mr. Foote, Parson's Green, Edinburgh; Mr. Carruthers, Mr. Ferguson, Whitehouse Loan, Edinburgh; Mr. Donaldson, Ormelie, Murrayfield, Edinburgh, being the principal competitors.

FRUIT.

In this portion of the show the display was not large, but the quality was excellent. Mr. Murray, Culzeau Castle, Maybole, was placed 1st in the class of two bunches of black Grapes, with magnificent well coloured and highly bloomed Black Alicante; Mr. McHattie, Newbattle, being 2nd, with good Gros Colmar. In white Grapes Mr. McHattie was a very easy 1st, with two bunches, splendidly coloured, of Muscat of Alexandria, the fine amber tint of which was much admired and commented upon. The 2nd prize in this class went to Mr. Adam Duff, Clifton Hall Gardens, Ratho, for two beautiful bunches of Rivers' New Sweetwater, a handsome-looking Grape, new to this quarter.

The best collections of Apples and Pears came from Mr. Day, Galloway House, and were very fine fruit; and the 2nd best from Mr. McHattie.

Miscellaneous plants were represented by *Primula sinensis*, the best coming from Mr. Ball, gr., Glenbourne, Oswald Road, Edinburgh, who also tabled the best six *Primula obconica* in 5-inch pots, which were models in their way; and zonal *Pelargoniums*, the best six of which came from Mr. Rushton.

Cultural Certificates were awarded to Mr. D. Murray, Culzeau, for two bunches of *Barbarossa* Grapes, weighing each 11 lb., and for six splendid Pines, the sorts being Charlotte Rothschild, Prince Albert, Smooth Cayenne, and Queen.

Messrs. Methven & Sons, and Messrs. Laird & Sons decorated the orchestra, with admirable effect, with choice Palms and other foliage plants. Messrs. Dicksons & Co., occupied a table with a choice assortment of stove and greenhouse plants, and exhibited fine samples of Red Hawthorned Apples.

Messrs. Ireland & Thomson had a very attractive table of select stove and greenhouse plants, including some excellent *Nepenthes*. Messrs. James Dickson & Sons had a miscellaneous table of plants and dried flowers; Mr. Henry Erskine, a beautiful display of wreaths and other objects of the florists' art. Messrs. Methven & Sons made a beautiful display of cut blooms of Chrysanthemums, interspersed with small Ferns and Palms, &c., which was much admired; and Messrs. Laird & Sons exhibited over 100 blooms Chrysanthemums, which were equal to anything in point of quality that was to be found in the competing lists.

Mr. Fairgrieve, Dunkeld, exhibited a model of a new fruit tree protector; the leading feature of which is a movable screen of canvas suspended from the top of the wall, attached there to a 3-inch batten, and having a roller 4 inches in diameter at bottom. The screen is recommended to be fitted up in 20 feet lengths, and to have the rope and pulley fixed at the centre 10 feet from either ends. The pulley is fixed to the batten at the top, and a groove is made in the roller at the exact centre which in hauling up or letting down the screen serves to prevent unequal movement at either end and consequent entanglement.

BANBURY CHRYSANTHEMUM.

NOVEMBER 21.—This exhibition took place, as usual, in the Exchange Hall, and a pretty and bright display resulted. Prizes were also offered for winter-flowering plants, and fruit and Onions—always a strong point at Banbury. Plants of Chrysanthemums were somewhat poor, and showed signs of having been kept too long, and the judges wisely held back the 1st prizes in consequence.

Groups of Chrysanthemums.—One of the best seen this season came from Mr. Baskett, gr. to W. Mewburn, Esq., Wykeham Park, Banbury, the plants being well grown and finely bloomed, and included fine decorative Japanese and incurved varieties. Mr. T. Cummings, gr. to J. Gillett, Esq., was 2nd, with some finely bloomed plants.

Tables of Winter-flowering Plants.—These proved a very pleasing feature, and the arrangement and effect were decidedly in advance of last year. Mr. Doherty was a good 1st, with foliage and flowering plants, including *Calanthe Veitchii* and other Orchids, nicely blended; Mr. P. J. Perry, nurseryman, Banbury, being 2nd.

Cut Flowers were remarkably good, the lateness of the season considered. The best twenty-four incurved, distinct varieties, came from Mr. W. Allen, The Gardens, Swallowfield Park, Reading—nice fresh blooms, not over large, but of good quality—*Empress of India*, *Princess Teck*, Lord Wolseley, *Hero of Stoke Newington*, Lord Alcester, *Emily Dale*, *Golden Empress*, *Golden John Salter*, *Queen of England*, *Princess of Wales*, *Cherub*, Mrs. Norman Davis, and Lord Eversley being the leading ones; Mr. G. Neal, gr. to P. Southby, Bampton, was 2nd.

R. N. Byass, Esq., Banbury, had the best twelve blooms of incurved; the Rev. E. E. Elliott being 2nd. Mr. F. J. Myers, Banbury, had the best nine.

Japanese.—Stands of twenty-four varieties were a good feature, Mr. Tipler, gr. to S. Gulliver, Esq., Aylesbury, being 1st, with some finely developed blooms of Madame J. Laing, Mons. Tarin, Ralph Brocklebank, Madame C. Audiguier, Val d'Andorre, Elaine, Gloriosum, Jeanne Delaux, Sarnia, Duchess of Albany, Thunberg, Mdle. Lacroix, &c.; 2nd, Mr. Allen.

Mr. Symington, Banbury, had the best twelve; R. N. Byass, Esq., being 2nd.

The Rev. F. W. Cartwright was 1st with nine blooms.

Reflexed.—Mr. Baskett had the best stand of twelve blooms—Cloth of Gold, Amy Furze, Cullingfordi, King of Crimson, Phidias, Madame M. Tezin, being very fine; Mr. Neal was 2nd.

Anemone-flowered.—These included the Japanese forms also, and Mr. Neal was 1st, having fine examples of *Empress*, Lady Margaret, Grand Alveole, Gluck, Miss Annie Lowe, Fleur de Marie, Georges Sand, Duchess of Edinburgh, &c.; 2nd, Mr. Allen.

Mr. Allen had the best twelve blooms of any one variety; being 1st also with fine Golden Christine, Mr. R. N. Byass being 2nd with the white incurved *Isabella Bott*.

Fruit.—There were several stands of three bunches of Grapes, Mr. J. Hughes, gr. to Col. Cartwright, Byfield, being 1st with well-finished Alicante, Mr. F. J. Myers being 2nd with the same variety.

Some very fine bunches of Gros Colmar, shown by Mr. E. Crump, Leamington, were highly commended, not being eligible to compete in the Grape class.

The best eight dishes of Apples and Pears came from Mr. R. N. Byass—a very good lot of dessert and culinary varieties. Captain Bunyon being 2nd.

Mr. J. Green also had the best six dishes of Pears, Miss Percy being 2nd.

Potatoes.—These were numerous, and very good. The best nine dishes came from Mr. A. Cartwright, who had very fine examples; 2nd, Mr. V. S. Cross, also with a fine lot. Mr. A. Batchelor had the best six dishes. The best round Potato was Satisfaction, Reading Giant the best kidney.

Several classes were set apart for amateurs plants, flowers, and fruits, the leading prize-takers being Miss Gillett, Mr. C. F. Edmunds, Mr. C. Gillett, Mr. W. Rowles, Mr. R. C. Rainbow, and Mr. W. Dale.

Onions.—These were very fine. Mr. Doherty was 1st with twelve marvellous examples of Lord Keeper, the heaviest bulbs weighing 2 lb.; Mr. Neal was 2nd with Anglo-Spanish.

YEOVIL.

NOVEMBER 21.—This exhibition was held in the Town Hall, and, taking it altogether, was a very good one.

Groups.—Mr. Crossman, gr. to J. Brutton, Esq., Yeovil, won the Silver Cup for the best arranged group of Chrysanthemums, his plants being in fine condition, the flowers large, plentiful, and fresh. Mr. W. Appleby, gr. to T. W. Dampier-Bide, Esq., Yeovil, being a very close 2nd. Mr. S. Kidley, gr. to H. A. Helyar, Esq., Coker Court, Yeovil, and Mr. G. Taylor, gr. to Captain Marsh, Yeovil, were 1st and 2nd in that order with excellent arrangements.

Cut Flowers—Open Classes.—The competition in these classes was not quite so keen as it would have been if the Bristol show had not been on the same day. Mr. C. Lucas, gr. to John Marshall, Esq., Taunton, was 1st for twenty-four blooms, distinct, twelve Japanese and twelve incurved, with large, fresh, and well-formed blooms of Baronne de Prailly, Boule d'Or, Japonais, Ralph Brocklebank, Lord Alcester, Jeanne d'Arc, Lord Wolseley, Jardin des Plantes.

Mr. Lucas was also 1st for twelve reflexed varieties—an excellent stand.

Mr. W. Cocks, gr. to W. Fitzherbert Wyndham, Esq., Kingswear, South Devon, was 1st for six incurved and six Japanese, showing large well-finished blooms in both stands.

Mr. H. Copp, gr. to W. Drax, Esq., Holnest Park, Sherborne, had the best twelve bunches of pompons.

Mr. Cocks staged an excellent stand of Japanese (not for competition), in which Mons. J. Laing, Belle Paule, and Mrs. Cannell were conspicuous.

Fruit was a fairly good display, the quantity being good. Mr. Lloyd was 1st for a collection of six kinds of fruit, with good Black Alicante and Trebbiano Grapes, Glou Morceau Pear, Ribston Pippin Apples, and Vicomtesse Hericart de Thury Strawberry; Mr. Crossman was a good 2nd. Mr. Lloyd was 1st for two bunches of Black Alicante and two bunches of Mrs. Pince in the any other black class. Mr. Crossman was 1st for two bunches of Muscats; and Mr. Daley, gr. to R. Stamer Randle, Esq., Maperton House, Wincanton, occupied a like position with two bunches of Foster's Seedling in the any other white Grape class, all staging shapely well-finished bunches. Mr. Daley had the best three dishes of dessert Apples; and Mr. Lloyd had the best three dishes of culinary, as well as the best dish of dessert Pears. Mr. Kidley had the best dish of culinary Pears.

Tagetables.—There were four excellent collections

of eight kinds, and three collections of six kinds of salading. Mr. Bowers was 1st in both classes; Mr. Copp being 2nd in the former class, and Mr. Lloyd 2nd in the latter.

Trade Collections.—Messrs. Scott & Co. (Merriott and Yeovil), and Messrs. Robert Veitch & Son (Exeter), put up two admirable collections of Apples, not for competition.

ST. ALBANS CHRYSANTHEMUM.

NOVEMBER 20 AND 21.—The second annual show was held in the Town Hall, and there were some fine examples on view. For three trained specimens of Japanese, Mr. Edwin Beckett, gr. to H. Hicks Gibbs, Esq., Aldenham House, Elstree, was 1st, with well flowered plants. He also had the best incurved.

In the competing group, on a space of 40 square feet, Mr. F. H. Froud, gr. to G. N. Martin, Esq., The Bank, St. Albans, was awarded 1st for a capital selection nicely arranged; the Ven. the Archdeacon Lawrence (gr., Mr. J. Fisher), St. Albans, coming 2nd.

Among non-competing exhibits were a group of foliage and stove plants from Mr. J. Watson, New Zealand Nursery, St. Albans; an assortment of Coleus, Lilies, Chrysanthemums, and foliage plants, shown by Mr. Freeman, gr. to Horace Slade, Esq., Hatfield Road, St. Albans; an effectively arranged group of Chrysanthemums and miscellaneous plants, by Mr. T. Nutting, gr. to J. Blundell Maple, Esq., M.P., Childwickbury; and a corresponding group from Mr. W. F. Emptage, gr. to J. S. Hill, Esq., Hawkswick.

For cut flowers Mr. E. Beckett led easily in both sections, with fine blooms. He also had a collection of *Anemone-flowered* Chrysanthemums.

There were some excellent vegetables, the most noticeable being those from Mr. Beckett. He also contributed fruit, in good examples of Black Alicante and Muscat of Alexandria Grapes, and Black Jamaica Pine-apple.

LEEDS.

NOV. 20 AND 21.—In spite of previous drawbacks the Leeds Chrysanthemum Society determined to make one more try, and the result was a creditable display. The groups of plants were arranged round the sides of the hall, the principal prizes being taken by Mr. H. Featherstone, nurseryman, Kirkstall; and Mr. Eastwood, gr. to Mrs. Tetley, Leeds.

Grapes were the only fruit staged, the best Muscat of Alexandria and Alicante coming from Mr. Midgeley, gr. to H. Mason, Esq., Bankfields, Bingley. Mr. Featherstone was the principal exhibitor in the classes for bouquets, &c.

There was a good show of cut blooms. In the principal class for thirty-six distinct varieties, eighteen to be Japanese and eighteen incurved, Mr. T. B. Morton, nurseryman, Darlington, took premier honours with a good lot, the Japanese being especially heavy and well arranged—*Etoile de Lyon*, a new pink variety, being large and effective, and also *Mlle. Louise Leroy*, a new white variety. Incurved varieties were represented by the usual leading sorts; Mr. Midgeley was 2nd.

For twenty-four blooms, twelve Japanese and twelve incurved, Mr. T. Barclay, gr. to R. Clough, Esq., Keighley, was 1st, staging capital examples of leading varieties.

Mr. Morton succeeded in winning 1st honours for twelve Japanese and twelve incurved in separate classes, with blooms similar in name and quality to the larger classes; Messrs. Midgeley and Barclay followed closely.

Anemone-flowered and *reflexed* varieties were best staged by Mr. Morton, the former's being full-centred specimens, while the latter's were bright and good.

Mr. Grix, gr. to Sir James Kitson, Gledhow Hall, Leeds, was successful in securing 1st honours in the special class promoted by the members of the Leeds Paxton Society for eighteen blooms, distinct varieties, any section, staging a mixed lot of incurved and Japanese.

Messrs. Clibran & Sons, Altrincham, Cheshire, contributed five dozen blooms, Japanese and incurved, of leading varieties, along with a mixed collection of decorative stove and greenhouse plants not for competition, which created some interest, as did the collection of manures and other horticultural sundries, from Messrs. W. Wood & Sons, Wood Green, London.

BRISTOL CHRYSANTHEMUM.

NOVEMBER 21 AND 22.—The twenty-fifth exhibition of this Society took place in the Drill Hall, Clifton, and may be regarded as being one of the best shows held this season. Specimen plants of Chrysanthemums were especially good. Fruits and vegetables were excellent.

Plants.—These exhibits were an imposing display by themselves, so numerous were they, and of such good quality. There were five competitors for the Silver Cup, to be awarded for eighty-four large-flowered distinct varieties, the prize going to Mr. J. Lee, gr. to T. M. Miller, Esq., Bristol; his plants were from 4 to 5 feet in diameter, well flowered, and neatly trained, Mrs. G. Rundle, Prince Alfred, and Mrs. Forsythe being of especial excellence.

Mr. J. Ayres, gr. to T. W. Gibson, Esq., Clifton, was 1st for six Japanese; and Mr. A. Ambrose, gr. to G. A. Tilney, Esq., Sneyd Park, was 1st with leading varieties, such as *Mlle. Mélanie Fabre* and *Fair Maid of Guernsey*, freely flowered.

Trained standard plants were staged in capital condition, and consisted of Lord Wolseley, Empress of India, Bronze Jardin des Plantes, and others, carrying from twenty to thirty large blooms, quite equal in quality to the cut blooms shown as such. Mr. Cole, gr. to W. F. Threadwell, Esq., Bath, took the 1st, and Mr. H. Hawking, gr. to Joseph Leach, Esq., the 2nd prizes.

A group of Chrysanthemums occupying a space 12 feet by 7 feet brought six competitors. The best plants, having both fine flowers and good foliage, were staged by Mr. A. Parkes, gr. to Captain Alcock, Bristol; the 2nd prize falling to Mr. A. Ambrose.

Cut blooms were shown in large numbers, and the class for thirty-six distinct, twelve to be Japanese and the remainder incurved, was the largest. Mr. Thomas, gr. to W. Marshall, Esq., Taunton, was the best among six exhibitors, the blooms being large and solid; the best of the Japanese varieties were *Boule d'Or*, *E. Molyneux*, *M. J. M. Piguy*, *Thunberg*, and *Duchess of Albany*; and of incurved flowers, *Empress of India*, *Jean d'Arc*, *Mrs. Heale*, *Jardin des Plantes*, and *Hero of Stoke Newington*. Mr. A. Parkes showed well, and was a good 2nd.

For twelve incurved, 1st, Mr. C. Cooper, gr. to C. L. Collard, Esq., Taunton; the medium blooms he showed possessed freshness and finish. The leading variety shown was *Princess of Wales*, very fine. Mr. W. Carpenter, gr. to A. Cole, Esq., showed in good form, and took the 2nd prize.

The best six incurved blooms were those of Mr. A. Parkes—fine fresh blooms.

Anemone-flowered were shown in twelve varieties in capital condition by Mr. C. Lucas, gr. to J. Marshall, Esq., Taunton; *Lady Margaret*, *Fleur de Marie*, and *Gluck* were the best, all of them were full-centred, and fresh blooms. Mr. E. Miller, gr. to F. Sargent, Esq., Old Sneyd Park, Bristol, was 2nd.

Mr. Cooper had the best twelve Japanese varieties, and was 1st for eighteen Japanese, and for the same number of incurved varieties; the best among the former being *Boule d'Or*, *Baronne de Prailly*, *Carew Underwood*, *Edwin Molyneux*, *Val d'Andorre*, and *Thunberg*. Mr. Carpenter and Mr. Thomas were respectively 2nd in these classes, both showing well.

Mr. J. Asplin, gr. to W. M. Blake, Esq., Hasfield Court, Tewkesbury, was 1st for six blooms of varieties of recent introduction; *Alice Bird*, a bright yellow being one of the more conspicuous blooms shown.

Fruit.—A good show was made in this section. For a collection of six dishes, Pines excluded.—1st, Mr. W. Iggulden, gr. to the Earl of Cork, Marston House, Frome.

Black Hamburgh Grapes were best shown by Mr. Bannister, gr. to H. St. Vincent Ames, Esq., Cote House, Westbury-on-Trym.

For two bunches Muscat of Alexandria, Mr. W. Coates was 1st with capital bunches, having large berries of good colour; Mr. J. Gibson, gr. to Earl Cowley, Draycott Park, who was 2nd, showed well.

In the Alicante class there were fifteen competitors, the 1st prize being taken by Mr. Iggulden with large bunches, compact, and of good colour; Mr. F. Crocker, gr. to Mrs. M. H. Miles, Ham Green House, Bristol, was 2nd, he failing to gain 1st place by want of size in the berries.

Nine competitors showed *Lady Downe's*; the best were those of Mr. Crocker, Mr. J. Gibson being placed 2nd with smaller bunches.

Eight exhibitors showed *Gros Colmar*. Mr. Iggulden's, which were good in all points, were

placed 1st; and those of Mr. Gibson 2nd. Mrs. Pince was best staged by Mr. J. Wilkinson, Bristol; and in the class for any other variety of black Grapes, the bunches of *Gros Maroc*, shown by Mr. Crocker, were pronounced to be fine on all points, and received 1st honours, the *Black Barbarossa*, shown by Mr. Iggulden, obtaining the 2nd place.

Mr. Wilkinson staged *Trebbiano* in good condition in the class for any other white Grapes, taking the 1st prize; and Mr. Iggulden followed with *Golden Queen*.

Pears made a good show, and the 1st prizes for six and for four varieties were secured by Mr. W. H. Bannister. Apples were also good.

Vegetables in ten distinct varieties brought eight competitors, the best, those from Mr. W. H. Bannister, were of especial excellence. We give the names of the most noteworthy kinds, viz., *Veitch's Matchless Carrots*, *Perfection Brussels Sprouts*, *Danver's Yellow Onion*, *Hackwood Park Tomato*, and *Chancellor Potato*; Mr. G. Pragnell, gr. to C. D. W. Digby, Esq., Sherborne Castle, Dorset, was a close 2nd.

The classes for miscellaneous productions were filled generally in a very creditable manner. The bank of plants—10 feet by 5 feet—put up by Mr. W. Coates, was very telling. Plants with ornamental foliage, shown by Mr. A. Hancock, gr. to W. Somers, Esq., Clifton, were excellent, and the specimen of *Cycas revoluta* especially so.

Mr. J. Harris, gr. to Dr. Trotman, secured the 1st place for the best stove or greenhouse plant with a well bloomed *Eucharis amazonica*.

A specimen of *Cypripedium insigne* with thirty-six blooms obtained for Mr. J. Coles the 1st prize in the class for a single Orchid.

Poinsettias were well shown by Mr. Cole; and Mr. G. Price, gr. to S. Budget, Esq., Bristol, was 1st for table plants.

ISLE OF THANET.

NOVEMBER 21 AND 22.—The second annual exhibition was held at the Hall-by-the-Sea, Margate; the competition in many cases was very keen, in this respect showing an improvement on last year's show.

For a group of miscellaneous plants, arranged for effect, the 1st honours were awarded to Mr. J. Gosden, gr. to Mr. J. Atkinson, Westbrook, Margate, who showed a charmingly arranged group of beautiful plants. Mr. F. Roberts, gr. to Mr. Sebag Montefiore, was 2nd.

There were six groups of Chrysanthemums in competition, which was very close, the first honours falling to Mr. J. Cornford, gr. to Mr. H. H. Powell Cotton, who showed a very neatly arranged group of excellent plants. Two very fine groups were shown by Mr. E. Bishop, gr. to Mrs. Gray, of Birchington Hall, and Mr. F. Roberts, who were awarded 2nd and 3rd prizes respectively.

Mr. Cornford showed four very fine specimens (incurved), for which he received 1st honours; but for six trained specimens (incurved), single Japanese, and three specimens (reflexed), Mr. D. Fairweather, gr. to Mr. W. J. Jarrett, Westgate, led.

Mr. W. Iles, gr. to Mr. A. R. Rayden, Birchington, showed some very nice plants, and secured 1st place for four Japanese and for three pompons.

There was a very fine show of cut blooms, the most successful competitor being Mr. D. Fairweather.

Mr. J. Cornford was also very successful, and his group of twenty-four incurved was excellent.

For thirty-six blooms the 1st prize was awarded to a capital collection by Mr. T. Skinner, East Sutton Park.

Mr. J. Gosden, was 1st for a very pretty collection of plants suitable for table decorations.

The display of fruit was exceptionally good. Mr. D. Fairweather had excellent Grapes, while Apples shown by Mr. F. Miller, gr. to Mr. J. T. Friend, Northdown, and the Pears by Mr. W. C. Barber and Mr. O. Wilkin were also good. There was also a very good show of vegetables.

Amateurs.—The show of plants in pots was very weak, being scarcely up to the average of those shown by cottagers, and in some classes the judges did not think the exhibits worthy of a 1st prize. There was, however, a very good show of cut blooms. Mr. Gaines carrying off many of the prizes; but in two classes he had to succumb to Mr. R. Pepper. Mr. J. Knight was also a successful exhibitor. Mr. Jarman, gr. to J. Farmer, Esq., Margate, had a grand group, not for competition, of Chrysanthemums which was singled out as the best group in the show.

THE WEATHER.

[Accumulated temperature indicates the combined amount and duration of the excess or defect of temperature above or below 32° F. for the period named, and is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.				
	Above or below the Mean for the week ending Nov. 26.	ACCUMULATED.			
		Above 32° for the Week.	Below 32° for the Week.	Above 32° difference from Mean since Jan. 3, 1888.	Below 32° difference from Mean since Jan. 3, 1888.
Principal Wheat-producing Districts.	Day-deg.	Day-deg.	Day-deg.	Day-deg.	
0. SCOTLAND, N. ...	2 above	12	26	-226	+180
1. SCOTLAND, E. ...	5 above	30	11	-417	+93
2. ENGLAND, N.E. ...	7 above	34	0	-471	+27
3. ENGLAND, E. ...	8 above	43	0	-342	+152
4. MIDLAND COS. ...	8 above	41	0	-428	+136
5. ENGLAND, S. ...	8 above	53	0	-409	+139

Principal Grazing, &c., Districts.	Day-deg.	Day-deg.	Day-deg.	Day-deg.	
6. SCOTLAND, W. ...	5 above	29	3	-332	+16
7. ENGLAND, N.W. ...	6 above	43	0	-336	+87
8. ENGLAND, S.W. ...	6 above	48	0	-449	+243
9. IRELAND, N. ...	5 above	32	0	-238	+7
10. IRELAND, S. ...	5 above	45	0	-218	+77
— CHANNEL ISLANDS	6 above	71	0	-272	+153

DISTRICTS.	RAINFALL.		BRIGHT SUNSHINE.	
	More or less than the Mean for the Week.	No. of Rainy Days since Jan. 3, 1888.	Total Fall since Jan. 3, 1888.	Percentage of possible duration for the Week.
Principal Wheat-producing Districts.	Tenths of Inch.	Ins.		
0. SCOTLAND, N. ...	8 more	217	40.5	5
1. SCOTLAND, E. ...	9 more	189	27.8	19
2. ENGLAND, N.E. ...	4 less	169	21.0	21
3. ENGLAND, E. ...	1 less	71	23.0	16
4. MIDLAND COS. ...	2 more	158	23.9	19
5. ENGLAND, S. ...	0 (aver.)	165	23.7	12
Principal Grazing, &c., Districts.				
6. SCOTLAND, W. ...	10 more	178	40.0	8
7. ENGLAND, N.W. ...	7 more	130	28.2	8
8. ENGLAND, S.W. ...	2 more	185	33.7	17
9. IRELAND, N. ...	4 more	191	32.6	14
10. IRELAND, S. ...	0 (aver.)	172	33.0	12
— CHANNEL ISLANDS	4 less	202	28.0	20

THE PAST WEEK.

The following summary record of the weather for the week ending Nov. 26, is furnished from the Meteorological Office:—

"The weather has continued in a very unsettled and rough condition in all parts of the kingdom. Extremely heavy rain has fallen over the greater part of Scotland, and considerable quantities at most of the English and Irish stations, but in the eastern parts of England the rainfall has been comparatively slight. Thunder and lightning occurred at some of the Irish stations on the 20th, and lightning was very prevalent over the south of England at the close of the period.

"The temperature has again been above the mean. Over England the excess has been as much as 6° to 8°, and in Ireland 5°; but in Scotland (where the thermometer was at times low) the excess varied between 2° and 5°. The highest of the maxima, which were recorded on rather irregular dates, ranged

from 56° to 59°. The lowest of the minima were generally registered either at the beginning or end of the period, when temperature fell to between 26° and 33° over Scotland, 30° and 32° in Ireland, and between 30° and 33° over England. In the 'Channel Islands' the lowest reading was 45°.

"The rainfall has been less than the mean in the east and north-east of England and in the 'Channel Islands,' and about equal to it in the southern parts of England and Ireland; but in all other districts it has been more than its normal value, especially over Scotland. At Glencarron the fall during the 21st was as much as 3.80 inches, and the total fall for the five days ending on the 24th was 7.16 inches.

"Bright sunshine has again been very deficient in all places. The percentage of the possible amount of duration ranged from 5 in 'Scotland, N.,' and 8 in 'England, N.W.,' and 'Scotland, W.,' to 20 in the 'Channel Islands,' and 21 in 'England, N.E.'"

MEAN TEMPERATURE OBSERVED AT CHISWICK DURING THE WEEK ENDING DEC. 8. (AVERAGE OF FORTY-FOUR YEARS.)

Dec. 2 ...	41° 3	Dec. 6 ...	41° 2
" 3 ...	41° 3	" 7 ...	41° 1
" 4 ...	41° 3	" 8 ...	41° 0
" 5 ...	41° 2	Mean for the week ...	41° 2

MARKETS.

COVENT GARDEN, November 29.

PRICES remain the same as last week, Grapes alone improving. *James Webber, Wholesale Apple Market.*

FRUIT.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Apples, half-sieve ...	2 0-1 6
— Canada and Nova Scotia, per barrel	10 18 0
Cobs, 100 lb. ...	10 0- ...
Grapes, per lb. ...	0 6-3 0
Lemons, per case ...	12 0-21 0
Peaches, dozen ...	2 0-6 0
Pine-apples, Eng., lb. ...	1 6-2 0
— St. Michael, each	2 0-8 0

VEGETABLES.—AVERAGE RETAIL PRICES.

s. d. s. d.	s. d. s. d.
Beet, red, per dozen	1 0-2 0
Carrots, per bunch ...	0 6- ...
Cauliflowers, each ...	0 3- ...
Celery, per bundle ...	1 6-2 0
Cucumbers, each ...	0 9- ...
Endive, per dozen ...	3 0- ...
Green Mint, bunch ...	0 6- ...
Herbs, per bunch ...	0 6- ...
Leeks, per bunch ...	0 4- ...
Lettuce, per dozen ...	2 0- ...
Mushrooms, punnet	2 6- ...
POTATOS.—Beauty of Hebron, 70s. to 80s.; Imperators, 65s. to 75s.; and Magnums, 80s. to 90s. per ton. Trade very bit.	
Mustard and Cress, punnet ...	0 4- ...
Onions, per bunch ...	0 5- ...
Parsley, per bunch ...	0 4- ...
Parsnips, per cwt. ...	4 0-5 0
— kidney, per cwt. ...	4 0-5 0
Shallots, per lb. ...	0 6- ...
Spinach, per bushel ...	2 6- ...
Tomatoes, per lb. ...	1 0- ...
Turnips, per bunch, new ...	0 5- ...

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Aralia Sieboldi, doz. ...	6 0-18 0
Chrysanthemums, doz. ...	0 9- ...
— large plants, each ...	2 0-4 0
Coleus, dozen ...	2 0-4 0
Cyperus, per dozen ...	4 0-12 0
Dracena terminalis, per dozen ...	30 0-60 0
— viridis, per doz. ...	12 0-24 0
Erica bymialis, doz. ...	12 0-24 0
— cafrica, dozen ...	6 0-12 0
— gracilis, dozen ...	8 0-12 0
Euonymus, in var., per dozen ...	6 0-18 0
Evergreens, in var., per dozen ...	6 0-24 0
Ferns, in var., doz. ...	4 0-18 0
Foliage plants, various, each ...	2 0-10 0
Ficus elastica, each ...	1 6-7 0
Fuchsia, doz. ...	3 0-6 0
Hyacinths, Roman, dozen pots ...	10 0-12 0
Liliums, var., doz. ...	18 0-30 0
Marguerites, doz. ...	6 0-12 0
Palms in var., each ...	2 6-21 0
Pelargoniums, scarlet, per dozen ...	4 0-9 0
Poinsettias, dozen ...	9 0-15 0
Primulas, per dozen ...	4 0-6 0
Solanums, dozen ...	9 0-15 0
Tulips, dozen pots ...	8 0-10 0

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Abutilons, 12 bun. ...	3 0-6 0
Azaleas, 12 sprays ...	0 9-1 0
Bouvardias, per bun. ...	0 6-1 0
Camellias, 12 blms. ...	3 0-4 0
Carnations, 12 blms. ...	2 0-3 0
Chrysanthemums, 12 blooms ...	0 6-3 0
— dozen bunches ...	4 0-12 0
Eucharis, per dozen ...	3 0-6 0
Gardenias, 12 blooms ...	4 0-6 0
Heliotropes, 12 spr. ...	0 6-1 0
Hyacinths, Roman, 12 sprays ...	1 0-1 6
Lapageria, 12 blooms ...	0 2-0
Lilac, white Fr., bun. ...	5 0-7 0
Marguerites, 12 bun. ...	3 0-6 0
Mignonne, 12 bun. ...	2 0-4 0
Narciss, paper-white, (French), 12 bun. ...	3 0-6 0
Pelargoniums, 12 spr. ...	1 0-1 6
— scarlet, 12 spr. ...	4 0-8 0
Primulas, double, 12 sprays ...	1 0-1 6
Roses, Tea, per doz. ...	1 0-3 0
— coloured, dozen ...	2 0-4 0
— red, per dozen ...	1 0-2 0
— Safrano, dozen ...	1 0-2 0
Stephanotis, 12 spr. ...	6 0-8 0
Tuberose, 12 blms. ...	0 9-1 6
Violets, 12 bunches ...	1 0-1 6
— dark, Fr., bunch ...	1 6-2 0
— Parme, Fr., bun. ...	3 6-1 0

PUBLICATIONS RECEIVED. — *Stephens' Book of the Farm*: Div. 1., new edition, by J. Macdonald (Edinburgh and London: W. Blackwood & Sons). — *The Practice of Forestry*, by C. Y. Michie (Edinburgh and London: W. Blackwood & Sons). — *The Rose Garden*, 9th Edition, by W. Paul, F.L.S. (London: Kent & Co.).

NOTICES TO CORRESPONDENTS.

"TABLE PLANTS AT FLOWER SHOWS.—We have received several letters from indignant and injured exhibitors concerning the awards made by judges at various shows this season, which we cannot find space for in our columns, nor is it desirable, in the interests of those most nearly concerned. We do not doubt but that much ill feeling amongst exhibitors of these plants would be spared them if the framers of schedules would define in clear terms what is intended by "table plants."

AMERICAN FIRMS: *H. C. (Beussls)*. We cannot recommend firms in the way you require, neither can we say in which town a young gardener would best succeed, but should think New York the most unlikely. You had better communicate with someone in the United States.

ARTIFICIAL MANURES: *Killernan*. Phosphate of magnesia, nitrate of soda, phosphate of lime. Prices can be obtained from any wholesale dealer in the manures.

BOOKS: *H. J. van Heyst, Greenhouse and Store Plants*, by T. Baines, is published by John Murray, Albermarle Street, London. Its price we do not know.—*Constant Reader*. Get *Botanical Names for English Readers*, by R. H. Alcock (London: L. Reeve & Co., Henrietta Street, Covent Garden).—*W. N. Craig, Insectivorous Plants*, by C. Darwin (London: J. Murray), is the book you should procure.

CRUSHED BONES: *Amateur*. The proportion in a soil poor in lime may be about 1 to 32, say 1 bushel to 1 cubic yard. Your Vine border at 2 feet by 1 square rod area will contain 20 cubic yards.

CYPRIPEDIUM: *J. B.* The twin flower is merely a sign of great vigour in the plant.

EUCCHARIS AMAZONICA: *J. N.* The warmth of your early Peach-house will not be high enough at the beginning to start these plants into bloom, but at a later date—say, after the fruits are set on the trees, and the sun's warmth has increased, and the Eucharis plants be plunged in the hotbed of leaves—it would doubtless bring out the flowers, provided a long period of rest has been afforded the plants. We may state for your information that some growers never remove their plants from the house they flower in to a cooler one to rest them, but simply give an enforced rest by withholding root waterings, meanwhile maintaining the daily syringe bath.

GALVANISED WIRE AND CLIMBERS: *J. T. S.* Plants certainly get injured by galvanised wire, but the danger of employing it for trellis-work is avoided by giving it two or three coats of paint before fastening the plants to it. Thin wire for covering walls on which fruit trees, &c., are to be trained should be of soft ungalvanised iron, which is much less brittle than the galvanised kind, and with ordinary care it will last unpainted for ten years or more.

GAS-STOVE: GRAPE AND FRUIT-ROOM: *G. F.* The Grapes decay either by reason of their being immature when cut, or because the temperature is too low, and the air heavy and damp. Make it warmer (45°) and drier by ventilation, drainage, &c. A gas-stove is not wanted in a room properly constructed. It should be kept cool and dark for Apples; for Pears, a degree or two more of warmth may be allowed. All fruit-rooms need ventilation when moisture is found to condense heavily on the fruit, and this should be given in dry weather, never when it is rainy or foggy.

GRAPES: *A Subscriber*. From your information we should think the border requires to be renewed, but your letter does not contain enough particulars as to treatment for us to form a correct opinion.

NAMES OF FRUIT: *J. T. P.* Your Pear is Doyenné Boussoch. — *A. B.* 1, Apple Kerry Pippin; 2, Eve, or Trumpington; 3, Rosemary Russet; 4, Lincolnshire Holland Pippin; 6, Pear Comte de Lamy. — *J. W.* 1, Glou Morceau; 2, Beurré d'Aremberg; 3, Suffolk Thorn; 4, Broom Park; 5, Doyenné du Comice; 6, London Pippin. — *W. Warren*. Your Apple is unknown and worthless. — *W. Haig*. 1, Comte de Paris; 2, Beurré Diel; 3, Hacon's Incomparable; 4, Beurré Sterckmans; 5, Beurré de Capiaumont; 6, Beurré Bosc. — *G.*

Watt. Doyenné Boussoch. — *Jno. Jones*. Grape, Madresfield Court. — *A. G. N.* 1, Hollandbury; 2, Beauty of Kent; 3, Round Winter Nonsuch; 4, Grange's Pearmain; 5, like Crimson Queening; 6, Adam's Pearmain. — *W. C.* 1, not recognised; 2, Triomphe de Jodoigne; 3, Striped Beaufin. — *A. N.* Apple, Ringer; Pear, Beurré Clairegeau.

NAMES OF PLANTS: *A. M.* Abies (or Picea) cephalonica. — *C. W. K.* That is strange. No. 1 is an indifferent variety of *Oncidium Forbesii*; and 2 is a fine variety which comes near to *O. Forbesii* Borwickiana, illustrated in *Gardeners' Chronicle*, p. 525, vol. xi., 1879. — *H. G. E.* We cannot name plants from such scraps; send better, and we will endeavour to comply with your wish. — *C. W. Strickland*. *Lachenalia pendula*. — *S. W.* *Maxillaria picta*. — *Subscriber*. 1, *Lastrea glabella*; 2, *Adiantum concinnum latum*; 3, *Polypodium appendiculatum*; 4, *Pteris serrulata*; 5, *Lomaria spicata*; 6, *Polypodium vulgare*; 7, *Blechnum occidentale*. — *W. F. C.* Piece of plant, *Pelargonium glutinosum*; Fern, *Pteris serrulata*. — *G. M.*, Paris, 1, not recognised; 2, *Oncidium* sp.; 3, *Phalenopsis rosea*; 4, not recognised; 5, *Odontoglossum constrictum*; 6, *Goodyera pubescens*. — *J. R.* *Stanhopea grandiflora* (Lindley). — *T. Heffer*. *Polypodium quercifolium*. — *J. Rigby*. Specimen quite insufficient.

NAMING PLANTS: *G. M.* We are always desirous to oblige our correspondents by naming specimens for them, but we must request them to furnish us with good specimens properly packed and in number not exceeding six at a time. As you say, some of the specimens sent were, indeed, in a bad state, and on arrival others were decayed beyond recognition. We never like to make guesses at a plant's name as it is unsatisfactory to all concerned and sometimes results in grave errors.

ODONTOGLOSSUM PULCHELLUM: *L. C.* We can find no record of your communications having been received by us either at the beginning of the year or in October. We "boycott" no one, but are always pleased to afford our correspondents the desired information with the least possible delay. Can you not send another flower?

OXFORD MARKET: *Robin*. We know of no market so called.

PEAR BEURRÉ SUPERIEUR: *W. Ingram*. The fruits, if small, were of delicious flavour. It should certainly not fail in any garden.

PALE SEEDS: *J. L. R.* These are sometimes to be picked up at the horticultural sale rooms. English nurserymen do not generally deal in them. Try Hurst & Co., wholesale seedsmen, Houndsditch, E.; or Hr. Strauss, Eberfeld, Cologne, Rhenish Prussia.

PEARS: *C. W. W.* The omission of name of place is, no doubt, to most persons a serious one. Our correspondent, "F. M.," was doubtless writing for gardeners who know what varieties of Pears will grow well in certain parts of England without usually requiring to be placed on a wall. As a general rule, it may be stated that few varieties, and these none of them very good ones, will grow without a wall on which to train them in parts north of the Humber. Even in the warmer parts of England and Ireland there are few Pears which are not the better for being so grown, although in sheltered walled-in gardens excellent fruits are obtained from espaliers, cordons, pyramids, &c.

RALEIGH AND THE POTATO: *H. Fincham*. An account of the Potato Conference and Exhibition is to be found in our issue for December 4, 1886. The Royal Horticultural Society was not engaged in that undertaking.

TERMS OF TENANCY: *One perplexed*. Your case is such a grave one, that you would only do yourself justice by taking proper legal advice. We cannot venture to advise, especially as you have had no agreement in respect of the holding.

TRAVELLING EXPENSES: *H. F.* You cannot claim them, but it is customary to reimburse the young gardener when he has been put to any expense in reaching his situation.

WALNUTS: *W. Collett*. The Nuts were unripe at the end of the season, that is all.

COMMUNICATIONS RECEIVED: — *J. E. P.* (next week). — *D. Crombie* — *J. E.* — *F. S.* & Co. — *E. J.* — *R. V.* & S. — *R. D.* — *W. Ingram* (next week). — *F. W. B.* — *W. C.* — *J. van V.* — *R. H. V.* — *J. Trotman*. — *D. J.* — *Dr. W. Schlich*. — *W. Jinks*. — *T. F. D.* — *H. W. W.* — *J. W. G. N.* — *Dobbie & Co.* — *W. C.* — *J. Y.* — *J. R. J.* — *A. D.* — *H. M.* — *J. G. B.* — *E. & F. N.*

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J. BENTLEY, Chemical Works, Barrow-on-Humber, Hull.

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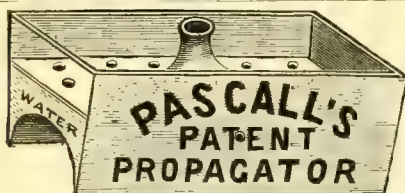
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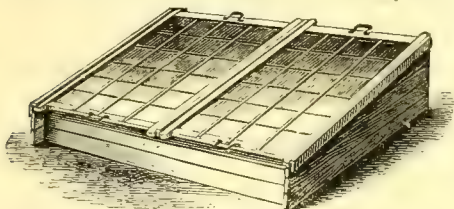
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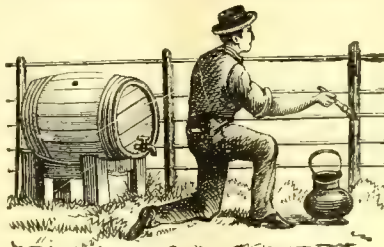
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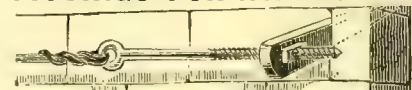
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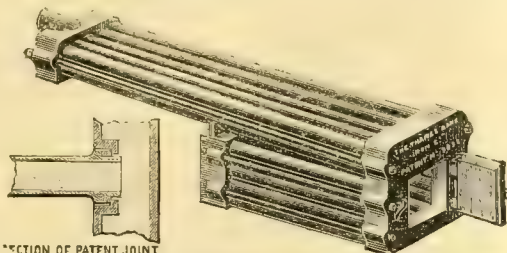
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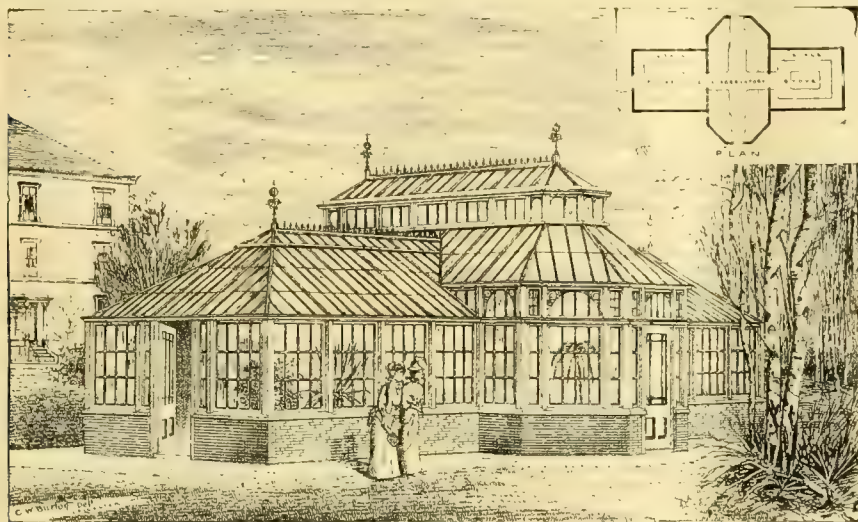
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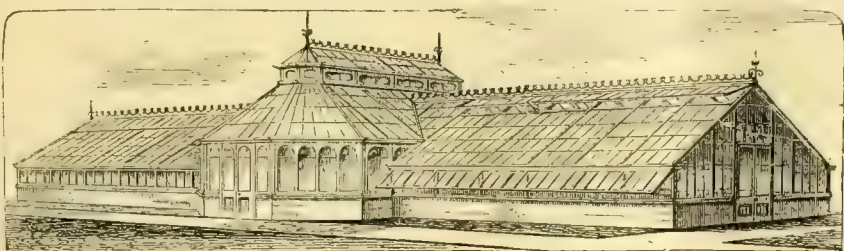
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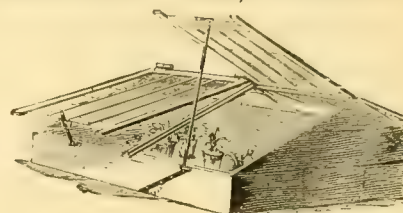
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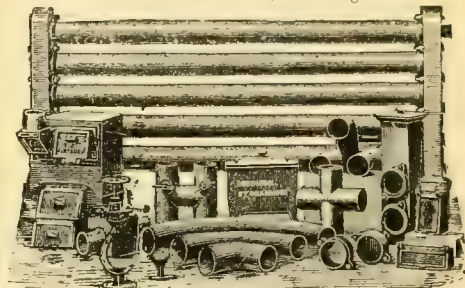
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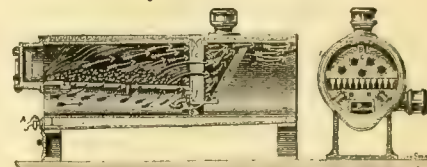
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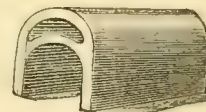
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J. H. FORD, Hon. Sec.

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HURST AND SON offer the above on behalf of Customers. Good Bulbs of best varieties. Prices and particulars on application.

152, Houndsditch, E.

SEED TRADE, 1888-9.

Before placing your Orders please write for our SPECIAL PRICES, which, owing to crops having proved better than expected, are exceedingly low.

HOWCROFT AND WATKINS, Seed Merchants, Covent Garden, London, W.C.

TO BE SOLD, cheap, about 11,000 large Stools of RHUBARB, the remaining stock of the late Mr. Martin. May be seen and particulars from

T. YOUNG, New Villas, Flodden Road, Camberwell, S.E.

C. L. BEGS TO INFORM his numerous Correspondents that HE HAS OBTAINED THE VOLUMES he was in want of.

LILIU AURATUM.—THE GOLDEN-RAYED LILY OF JAPAN can now be purchased in Cases containing 50 fine Bulbs, just as received from the Japanese Bulb Farms, unopened and unexamined, at 25s. per Case; sent Free to any Railway Station in England and Wales on receipt of Postal Order for 23s. 9d. Cases containing 100 fine Bulbs, price 40s. Fine and sound Bulbs per dozen, 4s., 6s., 9s., 12s., and 18s. Mammoth Bulbs per dozen, 3s. 6d. each. All sent packing and carriage free.
CARTERS', Royal Seedsmen by Sale of Warrants, 237 and 238, HIGH HOLBORN, W.C.

VAN MEERBEEK AND CO.,

HILLEGOM, near HAARLEM, HOLLAND,

GROWERS of DUTCH BULBS. Goods delivered entirely free to destination. No packing charges.

ENGLISH CATALOGUE gratis and post-free on application. Cheap prices.

DAFFODILS a SPECIALTY.—Barr's Daffodils should now be potted for Indoor Flowering, or planted out in beds, or naturalized in Orchards, Meadows, and Woods. Illustrated CATALOGUE free on application.
BARR AND SON, 12, King Street, Covent Garden, W.C.

Cape Bulbs—Cape Bulbs.

THE CAPETOWN BOTANIC GARDENS request their Trade Correspondents to forward their Orders for this seasons Bulbs as early as possible. Delivery in Jan. & Feb.
—A. F. BAXTER, Sales Depart., Botanic Gardens, Capetown.

EUONYMUS (Green).—50,000, all nice bushy well-grown Specimens, 9 to 36 inches, £1 to £10 per 100.
J. J. CLARK,
Goldstone Farm, Brighton.

WANTED, the Names of Growers who can supply in quantity EUCHARIS, GARDENIAS, STEPHANOTIS, LILY of the VALLEY, WHITE CAMELLIAS, and other CHOICE FLOWERS, as in season throughout the year. Cash will be sent when ordering.
Address, CHOICE FLOWERS, Messrs. Corry, Soper, Fowler & Co., 16, Finsbury Street, London, E.C.

MESSRS. GREGORY AND EVANS, NURSERYMEN, Sidcup, and 285, 286, 287, 288, Flower Market, Covent Garden, London, W.C., are open to RECEIVE CONSIGNMENTS of CHOICE CUT FLOWERS in any quantity for their Commission Department. Boxes and Labels supplied. Telegraph Address:—"COMMISSION, SIDCUP."

CHOICE FLOWERS and FRUIT. Highest Market Prices guaranteed. Prompt cash.

HENRY RIDES (late Wise & Rides), Fruit and Flower Salesman, Covent Garden, W.C.

SQUELCH AND BARNHAM, North Row, Covent Garden, W.C., are OPEN TO DISPOSE of any quantity of MUSCATS and BLACK GRAPES, TOMATOES, CUCUMBERS, FRENCH BEANS, STRAWBERRIES, CHOICE FLOWERS, &c. Highest Market Prices obtained. Account Sales daily; cheques weekly, or as preferred by Sender. Baskets and Labels supplied. References given.

WANTED, STEPHANOTIS, EUCHARIS, ORCHIDS, ROSES, CHRYSANTHEMUMS, and other Choice CUT FLOWERS. Best Market Prices returned. Address S. HILL, Jun., 21, Charlotte Street, Fitzroy Square, W., and Covent Garden Flower Market, W.C.

CUT CHRYSANTHEMUMS.—WANTED, Consignments of above.—FREDERICK WISE (late Wise & Rides), Flower Market, Covent Garden, W.C.

WANTED, Special CUT FLOWERS, packed with care. Send sample, or by dozen—post or train. Best price for good things. Cash prompt.
W. RAVENHILL, Floral Salesman, 157, Norwood Road, Herne Hill, S.E.—Post parcels can be sent to 167, Praed Street, W.

THE GARDEN ANNUAL, ALMANACK, and ADDRESS BOOK for 1889. The most Complete and Accurate Reference Book for the use of all Interested in Gardens yet published. The Alphabetical Lists of all Branches of the Horticultural Trade have been corrected up to the 10th of November. The Lists of Gardens and Country Seats (containing over 7900), have been very carefully and extensively revised, and are admitted to be the most complete ever published. Price 1s.; post-free 1s. 3d.—Of all Booksellers, Newsagents, Nurserymen and Seedsmen, or from the Publishing Office, 37, Southampton Street, Covent Garden, London, W.C.

SUTTON'S AMATEUR'S GUIDE for 1889 will be ready December 20. Price 1s., post-free. Beautifully Illustrated with Coloured Plates of Sutton's Gloxinias, Sutton's Primulas, Sutton's Tomatoes, and a Photograph representing a House of Sutton's Hero of Lockinge Melon (grown by Mr. J. H. Goodacre). A very useful Christmas Present for all interested in Gardening.
SUTTON AND SONS, Royal Seed Establishment, Reading.

NEW BRUSSELS SPROUTS.

"DIXON'S PRESIDENT CARNOT." Price 2s. 6d. per Packet, post-free.

JOHN ETHERINGTON DIXON, SEED MERCHANT, Lord Street, GAINSBOROUGH. For further particulars, see Advertisement in December 1, 1888. Wholesale Agents—Messrs. HURST AND SON, 152, Houndsditch, London, E.; and Messrs. COOPER, TABER AND CO. (Limited), 90, Southwark Street, London, S.E.

The Best Present for a Gardener.

VINES and VINE CULTURE. The most complete and exhaustive Treatise on Grapes and their Culture ever published.

New Edition.
Price 5s., post-free 5s. 6d.
A. F. BARRON, Royal Horticultural Society, Chiswick.

ORCHIDS a SPECIALTY.—See New Illustrated CATALOGUE, post-free on application.
FRED HORSMAN AND CO., Colchester.

LILY OF THE VALLEY, fine Forcing Crowns or Clumps; SPIRÆA JAPONICA, DIELYTRA SPECTABILIS, HYDRANGEA PANCULATA GRANDIFLORA, &c. Price and samples on application.
WILLIAM DENMAN, 7, Catherine Street, Covent Garden, W.C.

BARR'S SPRING-FLOWERING BULBS should now be potted for Indoor Flowering, or planted out in beds, borders, or naturalized in Orchards, Meadows, Woods, &c. CATALOGUE on application. Abundance of Bedding HYACINTHS, TULIPS, CROCUS, SNOWDROPS, ANEMONE FULGENS, &c., in fine condition.
BARR AND SON, 12, King Street, Covent Garden, W.C.

VIOLETS.—Marie Louise and Comte Brazza. Extra-large selected clumps (from open), full of bloom and bud, 20s. per 100; special quotations per 1000. Cash with order.—JOHN ROBERTS, The Gardens, Tan-y-Bwlch, R.S.O., North Wales.

DICKSON'S IMPROVED MUSHROOM SPAWN, most superior, now reduced to 5s. per bushel of 14 cakes. Circular with Cultural Notes and List of Testimonials post-free on application.
DICKSONS (Limited), The Royal Seed Warehouse, CHESTER.

NICOTINE SOAP.—An effectual eradicator of all insect pests affecting plants, without injury to foliage. Jars, 1s. 6d., 3s., 5s. 6d.; Tins 15s. 6d., 25s., 35s. All See Ismen and Florists.

THOMSON'S IMPROVED VINE and PLANT MANURE.—This valuable Manure is made only by us. Every bag and tin has our name on it. To be had of all Nursery and Seedsmen, and direct from us. 1 cwt. and over carriage paid. London Agents—Mr. GEORGE H. O. Victoria Road, Putney. WM. THOMSON AND SONS, Clovenfords, Galashiels, N.B.

PASTUPLANTA, the best Artificial Manure. It enriches the soil with the fertilisers drawn from it by plants; no unpleasant smell; admirably adapted for all pot plants. In bags; 112 lb., 19s.; 56 lb., 11s. 3d.; 28 lb., 6s. 9d.; 14 lb., 4s.; 7 lb., 2s. 3d. In tins, 1s. each. Sole Manufacturers, PHILIP HARRIS AND CO. (Limited), 9, Bull Ring, Birmingham.

SALES BY AUCTION.

Barnet, N.

In the High Court of Justice, Chancery Division,
Cornwall v. Cornwall.

SIX DAYS' CLEARANCE SALE of the whole of the extensive
and well-grown NURSERY STOCK and GREENHOUSE
PLANTS.

MESSRS. PROTHEROE AND MORRIS (the
persons appointed by Mr. Justice Stirling, the Judge
to whose Court the cause is attached) will SELL by AUCTION,
on the Premises, the Hadley Nursery, High Street, Barnet, and
the Common Nursery, Barnet Common, within a short distance
of the High Barnet Railway Station, on MONDAY, December 10,
and five following days, at 12 o'clock punctually each day, the
whole of the unusually well-grown NURSERY STOCK and
GREENHOUSE PLANTS, including the following:—

20,000 Conifers, of sorts	10,000 Standard Roses
500 Specimen Conifers	10,000 Dwarf Roses
3,500 Aucubas	1,000 Standard Roses, Gloire de Dijon
3,000 Laurels	10,000 Privet
2,000 Green and Variegated Hollies	3,000 Fruit Trees
6,000 Iives	6,000 Gooseberries and Currants
5,000 Standard Ornamental Trees	6,000 Fruit Stocks
1,500 Eucalyptus	2,500 Tea Roses, in pots
6,000 Fruit Trees	250 Camellias and Azaleas

and large quantities of other Stock.

Grey MARE, 4 CARTS, Spring VAN, HARNESS, UTENSILS
in Trade, &c.

May be viewed one week prior to the Sale. Catalogues may
be obtained at the Home Nursery, High Street, Barnet; of
Messrs. HOUGHTON and BYFIELD, Solicitors, 55, Grace-
church Street, E.C., and Barnet; of Messrs. MONTAGU-
SCOTT and BAKER, Solicitors, 10, Gray's Inn Square, W.C.,
and Hatfield; and of the Auctioneers and Valuers, 67 and 68,
Cheapside, E.C., and Leytonstone, E.

Monday Next.—The Hadley Nurseries, Barnet, N.
VALUABLE LEASEHOLD INTEREST.

MESSRS. PROTHEROE AND MORRIS will
SELL by AUCTION, on the Premises, the Hadley
Nurseries, High Street, Barnet, N., on MONDAY NEXT,
December 10, at 12 o'clock precisely, immediately preceding
the Sale of the Stock, the VALUABLE LEASEHOLD PROPERTY,
comprising 5½ acres of Land, eight Greenhouses, Dwelling-
house, and Seed Shop, held at a very moderate Ground Rent.

The Sale presents an unusual opportunity to any one desirous
of securing a First-class Nursery, as the whole of the Stock
will be disposed of by Auction, thus enabling the Purchaser
to secure only such items as may be necessary for continuing
the business.

Dutch Bulbs.—Monday and Thursday Next.
GREAT UNRESERVED SALES.

MESSRS. PROTHEROE AND MORRIS will
SELL by AUCTION, at their Central Sale Rooms, 67
and 68, Cheapside, London, E.C., on MONDAY and THURSDAY
NEXT, December 10 and 13, at half-past 11 o'clock precisely,
extensive quantities of first-class HYACINTHS,
TULIPS, CROCUS, NARCISSUS, and other BULBS from
Holland in lots to suit large and small Buyers.

On view morning of Sale, and Catalogues had.

N.B.—The Sale on Thursday Next will include about 400
lots of first-class HYACINTHS, TULIPS, and CROCUS, being
the surplus selected Stock of a London Seed-man.

Tuesday Next.

New ODONTOGLOSSUMS, received direct, for Unreserved
Sale.

MESSRS. PROTHEROE AND MORRIS will
SELL by AUCTION, at their Central Sale Rooms, 67 and
68, Cheapside, London, E.C., on TUESDAY NEXT, Decem-
ber 11, at half-past 12 o'clock precisely, 8 Cases, containing
about 3000 plants of ODONTOGLOSSUMS, described by the
sender as being new. The vendor writes that these Orchids
are quite unknown in Europe, and were found in a cold region
about 8000 to 9000 feet above the sea-level. They bloom in
July and August, grow very freely, and have a large variation
in the flowers. Dried flowers will be shown at the time of
Sale.

The Sale will also include a quantity of imported ODONTO-
GLOSSUM ALEXANDRE, and other ESTABLISHED and
SEMI-ESTABLISHED ORCHIDS, from Mr. G. T. White; and
about 100 lots of various ESTABLISHED ORCHIDS and other
PROPERTIES.

On view morning of Sale, and Catalogues had.

Tuesday Next.

English-grown CAMELLIAS and AZALEAS, and a fine assort-
ment of GREENHOUSE PLANTS, Standard and Dwarf
ROSES of the best sorts, selected FRUIT TREES, Hardy
EVERGREENS, DUTCH BULBS, &c.

MESSRS. PROTHEROE AND MORRIS will
SELL the above by AUCTION, at the City Auction
Rooms, 33 and 39, Gracechurch Street, E.C., on TUESDAY
NEXT, December 11, at half-past 12 o'clock precisely.

On view morning of Sale, and Catalogues had at the Rooms;
and of the Auctioneers, 67 and 68, Cheapside, London, E.C.;
and Leytonstone, E.

Wednesday Next, December 12.

15,000 LILUM AURATUM, 20,000 Crowns LILY of the
VALLEY, BARKS DAFFODILS, English-grown
LILIES, JAPANESE IRIS, 500 AZALEAS and CAMEL-
LIAS from Belgium, STOVE and GREENHOUSE
PLANTS in variety, SPIREA JAPONICA, various
HARDY BULBS, Standard and Dwarf ROSES from
English nurseries, &c.

MESSRS. PROTHEROE AND MORRIS will
SELL the above by AUCTION, at their Central Sale
Rooms, 67 and 68, Cheapside, London, E.C., on WEDNESDAY
NEXT, December 12, at half-past 12 o'clock precisely.

On view morning of Sale, and Catalogues had.

Wednesday Next.—Great Sale of Lilium auratum.

Important to the Trade. 15,000 splendid Bulbs, just received
from Japan, in excellent condition, and a consignment of
various other LILIES.

MESSRS. PROTHEROE AND MORRIS
will SELL the above by AUCTION, at their Central Sale
Rooms, 67 and 68, Cheapside, London, E.C., on WEDNESDAY
NEXT, December 12, at half-past 12 o'clock, precisely, without
reserve.

On view morning of Sale, and Catalogues had.

Friday Next.

1400 PHALENOPSIS REGNIERII, AERIDES MITRATUM,
CYPRIPEDIUM LAWRENCIANUM, direct importations
for Unreserved Sales.

MESSRS. PROTHEROE AND MORRIS will
SELL by AUCTION, at their Central Sale Rooms, 67 and
68, Cheapside, London, E.C., on FRIDAY NEXT, December 14,
at half-past 12 o'clock precisely, 8 cases of CYPRIPEDIUM
LAWRENCIANUM, also 1400 PHALENOPSIS REGNIERII,
and 2 cases of AERIDES MITRATUM. These plants have
arrived in excellent condition and will be sold without reserve.

Also about 200 lots of ODONTOGLOSSUMS and other
IMPORTED ORCHIDS, from Messrs. Shuttleworth, Carder &
Co., and about 100 lots of various ESTABLISHED ORCHIDS.

On view morning of Sale, and Catalogues had.

Cypripedium insigne Horsm nianum.

MESSRS. PROTHEROE AND MORRIS beg
to announce that the whole Stock of this beautiful
new variety, named by Dr. Reichenbach, and described in
Gardeners' Chronicle, December 15, will be offered for SALE
at their Rooms in about three weeks. The plant has been
divided into six, but each plant represents two plants. These,
together with other new plants from Messrs. F. Horsman &
Co., will be fully advertised later on.

Sales by Sample.

MESSRS. PROTHEROE AND MORRIS
desire to announce that their NEXT SALE by SAMPLE
will take place on TUESDAY, December 18, for which they
will be glad to RECEIVE NOTICE OF ENTRIES as soon as
possible.

Orchids in Flower.—Friday, December 21.

MESSRS. PROTHEROE AND MORRIS
desire to announce that their NEXT SPECIAL SALE of
ORCHIDS in FLOWER will take place as above, for which
they will be glad to RECEIVE NOTICE OF ENTRIES as
early as possible.

Monday Next.—(Sale No. 7820.)

About 500 lots of First-class BULBS, just received from Hol-
land, in splendid condition for present planting, consisting
of Double and Single Hyacinths, Tulips, Crocuses, Nar-
cissus, Scillas, Snowdrops, Anemones, Ranunculi, Ixias,
Sparaxis, Gladioli, Liliums, Spiraea japonica, Lily of the
Valley Crowns for Forcing, &c.

MR. J. C. STEVENS will SELL the above
by AUCTION, at his Great Rooms, 38, King Street,
Covent Garden, W.C., on MONDAY NEXT, December 10, at
half-past 12 o'clock precisely.

On view morning of Sale, and Catalogues had.

Wednesday and Saturday Next.

Choice Dwarf-trained and Pyramid FRUIT TREES, several
hundred First-class Standard and Dwarf ROSES, Hardy
ORNAMENTAL SHRUBS and CONIFERS; BORDER
PLANTS in great variety; LILY of the VALLEY in
Crowns and Clumps; SPIREA JAPONICA; several
hundred lots of BULBS just received from Holland, in
splendid condition for present planting, comprising
Hyacinths, Tulips, Crocuses, Snowdrops, Narcissus, Daffo-
dils, Scillas, Anemones, Gladioli, Lilies, &c.

MR. J. C. STEVENS will SELL the above
by AUCTION, at his Great Rooms, 38, King Street,
Covent Garden, W.C., on WEDNESDAY and SATURDAY
NEXT, December 12 and 15, at half-past 12 o'clock precisely
each day.

On view morning of Sale, and Catalogues had.

Thursday Next.—(Sale No. 7823.)

5000 splendid Bulbs of LILUM AURATUM, just received
from Japan in the finest possible condition, 5000 Double
SOUTH AFRICAN TUBEROSES, TERRESTRIAL OR-
CHIDS, &c.

MR. J. C. STEVENS will include the above
in his SALE by AUCTION at his Great Rooms, 38, King
Street, Covent Garden, on THURSDAY NEXT, December 13.

On view morning of Sale, and Catalogues had.

Thursday Next.—(Sale No. 7823.)

SPECIAL SALE OF ORCHIDS in FLOWER and BUD.
MR. J. C. STEVENS will SELL by
AUCTION, at his Great Rooms, 38, King Street,
Covent Garden, W.C., on THURSDAY NEXT, December 13,
at half-past 12 o'clock precisely, a fine Collection of ORCHIDS
in FLOWER and BUD, comprising fine splendid plants of
Lycaste Skinneri alba, two of which have over 40 buds each,
with many spikes; a fine specimen plant of Caelogyne Mas-
sangana, choice Cypripediums, Lelia anceps Barkerii, Den-
drobium nobile, Cattleyas, Oncidium, Calanthes, &c.

On view morning of Sale, and Catalogues had.

Japan Lily Bulb Sale.

MESSRS. EDWARD BARBER AND CO.
will offer at the London Commercial Sale Rooms,
Mincing Lane, E.C., on MONDAY, December 17, at 2 P.M.,
in original packages, and without reserve, a choice Collection
of about 230 Cues of assorted JAPAN LILY ROOTS,
comprising:—

Lilium longiflorum,	Lilium lancifolium rubrum,
Lilium tigrinum,	Lilium auratum.
Lilium lancifolium album,	

Just received direct from Japan.
The goods will be on show at the Warehouse, and Catalogues
and full particulars will be had prior to and on the day of
Sale, of EDWARD BARBER AND CO., Colonial Brokers,
32, Fenchurch Street, E.C.

Cheap Bulb Sales.

MESSRS. SMAIL AND CO. will SELL by
AUCTION, at 123, Fenchurch Street, City, E.C.,
every MONDAY, WEDNESDAY, and FRIDAY, at 12 o'clock
each day, large consignments of LILUM AURATUM, LILY
OF THE VALLEY, DUTCH BULBS, &c., specially lotted
to suit all buyers.

Horticultural Auction Rooms, 123, Fenchurch Street, E.C.

**A very choice and varied assortment of Greenhouse,
CONSERVATORY, STOVE, SPECIMEN, and TROPICAL
PLANTS, PALMS, FERNS, &c., including Eucharis,
Hoyas, Pot-Roses, Azaleas, Camellias, Daphnes, Lupa-
rarias, several thousand pots of Primulas, Cinerarias,
Cyclamens, and Herbaceous Calceolarias, Lilium, including
auratum, and Bedding-out Plants generally; Garden
Tools, Outdoor Effects, &c.**

MESSRS. E. AND H. LUMLEY will SELL
the above by AUCTION, at Mitcham Hall, Mitcham,
Surrey, on FRIDAY, December 14, at 12 o'clock.
Catalogues at 22, St. James's Street, S.W.

FOR DISPOSAL, a well-established
FRUITERER and FLORIST'S BUSINESS; capital Shop
and House. Lease 20 years. Taking £2000 per annum;
Family Trade. Price on application.

FRUITERER, 41, Wellington Street, Strand, W.C.

To Market Gardeners, Florists, Nurserymen, &c.

HAMPTON-ON-THAMES.

FOR SALE, choice FREEHOLD LAND, in
Acre Plots, suitable for above. Rich Garden Soil with
gravel and sand sub-soil. The land is considered by the Trade the
finest near London for Grapes and all other Market Products.
Apply, SECRETARY, Estates Investment and Villa Farm
Company, Estate Office, Tangle Park, Hampton-on-Thames.

South of England.

LARGE GARDEN, 20 Acres, with Twenty
Greenhouses and Vineries. £7000 has been spent on the
property. Seven years' lease. Two Cottages inclusive. £150
a year.

ELDRIDGE, Portsmouth.

TO BE LET, NURSERY, Lancashire, not far
from Liverpool, as a going concern in full working order;
stock at a fair valuation. About 2000 feet of Glass and half an
acre of Land. Rent low. Good opportunity for anyone wishing
to commence a business with only small capital.—T. D. C.,
Gardeners' Chronicle Office, 41, Wellington Street, Strand, W.C.

To Nurserymen, &c.—North of England.

TO LET, from January 1, 1889, the
VINERIES, PEACH ORCHARD, CONSERVATORY
and FORCING HOUSES, with KITCHEN GARDEN and
COTTAGE adjoining.
Apply to Mr. W. H. SCAIFE, Dock Office, West Hartlepool.

TO LET, a MARKET GARDEN, about
4 acres, close to Eton College, where a large business
has been done, containing Cottage, Mushroom and Forcing
House, Show House, and 2 large Greenhouses stocked with
Peach Trees and Vines; a large range of Pits, Stables, Barn,
Dairy, Piggeries, and Out-house.
Enquire, Mr. MARTIN, Castle View, Slough.

ORCHIDS.

THE LIVERPOOL HORTICULTURAL CO.

(JOHN COWAN), Limited,

Have just received fine importations of the following

ORCHIDS:—

MAXILLARIA SANDERIANA,
ODONTOGLOSSUM POLYXANTHUM,
CYPRIPEDIUM LAWRENCIANUM,
&c., &c., &c.

Circular with full particulars on application.

**THE VINEYARD AND NURSERIES,
GARSTON, LIVERPOOL.**

FOR SALE, 10,000 GENISTAS, in 3-inch
pots, at 10s. per 100. Prices to the Trade on application.
20,000 well-rooted cuttings of Genistas, at 5s. per 100. FERN,
Lomaria gibba, out of thumb-pots, 5s. per 100; out of boxes,
2s. 6d. per 100, sent on by Parcel Post.

Money Orders payable at Leyton Green.

T. BALDWIN and SON, Edith Nursery, Burchall Road, Leyton.

SPECIAL OFFER.—500,000 LARCH FIR,
1½ to 2 feet, and 15 to 18 inches; SCOTCH FIR, 1½
to 2 feet, and 15 to 18 inches; THORN QUICK, 4 and 5 inches,
fine; Common and Portugal LAURELS, and other General
Nursery Stock. For particulars and price apply to
ISAAC MATTHEWS and SON, Milton, Stoke-on-Trent.

"R. H. ELLIOT."—Strong rooted layers of
this very fine new yellow-ground CARNATION,
which has this autumn (wherever exhibited) been awarded
Four First-class Certificates. Full particulars on application.
3s. 6d. each, 6s. 6d. per pair.

LAING and MATHER, Nurserymen, Kelso, Scotland.

To the Trade.

SEED POTATOS.

H. AND F. SHARPE'S Special Priced List of
SEED POTATOS will be issued in a few days. In the
meantime they will be pleased to give quotations for any varie-
ties their friends may require.

Seed Growing Establishment, Wisbech.

THE METROPOLITAN BOARD OF WORKS will meet at the Office of the Board, Spring Gardens, S.W., on FRIDAY, the 11th day of January, 1889, at Twelve o'clock at noon, and will then be prepared to OPEN TENDERS by persons who may be willing to contract for completing the LAYING OUT OF DULWICH PARK, Dulwich, in the County of Surrey. Persons desirous to submit Tenders may obtain copies of the Drawings and Specifications (with Form of Tender) on payment of three guineas. Application to be made at the Office of the Superintending Architect of the Board, at Spring Gardens, between the hours of Nine A.M. and Four P.M. (or on Saturdays between the hours of Nine A.M. and Two P.M.), until Thursday, the 10th day of January, 1889. The Tenders, which must be on the form supplied from this Office, and be addressed to "The Clerk of the Board," and endorsed "Tender for Works, Dulwich Park," are to be delivered at the Office before Four o'clock on the last-mentioned day, and no Tender will be received after that hour. The parties tendering must be in attendance at the Board, at Twelve o'clock on the 11th January, 1889. Any Tender which is not fully filled up in every particular will be rejected.

The Board do not bind themselves to accept the lowest or any Tender.

J. E. WAKEFIELD, Clerk of the Board.
Spring Gardens, S.W., December 6, 1888.

CHRYSANTHEMUMS a Specialty. Awards at Crystal Palace and Brighton. W. RAY AND CO.'S CATALOGUE is now ready, post-free. Cuttings, general collection, 1s. 3d. per dozen, all healthy, strong, and true to name. W. R. & Co. make a special selection of New Varieties, see Catalogue.—Mount Pleasant Nursery, Green Street, Sittingbourne.

Celeries—Celeries—Celeries.
WRIGHT'S Grove Red, Grove Pink (syn. Clayworth Prize), Grove White, and Giant White CELERIES. Prices on application.
W. WRIGHT, Seedsman, Retford.

ROSES! ROSES!! ROSES!!!—The best and cheapest in the World. 40 choice Perpetuals for 21s. Purchaser's selection from 400 best varieties. CATALOGUES free on application. Ten acres of Roses, 100,000 grand plants to select from.
JAMES WALTERS, Rose Grower, Exeter.

ABIES AMABILIS, True, and other North American Seeds and Plants collected personally by WILLIAM STEWART, 28, Esplanade, Greenock, Scotland. Price LIST and Samples on application.

SPECIAL OFFER.—ENGLISH YEWS, fine bushy plants, 2 to 3, 3 to 4, 4 to 5 feet, well furnished; CUPRESSUS LAWSONIANA, 2 to 3, 3 to 4 feet; also ERECTA VIRIDIS, 1½ to 2 and 2 to 3 feet, fine.
MATTHEWS AND SON, Milton, Stoke-on-Trent.

PINES FOR SALE.—Large stock of Fruiting and Successions; clean, healthy, and well-grown Plants. For further particulars apply to
T. LLOYD, Head Gardener, Pentre, Boneth, R. S. O., South Wales.

30,000 DWARF ROSES.—Cheaper than ever. All the best leading varieties. Warranted true to name. The best money can buy. Sample dozen from 3s.; 22s. per 100—packing free for cash with order. Send for a LIST.
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HALF-SPECIMEN STEPHANOTIS, free-flowering variety, very fine stuff, 10 to 12 feet; also 25,000 ACUBAS, all sizes. For particulars apply to
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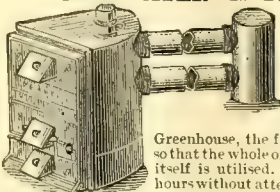
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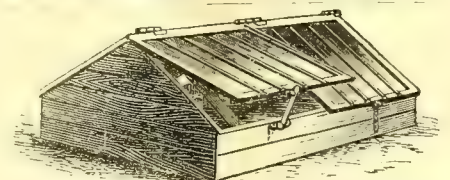
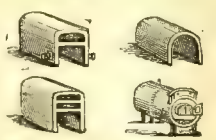
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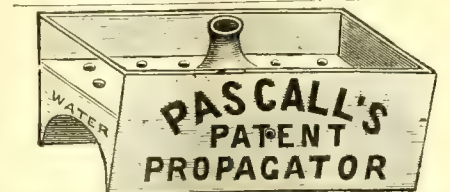
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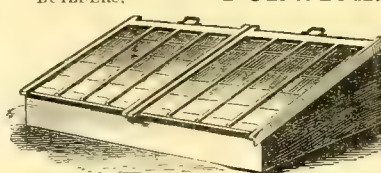


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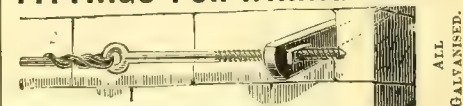
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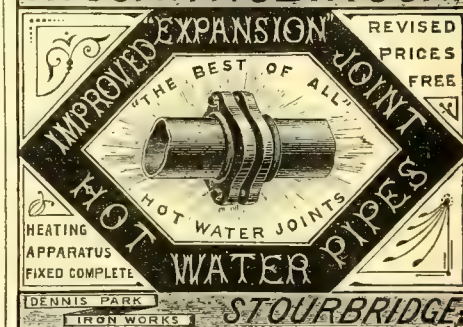
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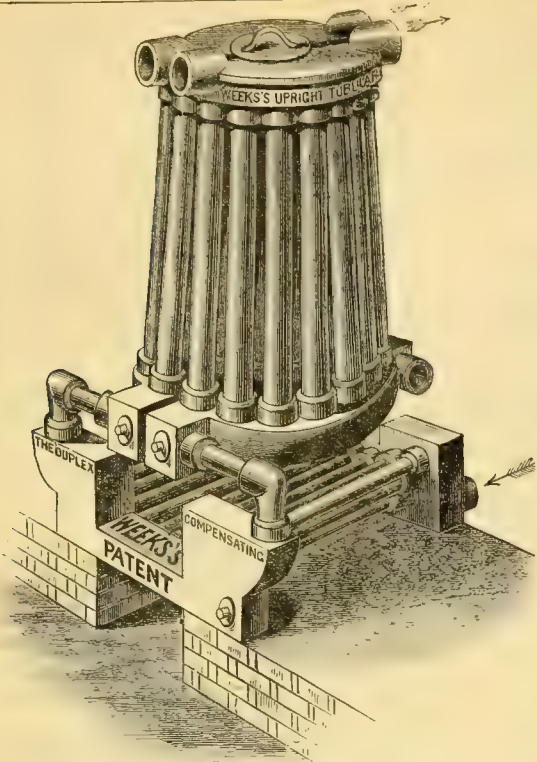
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SCHWEDLERII, 12 to 16 feet; A. WORLEYII, Standards, 12
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BIRCH, Silver, 12 to 16 feet. CHESTNUT, Horse, 14 to 16 feet.
Double White, 10 to 16 feet; Scarlet, 12 to 16 feet; Spanish,
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LIQUIDAMBAR, 6 to 10 feet. MAPLE, Norway, 14 to 16 feet.
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As a Supplement

TO THE

GARDENERS' CHRONICLE

FOR

Next Week, December 15,

WILL BE

Published an Ink Photograph

OF A FEW

FIGS (FICUS ROXBURGHII),

CALCUTTA BOTANIC GARDENS.



THE

Gardeners' Chronicle.

SATURDAY, DECEMBER 8, 1888.

NOVEMBER IN THE GARDEN.

HOW good the saints have been to us this year! One after the other they have given us their little summers; St. Michael, St. Luke, and St. Martin (only that St. Martin's seems to have begun earlier than usual), so that now, in the middle of November, its dark hours are quite lit up by the blossoms in the garden.

Although sharp frost, with snow in many parts on October 1, took from us all tender plants, yet the soft sunlit days that succeeded enriched and prolonged the blossoming of all hardy flowers.

To-day, after a wild storm from the south, the air is soft and balmy. The robin sings in the old Apple tree, among whose yet unfallen amber leaves are twisted sprays of purple Clematis. The crested wren darts here and there among the branches, resting still a moment or two to warble forth her few low, flute-like notes. The thrushes hop leisurely over the close mown grass, and the blackbirds hurry from the fragrant Escallonia bushes with their noisy, startled cry. Let us look around and see what flowers are left us in the heart of November.

Being constantly wind-swept, the walk down the middle of the garden affords the most shelter, for wherever the wind strikes the walls and rebounds with added force there is blackness and destruction to plant life. Thus, in the very centre, are placed our greatest treasures, sure that there they will find the most protection, and utmost calm that is possible on a storm-beaten lull.

On either side of this walk is a broad border filled with old-fashioned flowers, arranged in large groups of colours. Although the position of each plant has been thought over, and planned with regard to its neighbour, the whole effect is that of the most natural and simple possible, no trace of design remaining apparent; on the con-

trary, the flowers look as if tossed from Nature's lap. At the back of the border is a trellis with various climbing plants, and Roses flinging over it their wild wreaths of glossy foliage, still sprinkled with the buds and blossoms of the old Gloire de Dijon, Rêve d'Or, Safrano, and W. A. Richardson. These deep bronzy-leaved Roses make a beautiful background, and how valuable that ever is! Just now the Marguerites are shining out from it in a mass of starry-white blossoms, and Chrysanthemum Madame Desgranges looks like clustered snowflakes, while long-growing white Pansies remind one of the fluttering butterflies of June. How noticeable the healthy vigour of Pansy plants from cuttings made each year in the month of May, from those left undisturbed from one year to the other. *Helleborus maximus*, the earliest of its race, is in full blossom. The *Malva* bears its milk-white flowers above its rich green leafage. *Cyclamens* and *Iberis* clothe the ground beneath, while from the Primrose tufts peep out already the double white buds.

From the abundant summer moisture, *Schizostylis coccinea* is much finer than usual. Large patches of it, with several dozen flowering-spikes open together, are very striking, with their fire-light glow, especially if near the winter Jessamine, that has let fall all its summer leaves to be replaced by golden blossoms along its brown green stems.

The *Schizostylis* well repays division in early spring and replanting in rich soil, for if let remain in clumps for any length of time, the centre dwindles, and only the outer rootlets that run on into fresh soil bear vigorous flower-stalks. For indoor gathering this plant is invaluable, as the blossoms open out in water one after the other, and only need to have the withered ones removed to continue fresh and bright for a considerable time. The old China Roses, though always valued, seem more to be prized this month than any other in which they bloom, their hardy constitution resisting rough weather, and their blossoms content to expand in the slant rays of sunlight from which warmth is fast waning. How cheerful are their clusters of dainty crimson buds! How fresh and delicate the petals of the expanded blooms! How firm and glossy the deep green foliage! Near to these China Roses are pink Chrysanthemums, *Anemone japonica*, and *Erigeron roseum*, with its pink silken fringe and soft eye of gold. *Lobelia fulgens*, though storm-tossed, still bears its fine bronzed foliage unharmed. With moisture and rich soil this is a really noble plant, but if placed in the vicinity of hungry neighbours, it makes no effort for itself, and the ill-effect is seen in weak growth. Given a covering of leaf-mould, it remains here safe all winter in the open ground. Low growing Fuchsias and Carnations yet linger, while crimson-stained Polyantheses are pushing up through their thick-set leaves side by side with the autumn Cyclamens.

The Agapanthus Lily, now past its best, has been beautiful, [surrounded by *Agathæa cœlestis*, whose charming shade of blue just matches that of the African Lily. This Daisy seeds freely, and a boxful sown in autumn, wintered in a cold frame, and pricked off into small pots, will give nice little sturdy plants for the open ground in May. The blue butterfly blossoms of *Linum provinciale* still hover around it. This is the best of the blue Flaxes, constant in bloom, of a compact growth and pleasant foliage. Stray Campanula blossoms are still to be found, and little sprays of Forget-me-Not wander here and there.

Michaelmas Daisies have been especially fine in all their varying shades of blue, mauve, and amethyst. Divided each spring, replanted in rich soil and with only a few stems left, the flowers are so much larger, and the branched growth so much prettier, that one hardly recognises them as the same plants which one generally sees tied to a stake in a thick mass like a broom—enough to disfigure any flower border. The

double lilac *Colchicums* are still in flower, they have made a spring bulb bed very beautiful since October began, having with them *Cyclamen hederifolium*, whose purple-pink blossoms blend with those of the autumn *Crocus* admirably. These *Cyclamens* form a thatch over a border of Hyacinths, that spring up in profusion between the corms in their own season.

Melladores, the Roman *Ranunculus*, have been quite a feature in the garden this autumn. From seed sown in spring and grown quickly on, they, like the *Anemone coronaria*, begin to blossom in August or September. No doubt their flowers will yield to the first heavy frost, as they have not the fine resisting power of the *Anemones*. These Melladores are of a clear yellow, gold colour, slashed with chestnut-red and pure crimson. Spring and autumn have indeed met together in the garden when I gather these *Ranunculus* with a handful of yellow Oxlips and sweet Violets, and see around me the Chrysanthemum, late Roses, the Cactus Dahlia, and *Datura sanguinea*. These latter two had their young leaves blackened on October 1, but have since recovered.

As the *Helianthus* blossoms are fading the *Doronicums* spring up anew, with fresh flowering stems that bear large, gold-edged blossoms. The yellow Daisy, *Etoile d'Or*, is covered with bloom. Gold and orange-brown *Calceolarias* are yet fine, tall yellow Chrysanthemums are letting fall their weight of blossom beside the *Rudbeckias*, and the old yellow *Auriculas* are pushing up their powdered heads.

Sunshine, and flowers such as I have not counted over, make bright the hours of "dark November." *L. A. L.*

NEW OR NOTEWORTHY PLANTS.

LILIUM (ARCHELIRION) HENRYI, Baker, n. sp.*

The two parts of the world from which new and interesting plants are at present pouring in at the most rapid rate are Western China and Madagascar. We have just received at Kew from our indefatigable correspondent, Dr. Henry, a fine series of dried specimens of Lilies of the province of Ichang. Amongst them are *L. giganteum*, *L. tigrinum*, *L. longiflorum*, *L. Brownii*, and a fifth species which is evidently new, and which I propose to name after its discoverer. In general habit it most resembles *tigrinum*, but the fully-developed leaves more recall those of *auratum* and the narrow perianth-segments those of *polyphyllum*. As to its horticultural merits I will not venture at present to express any opinion. Both this and its geographical neighbour, *L. Davidi*, of Duchartre, still remain to be introduced in a living state.

Bulb globose, 2 inches diameter; outer scales ovate, fleshy, $2\frac{1}{2}$ inches long by half as broad. Stem 2—3 feet long below the inflorescence, $\frac{1}{2}$ inch thick at the base, furnished with close erecto-patent sessile leaves up to the very top. Fully developed leaves lanceolate, 6—8 inches long, 1—1 $\frac{1}{2}$ inch broad below the middle, tapering gradually to a long point, moderately firm in texture; upper gradually smaller, those of the uppermost half foot of the stem ovate, 1—1 $\frac{1}{2}$ inch long. Inflorescence a lax corymb sometimes a foot in breadth, consisting of four to eight flowers, bracteated at the base by a whorl of small ovate leaves. Perianth yellow, 3—3 $\frac{1}{2}$ inches long; segments lanceolate, sub-obtuse, $\frac{5}{8}$ — $\frac{3}{4}$ inch broad below the middle, spreading from the middle when the flower is fully expanded, marked in the lower half with a few irregularly-scattered minute red-brown spots, furnished at the base with a sort of linear nectary $\frac{1}{2}$ inch long, which is some-

* *Lilium (Archelirion) Henryi*, Baker, n. sp.—Bulbo globoso tunicis magnis ovatis, caulo 2—3 pedali crebre foliato, foliis alternis lanceolatis semipedalibus supremis reductis ovatis, floribus 4—8 in corymbum latum dispositis, perianthio luteo segmentis lanceolatis flore expanso ad medium patulis infra medium punctis parvis paucis rubro-brunneis decoratis ad unguem parce papillois, staminibus limbo æquilongis.

times, but not always, fringed with a few subulate colorous papillæ. Stamens as long as the perianth-segments; anthers linear, $\frac{3}{4}$ inch long. Ovary sub-cylindrical, an inch long. Capsule oblong, obtusely-angled. *J. G. Baker.*

LÆLIA ANCEPS AMESIANA.

With the wide range of beauty which the new white and coloured varieties of *Lælia anceps* imported of late years have brought us, it takes a very fine novelty indeed to rank as first-class among them. Such a one, about which there can be no two opinions, is now in flower in the Orchid establishment of F. Sander & Co., of St. Albans, and has been dedicated by them to that enthusiastic orchidist F. L. Ames, Esq., of Boston, Mass., U.S.A. The outline of this superb flower is exactly that of *L. a. Dawsoni*, and it has the same firm substance and wax-like appearance of the petals, and which are $1\frac{1}{2}$ inch in width, the flower in its full expanse being 4 inches. The sepals and petals are pure white, with a delicate pearly blush on the outer halves; the sepals have at the apices an emerald-green dot, and the petals a crimson feather at their tips, after the manner of *Cattleya Trianae* Backhousiana. The labellum is altogether extraordinary. The side lobes forming the tube are white outside, and yellow inside streaked with purple; the mouth of the tube being prettily turned back so far as its blush-white margin extends—about one-eighth of an inch; a raised rich orange-coloured keel of three ridges extends up the middle of the labellum, finishing in one ridge on the front lobe, whose rich violet-crimson colour excels that of all other Mexican *Lælias*. The plant may be a cross between one of the Dawsoni type and a coloured *L. anceps*; but where such a rich and dark labellum comes from it is impossible to say. It appears that this treasure was bought by E. Harvey, Esq., of Riverdale, Aigburth, Liverpool, from St. Albans, in July, 1883, and it now finds its way back again at 200 guineas. *J. O.B.*

PLANTING SANDHILLS.

This interesting and important operation is commented upon at pp. 389, 447, and 545, and valuable information, success and failure, have been recorded. Your correspondent at p. 447, recommends the best plan suitable for such an object, viz., by using wattled bundles on the seaward side of the plantations, but evidently he has abandoned his useful and good work. Still, after all, planting has been successful in such positions, and under such difficulties as boisterous winds, shifting sands, and all the other evils mentioned.

The best recommendation I can suggest, is to follow Nature's plan; and the best illustration of this is found in a description of how this very thing has been accomplished on the sea coast of France.

By Nature's plan, I mean, first, suitable shelter; 2ndly, sowing seed and trusting to seedlings in the first instance, instead of planting; and 3rdly, supplementing this by planting better and more varied shrubs and trees when the planting is sufficiently advanced to shelter both the trees and that which they would be intended to decorate—a residence or garden.

This information is derived from a report by Major J. Bailey, R.E., on forestry in France, and this particular extract refers to "the dunes of the west coast of France." The winds that blow continuously from the ocean on the west coast carry with them enormous quantities of sand, which, advancing steadily over the country at the average rate of some 14 feet per annum, in the form of moving hills, called dunes, bury under them the fields and villages they reach. It has been calculated that nearly 90 cubic yards of sand per yard of coast-line are thus annually transported inland. Works to arrest the destructive effects of this invasion of sand have been in progress since 1789; they were originally carried out under the Department of Public Work, but since 1862 they have been placed under the Forest Department. The total area of the dunes is

said to be 224,154 acres, a part of which belongs to the State, and a part to private owners, while a much smaller part is communal property.

Now follows the plan. In exposed situations the protective works consist of a wooden palisade (I would also add turf walls), erected at a short distance above high-water mark, and destined to promote the formation of an artificial dune, with a view to prevent fresh arrivals of sand from being blown over the country.

Under the shelter thus formed seeds of various kinds, principally those of the maritime Pine (*Pinus maritima*)—so far north I would suggest *Pinus austriaca* and *sylvestris* also—Broom, common Whin or Gorse, and *Aruno arenaria* are sown, the seeds being covered with brushwood to prevent the sand in which they are sown from moving, and the sowing is thus continued inland in successive belts, until a crop of trees is raised on the entire area.

In less exposed situations a walled fence is substituted for the wooden palisades. In the Departments of Gironde and Landes forests of the maritime Pine have been most successfully raised in this manner, the trees being tapped for resin, and the wood of those which have been exhausted being sold for sleepers and other purposes.

North of the Loire the maritime Pine is not sown, as in that region it does not yield a sufficient quantity of resin to repay the cost of its introduction, and here it is sought merely to establish a crop of grass on the ground. The French law of 1810 relative to the treatment of the dunes, which is still in force, provides that the Government can order the planting up of any area which in the public interest requires to be so dealt with. "Surely one of the pressing reforms in our own country."

When the land or any part of it belongs to commons or private owners who cannot or do not wish to undertake the work, the State can execute it, reimbursing itself with interest from the subsequent yield of the forests. As soon as the money so advanced has been recovered, the land is restored to the owners, who are bound to maintain the works in good condition, and not to fell any trees without the sanction of the Forest Department. Before the Department took over the work of re-afforesting in 1862, 111,787 acres had been dealt with, and the entire area—more than 224,000 acres—has now been completed. The works have to be carefully maintained, in order to prevent a recurrence of the evil.

Referring now to p. 545, Major Bailey's remarks are worth repeating. Forests are not so exhausting to the soil as agricultural crops. In the case of the latter the entire plant, except the roots, which also are sometimes taken, is removed, whereas with a crop of trees the leaves, flowers, and fruit, which are far richer in nutritive elements than the wood, are annually returned to the soil, and thus serve to maintain its productive power, as well as by their protective action to keep it in a good physical condition. Hence forests can flourish on comparatively poor soil. *Wm. Clark, Carlisle.*

CULTURAL MEMORANDA.

SPIRÆA JAPONICA.

This winter and spring-flowering plant is almost indispensable as a decorative subject, and no time should be lost in potting up the desired number of clumps. The soil used may consist of three parts light sandy loam and one of leaf-mould. Stand the pots on fine coal-ashes in a cold pit, whence small batches can be drawn for forcing. The *Spiræa* is a moisture-loving plant when in growth, therefore it should be well watered once, and sometimes twice a day. Liquid manure applied at the roots three or four times a week, will also have a satisfactory result; failing this an occasional surface-dressing of Beeson's manure before giving water at the roots will answer the same purpose.

LILY OF THE VALLEY.

All home-grown, and imported crowns and clumps should now be potted. Several "crowns" may be packed closely together in 4½-inch pots, in a compost consisting of about three parts light sandy loam and one of leaf-mould, working it around the roots in the process of potting, keeping the crowns just above the surface of the soil. The same remark applies to the potting of the "clumps," which should be potted according to their size, into 4½, 6, and 7-inch pots. The great secret in the early forcing of Lily of the Valley is to exclude light and air from the crowns until they have shown the flower-spikes, when they should be gradually inured to light, by placing them on a shelf, in the forcing-house, with an inverted flower-pot placed over them for a few days. The plan of plunging the pots a few inches underneath a covering of leaf-soil, in the Mushroom-house, or in a box of sawdust placed under the staging in a forcing-house, or anywhere in a temperature not below 50° or 55°, keeping the material in which the pots are plunged on the moist side, is, I find from long experience of its use, a capital one.

CLIVEA MINIATA

flowers during the winter and spring months, and is easily increased by divisions of the crown being potted any time after the plants have flowered. Use a mixture of four parts sandy, fibry loam and one of leaf-soil, with a dash of sharp sand, putting the plants in a moist, warm pit or house, and giving sufficient water at the roots to settle the soil. After the roots have pushed well into the soil, occasional applications of weak, tepid, liquid manure will prove beneficial. Unless the plants are intended to be flowered in small pots, they should be shifted into larger pots as soon as the roots have reached the side of the pots.

AGAPANTHUS UMBELLATUS.

This is of very easy culture. Divisions of the crowns potted into 6-inch pots in any kind of moderately rich mould, and placed in a minimum temperature of from 50°–60°, and watered, will soon become established, requiring frequent shifts into larger pots until the desired size has been attained to. They are gross feeders, and, therefore, should have copious supplies of weak liquid manure during the period of growth. This will aid the production of flowers. Large plants stood out-of-doors have a good effect.

CHRYSANTHEMUMS.

Cuttings for next year should be taken as soon as they have made between 1 and 2 inches of growth. Insert round the sides of 3-inch pots filled with any kind of mould surfaced with sand, and placed in a cold frame near to the glass, or, better still, a pit where a little heat can be employed occasionally to dry up excessive moisture, and so prevent the cuttings from damping off. None but good sturdy cuttings from the base of the plant should be taken. As soon as the cuttings are rooted, sufficient air must be given to insure a stocky growth. *H. W. Ward.*

PLANTS IN FLOWER AT KEW.

THE following are the most interesting of the plants now flowering in the Royal Gardens, Kew:—

Gladiolus recurvus.—This plant commenced to flower early last month. It belongs to the small-bulbed Rush-leaved kinds, of which *G. tristis* is the best known representative. The former has leaves a foot long, a scape 18 inches long, bearing two or three flowers which have spreading recurved segments 1 inch long, and coloured yellow, thickly spotted with brown. The flowers are dull in colour, but very powerfully fragrant, and they remain fresh a fortnight or more. This species was the first *Gladiolus* to flower last winter, as it is this.

Hemanthus Baurii flowered for the first time at Kew in 1883, and it has been in bloom every year since. The plant now flowering has two short broad

recurved leaves, and a short erect scape projecting from the centre. The broad, petal-like spathe-valves are pure white, margined with emerald-green, and enclose the cluster of white erect flowers. This species bears some resemblance to *H. albiflorus*, but the latter has longer scapes, shorter spathe-valves, and usually three or four leaves. *H. Baurii* is figured in *Bot. Mag.*, t. 6875.

Reinwardtia tetragyna is a most valuable winter flowering plant, much superior to *R. trigyna* (Linum) both in the manner of flowering, in the shade of yellow, and in the length of time it lasts. There are several groups of it in flower in the Begonia-house. For warm conservatories this plant deserves a very strong recommendation.

Thunbergia laurifolia.—This is an old stove flowering climber, which produces its large handsome lilac-and-white flowers at various seasons. A fine example of it is in bloom in the Victoria-house. Its neighbour is *Ipomœa Briggsii*, a very pretty and floriferous form of *I. Horsfallii*.

Vitis pterophora, better known as *V. gongyloides* is also in this house, and is interesting just now on account of the swollen bulb-like character of the terminal internodes or joints of the principal shoots. These, when ripe, dehisce naturally, and falling to the ground, soon develop into plants. They are a near approach to propagation by cuttings on the part of Nature herself.

Bromeliads.—The most attractive of these plants now are *Billbergia vittata* Bakeri, a hybrid, also known as *B. Cappei* and *B. Brentana*. It is a handsome plant, 18 inches high, with semi-erect leaves, and an arching branched panicle of blue flowers, subtended by large boat-shaped bracts of brilliant crimson. *Echmea calyculata* is a dense-growing plant with erect dark green leaves, about a foot long, and compact heads of yellow flowers on peduncles a little longer than the leaves. *Æ. Barlei* has stout leaves arranged in a vasiform manner, and margined with large spinous teeth. The inflorescence is a long, arching, branched panicle, with small flowers and large crimson bracts. *Æ. mexicana* is a strong grower, nearly a yard across, with grey-green leaves and a stout panicle of flowers, the small blue petals just protruding beyond the grey nut-like calyx.

Luoulia gratissima is annually an attraction in the greenhouse (No. 4). It is very good this year, the heads of bloom being large and full. A second plant, with smaller leaves, looser flower-heads, and the corolla smaller, is called variety *glabra*. It is what is cultivated in some gardens—as, for instance, Birmingham Botanic Gardens—as *L. Pinciana*, but it is not that plant. Is true *L. Pinciana* in cultivation anywhere? It has white flowers, larger than those of *L. gratissima*, and with a raised callus, almost a corona, about the base of the lobes of the corolla.

Pleroma macrantha (*Lasiandra*).—A first-class winter-flowering plant, if grown in a sunny position in a warm greenhouse; indeed, it is rarely out of flower. Two plants in the greenhouse (No. 4) are now covered with large purple-blue flowers.

Callistemon rigidus.—The large bush of this handsome Australian plant is now flowering freely in the south octagon of the Temperate-house. What beautiful flowers it bears! Exactly the form of a bottle-brush, the bristle-like stamens bright crimson, and each one tipped with a golden anther. It will continue to flower for some weeks yet. These plants, and the equally handsome *Beaufortias*, are rarely seen in English gardens now. There were some pretty examples of them exhibited at Ghent this year.

Lilium nilgherrense.—A little group of this large-flowered Indian Lily is flowering in the Temperate-house. It is an interesting species, not so pure a white as *L. longiflorum*, but well worth growing for the sake of its flowers at this season. It is almost hardy. The flowers are 8 inches long, narrow in the tube, 5 inches across the limb, segments recurved, the three inner ones 2 inches across. Colour creamy-

white tinged with green in the throat, wholly green on the tube.

Dracena fragrans var. *Lindenii*.—This is the well-known *D. Lindenii* of gardens. It is handsomest when young, old plants becoming much greener. The plant now flowering in the Palm-house is 7 feet high. The inflorescence is terminal, and in the form of an erect branched panicle, with small white pale yellow flowers.

Orchids.—Amongst *Masdevallias* in flower are *M. pulvinaris*, a very remarkable species, with tall peduncles, bearing the purple-brown flowers reversed (lip upwards), and with two oblong, fleshy, yellow processes on the inside of the two upper sepals. *M. Moorei*, or *melanoxantha* has large flowers with a chinned cup 1 inch across, and three tailed sepals 3 inches long. Colour purple on lower sepals, upper creamy-yellow with purple lines. The labellum is large, and black-purple. *M. platyglossa*, with dull yellow papery pendant flowers; *M. cucullata*, with large deep black-purple flowers; *M. polysticta*, *M. Carderi*, *M. bella*, *M. Wallisii*, *M. macrura*, *M. melanopus*, and others, are also now in flower. A rose-coloured variety of *Sophronitis grandiflora* is blooming close to flowering examples of the type. *Cirrhopetalum Wightianum*, with a long peduncle, suddenly bent at the upper end, and bearing yellow flowers, in which the only conspicuous parts are the two long sepals, united by their inner edges and projecting outwards; *Pholidota conchoidea*, like *P. imbricata*, but larger; *Cattleya labiata*, autumn-flowering variety; *Huntleya marginata*, *Cœlogyne Gardneriana*, *C. rigida*, *Polystachya laxiflora*, *Catacsetum Garnettianum*, *C. fuliginosum*, *C. macrocarpum*; *Bolbophyllum striatum*, and a very fine variety of *Odontoglossum Harryanum* with nine flowers on a spike, are the most noteworthy of the Orchids now in bloom. *W.*

NOTES FROM A NATURALIST IN MEXICO.

WHEN at last one arrives at the so-called Valley of Mexico—which is not a valley in the usual sense of the word, but rather a high-lying plateau, containing large lakes which receive the drainage of the hills around, and have no natural outlet—one expects to see a view of unparalleled grandeur, but this is, like many other popular impressions, by no means the case. The distant cone of Popocatepetl and the more picturesque mountain of Ixtaccihuatl, which, though somewhat lower, has more snow at present on it, are no doubt very high and remarkable mountains; but their distance, the haze through which they are seen, and the want of beautiful foreground in the view, make the scene, in my opinion, infinitely inferior in grandeur and in impressiveness to many of far less reputation, both in the Alps, the Pyrenees, and the Himalayas.

As to the climate, one must not be too critical at this season, especially when one has just left a winter of unusual severity, both in the United States and Europe, but it is not my idea of a tropical or even a very nice climate. Bright sun and continual almost cloudless sky, cool air, even cold in the morning, with glare and dust, are the characteristics on the plateau and highlands of Mexico for five or six months of the year.

Pine forests, which I had always expected to find one of the features of the country, are diminishing yearly through the unchecked devastations of fire, charcoal-burners, goats and sheep, and I have not yet seen a tract of forest which has not been much injured in this way, or of which the more accessible parts have not been, in a great measure, destroyed. To find this one must go up to 8000 or 9000 feet on the slopes in the environs of the City of Mexico, so tempting to a naturalist at this season. We lost no time in going on to Orizaba, about two-thirds of the way in distance to the east coast, and at little more than half the elevation of Mexico City.

Here, in the midst of Coffee plantations, Sugar-cane and Bananas, with the volcanic peak of Orizaba,

17,000 feet high, at a short distance, one can find, by looking for them, some really charming bits of forest, but always in deep gorges or barrancas, and never in easily accessible situations. Birds, as in the Valley of Mexico, are numerous and varied, but not especially striking in colour, size, or form. Butterflies are fairly numerous, but mostly belong to the family of *Hesperiidae*, which alone are common at this season. Moths, excepting a few day-flying *Ægeriidae*, are scarce, and other insects, excepting dragon-flies, not very showy or numerous. Orchids are fairly abundant, but few showy ones are now in flower, and though the gardens and plantations round the town are full of beautiful, showy plants in flower, of a more or less tropical character, such as *Hibiscus*, *Erythrina* and *Datura*, yet most of them are exotics. A fortnight's stay in Orizaba enabled me to explore the environs pretty thoroughly without finding a single spot within five or six miles which could be called a first-class collecting ground, though at the same time I feel sure that Orizaba would yield a very large number of plants, birds, and insects, to a resident collector. Tuxpango, about three hours to the south-east, is the best place I found, and here are some very picturesque waterfalls, and a lovely tropical gorge, with some fine Coffee plantations under the shade of the forest, which pleased us more than any spot yet visited. On the mountains around Orizaba, which, however, are very steep and pathless, there are some rich and interesting spots in which I found a few fine plants and rare insects; but the sky, though generally bright in the morning hours, usually clouded by noon, and the weather was not nearly so hot as one would expect in latitude 19°, at 4000 feet elevation.

Going on from Orizaba towards Vera Cruz, one passes through a very rich and fertile country, where Bananas, Pine-apples, Coffee and Sugar are largely grown about Cordoba, and here in the plantation of M. Tonel, a Belgian gentleman, who has been settled in Mexico for many years, I saw a large number of species of Palms, and very many interesting and beautiful tropical and sub-tropical plants. Indeed, I should say this was by far the most interesting garden in Mexico, as the proprietor has a Belgian gardener, and goes to much trouble and expense in making his plantation rather a botanic garden than an ordinary Coffee plantation. But still there is no virgin forest until one gets on towards Attoyac, where the railway passes through some scenery of the true tropical character, and in the few hours I was able to spend here I saw what I had been hoping for so long. As, however, Attoyac is said to be very unhealthy at all seasons, and there is no accommodation for a stay, I could only regret my inability to give it a thorough exploration, though probably there is no great amount of novelty to be expected, this part of Mexico having been better worked by naturalists than any other.

Below Attoyac you get into the dry plains bordering the coast, which are for the most part covered with low, thorny, or scrubby forest, or coarse wiry grass, and infested with small insects called "pinolillos," which, judging from the amount of precaution and trouble the inhabitants take to get rid of them, must be very disagreeable indeed. A gentleman who got into the tram-car on our way up to Jalapa, two stations out of Vera Cruz, had got amongst these "pinolillos" in passing through some bush, and spent over half an hour, with the assistance of several other passengers, in picking them out of his clothes. A magnificent yellow-flowered tree, figured in Brologsa's *Centralo America*, was the most conspicuous ornament, at this season, of these dry, low-country jungles, for I can hardly call them forests, and here alone have I as yet seen Palms growing as a conspicuous feature in the scenery, though several dwarf and slender climbing Palms were common in the gorges about Orizaba and Attoyac, together with two fine plants belonging or allied to the *Musaceæ*, both in flower at this season.

Vera Cruz, though unusually cool and healthy for the time of year, owing to the heavy northerly gales which have prevailed during most of the month of

March, and which account for the cloudy, cold weather at Cordoba and Orizaba, is not a place that would tempt any one travelling for pleasure to stay in; and as its hotels are detestable, we lost no time in getting off to Jalapa, which lies on the eastern slope of the mountains about fifty miles north of Orizaba.

The old road up to Jalapa is said to give an excellent idea of the gradual change of climate and vegetation from the coast upwards; but if this is true, I cannot say the same of the new tramway, which takes one over the forty miles and 5000 feet of ascent in about eleven hours, mules being the motive power, as on many other lines of Mexico. The first half of the way is all through the dry coast jungle, or chapparal, as it is here called, full of *Mimosas* and other thorny trees and bushes. *Bromeliaceæ* are very conspicuous and abundant, as in most parts of this region, and several very fine arborescent *Bonaparteas* and gigantic *Cereus* were common at about 2000 feet. But on the whole line there is not a single mile of forest which can be called fine or luxuriant, and water is so scarce that the villages on the route are both few and poor. One fair-sized river is crossed at Puente Nacional, and here we saw some lovely flowering trees, though the speed of the mules, except on steep ascents, did not allow much botanising. A very graceful, feathery Bamboo, growing about 15 feet high, appeared at about 3000 feet in one place only on the road, growing gregariously among shrubs and trees, but beyond this I saw nothing very striking. When we got up to about 4000 feet, an open, grassy country, with occasional trees, and small groves in the ravines, was entered, which, through the influence of a small driving rain and dense mist, made the country look more like the Highlands of Scotland than Mexico; but, notwithstanding the cold, hedges of wild Pine-apples showed that the mean temperature must be high.

Jalapa itself, when reached, is decidedly the most enjoyable place of residence for a naturalist that I have yet seen in America. The climate is damper and cooler than that of any place of similar elevation I have seen. There are numerous bits of very charming country of varied character within a walk of the town. A very tolerable hotel, curé, and law-abiding inhabitants, a capital naturalist's servant, named Alyssio Trujillo, who accompanied us for some time, and can both shoot and skin birds well, and fine weather, all combined to render our stay at Jalapa a bright and delightful sojourn. There is between Jalapa and Coatepec a good deal of real virgin forest, abounding in plants, birds, and insects, and having at least two broad and good roads through it, without which collecting in a virgin forest is so difficult and incomplete. At this season the forest, which consisted largely of Planes, Oaks, Liquidambars, and other trees of a temperate aspect, was dry and pleasant to go about in, and numerous small clearings in it made a variety which, if not carried to the extent which it generally is, is favourable to all animal life.

On the north side of the town, at about an hour's distance, is a delightful park-like, grazing country, covered with groves of trees, and intersected by richly-wooded gorges, a very paradise for birds, and having in fine weather a perfect climate, though it is said that the rainy days in the year outnumber the fine ones. Further on towards the north we did not go, but Mr. Godman, who spent a month in and about Misantla, three days' ride north of Jalapa, describes the deep descent from the table-land to the dense forest as very fine, and the country extremely rich and productive to a naturalist. North-west of Jalapa is the Confre de Perote, a volcanic mountain 13,000 or 14,000 feet high, with fine Pine forests on its slopes, but at this season the high country was too cold to visit for collecting purposes, and I am unable to say whether the Pine forests on this slope are as much damper and richer in herbaceous plants and accompanying insects than those of the central plateau, as one would expect them to be.

We returned from Jalapa to Cordoba on horse-

back; a ride which for varied vegetation, beautiful scenery, and general interest, would be hard to beat in Mexico; and though on two of the five nights spent on the road our lodgings were of a very primitive character, yet a lady was able to enjoy it thoroughly. Some of the barrancas—five crossed on this ride—are very deep and perpendicular; two rivers have to be passed on rafts, the horses swimming or wading, but the ride along the edge of the Barranca de los Pescados, ascending from 2000 to about 5000 feet, on the second day, has many very fine views indeed, and the peak of Orizaba, both on this and the next day, is an object of culminating importance. In the Oak forest near Las Balsas, Bromeliaceæ, Orchids, and other epiphytes were in the greatest abundance. I gathered thirteen or fourteen species of Orchids in an hour from the low trees without getting off my horse. This was between 3000 and 4000 feet, but a few miles further on we got into a region where, though the forest was much finer and denser with green undergrowth, Orchids were not so numerous or varied.

We saw a fine dark crimson Hibiscus, with a trailing habit, in this part of Mexico only, and a splendid Gesneriaceous plant of great size growing in the damp, shady ravines, together with many Tree-ferns and other large and handsome Ferns, which seemed more abundant about San Bartolo than anywhere I have yet been. In fact, we thought San Bartolo as good a place for collecting as any in this part of the country. It is charmingly situated in the midst of a good deal of virgin forest, at about 5000 feet, and within easy reach of deep, hot gorges, full of purely tropical vegetation, and close under the high slopes of the volcano of Orizaba.

Beyond Huatusco, where we slept on the third night from Jalapa and found very fair quarters, the country becomes less broken and picturesque, though still very pretty. Returning to the high plateau of Mexico, we found the contrast between the dry, dusty, windy climate, and the region we had just left, even more striking than at first. Round Pueblo, where we stayed a week, there is little or no indigenous vegetation, except here and there on dry rocky hills, and in the few places where the soil is too poor for cultivation. The Malinche, an extinct volcano of 13,000 feet, is covered on its lower slopes with stunted Pines, which are fast succumbing to the attacks of the woodman and charcoal-burner; but the only spot where we have found any forest at all likely to contain much of interest is at El Pinal, about twenty-five miles out on the railway leading to Los Llanos, and here are a good many birds and insects quite different from those yet seen, and some Vaccinias and other plants, which are apparently quite at home on the dry sandy granite of which these hills seem to be mostly composed. *H. J. Elwes, Cirencester, in "Garden and Forest."*

ORCHID NOTES AND GLEANINGS.

ORCHIDS AT BURFORD LODGE, DORKING.

THE hybrid *Calanthes* in Sir Trevor Lawrence's collection always make a bright feature at this season of the year, and each year seems to add new beauties. There is a brilliancy of colour in the coloured varieties and a softness of tints in the paler ones, which also include some sulphur-yellow tinted forms, and which seem to be peculiar to the Burford strain and are unapproached by any other. Among many now in bloom, *Calanthe burfordensis* is the richest in colour, its flowers being like *C. Sandhurstiana*, but far more brilliant—a vermilion hue tinging its carmine-crimson flowers. *C. Veitchii splendens* is almost as fine in colour, but has a light eye in place of the dark crimson of *C. burfordensis*; *C. V. lactea* is a charming milk-white flower; *C. V. rosea*, a delicate pink; *C. amabilis*, a very distinct and delicately-tinted kind, and *C. nivea*, a profuse flowering white. These are all hybrids from *C. Veitchii*, which gives a race with good constitution, profuse to flower, and producing their flowers at a most desirable

season. Sir Trevor Lawrence also has many new and delicately tinted unnamed kinds of the same strain. Of the *C. vestita* section the Burford seedling named *C. v. aurantiaca*, with very large flowers with orange eye, faintly suffused with pink, excels all the rest, and now that there are large specimens of it with many spikes of flowers, they exceed all expectation. The pretty *C. bella* and the curious hybrid raised here between *Limatodes labrosa* and *C. vestita* are also in bloom, the latter with purplish sepals and petals, and yellow lip marked with purple.

Garden hybrids have now become one of the most interesting features in several Orchid collections, and especially at Burford where so many fine things have been raised, and a numerous progeny is coming on, especially of *Cypripediums*, of which the Burford variety of *C. Leeanum* named *maculatum* now in bloom offers a good example. Turning to the *Dendrobium* crosses the grand hybrids raised between *D. Findlayanum* and *D. Ainsworthii*, named respectively *D. chrysodiscus* and *D. melanodiscus*, and the no less beautiful *D. chlorostele* (*D. Linawianum* × *D. Wardianum*), are showing well for flower, and other nurslings expectantly watched: with them the perpetual flowering *D. rhodostoma* is producing its rich claret-tipped flowers, and the *D. splendissimum grandiflorum* has in the past season proved again its superiority over all the *Ainsworthii* family.

In the numerous Orchid-houses at Burford, whose occupants Mr. Bickerstaffe fails not to keep up to the mark—and that is not an easy task where rare things abound—plenty of oft-noted things are in bloom, but among the rarer and remarkable were the scarlet *Epidendrum cinnabarinum* Moseri, the curious true *E. sceptrum*, with numerous spikes; the richly tinted best variety of *E. phœniceum*, *E. Wallisii*, and other *Epidendrums*. *Cypripedium Harrisianum superbum* (Burford variety), a richly coloured giant among the *Harrisianums*, *C. H. nigrum*, *C. nitens*, *C. insigne* Moorei, and many other varieties of *C. insigne*, and others.

At present three distinct varieties of *Mormodes buccinator* are in flower—one with clear yellow, another with white flowers spotted with pink, a third with handsomely mottled cinnamon and chocolate-coloured flowers, and there is yet another, which has reddish-purple blooms. Well might Lindley call it the most variable of the *Mormodes*. *Cynoches chlorochilon* is in bloom, the new and singular *C. versicolor*, just over; and *Catasetum Bungeothii*, *C. macrocarpum*, and others of these curious Orchids, are in flower or bud.

Lælia anceps (white and coloured) are well advanced in bud; *L. a. Sanderiana*, which is one of the finest, having five spikes; the richly coloured *L. a. Protherocœanum*, too, introduced by Mr. F. Horsman, of Colchester, is a grandly formed flower; there will be a fine show of Mexican *Lælias* soon, and already some superb *L. autumnalis atro-rubens* are open and a large specimen of *L. Gouldiana* with five spikes is well advanced. The *Masdevallias* have some chimeras, *M. hieroglyphica*, a large pot of *M. racemosa* Crossii, *M. Chelsonii*, the pretty *M. ludibunda rosea*, and others in bloom, and other extra fine or rare things in bloom or bud are *Vanda Amesiana*, *Spathoglottis angustorum*, *Dendrobium streblolaceras*, *Odontoglossum Harryanum*, *O. Krameri*, *Cattleya maxima Backhousiana*, with finely veined lip, sepals and petals; *Sophronitis grandiflora* coccinea, *Esmeralda Clarkei*; *Aërides Lawrenceana*, *Angræcum Chailluianum*, *A. pertusum*, *Lycastes*, *Maxillarias*, *Pleiones*, &c.

ORCHIDS AT CASTLE HILL, ENGLEFIELD GREEN.

The small but increasing collection belonging to G. C. Raphael, Esq., now that it is under the care of such a grower as Mr. Swan has proved himself to be, bids fair to rank among the more important ones. Upwards of fifty distinct species and varieties of *Cypripedium* are represented by very fine and healthy specimens, among which a good display of bloom is given by the varieties of *C. insigne* and *C. Spicerianum*, and lesser quantity by some of the

hybrid forms, and the *Calanthes* very effectively arranged along with them.

In the cool-house the pretty violet *Odontoglossum Edwardii* has a very strong spike, and many other *Odontoglossums* are in flower, as well as *Masdevallia chimæra* and other *Masdevallias*, and fine pans of *Pleione*; and the plants of *Cattleya citrina* suspended overhead exhibit extraordinary vigour. The *Phalænopsis* and *Angræcums*, too, in the house here devoted to them are very promising for a good show of flowers in their seasons.

ORCHIDS AT THE GRANGE, HACKBIDGE.

The great success which has attended the experiments of growing Orchids for the four warm months in the open air in the Fern Valley in the noted garden of A. H. Smee, Esq., whose doings in that direction have been repeatedly recorded, must have done much good by showing that it is at least unnecessary to give many Orchids the high temperature to which they are subjected in some gardens. The whole of the Orchids at The Grange are grown under very cool treatment, and it is only a representative selection which is placed outdoors in summer, but when this selection is returned to the houses for the winter the improvement by outdoor sojourn is very marked in many cases, and deteriorations infrequent. It is also advanced that the plan's grown outdoors in summer are much less liable to be injured by cold in winter. If we may take a great specimen of a fine variety of *Odontoglossum luteo-purpureum* with two very large spikes now in bloom as one example, the summer holiday in the open air is beneficial, and that it is so, is also borne out by some fine *Lycastes* and other things now in bloom, and the stout growths of *Dendrobium Wardianum* and other *Dendrobiums* made in the open air, but Mr. Cummins (the gardener here) who takes such an interest in these experiments, remarks that they require as much attention when growing out-of-doors as if they were kept in the houses.

Disas, *Satyrums*, and other Cape terrestrial Orchids, too, are very successfully managed in frames from which the frost only is excluded by covering up in hard weather. Here many fine *Satyrums* and *Disas* have flowered, and notably the blue one, which grows now begin to understand. A fine variety of *D. graminifolia* is now in bloom, and the rare *D. lacera* (see fig. 93, p. 664), with its beautiful blue and purple flowers, remained in flower over six weeks.

The flowering Orchid-house is that which was illustrated in *My Garden* as the fernery, but now the flowering Orchids are set up in it, and are delightfully effective when so arranged. At present some great masses of several varieties of *Oncidium prætexatum*—one with two spikes of over a hundred flowers—are very effective; and *Oncidium Forbesii*, *O. abortivum*, *O. raniferum*, *O. varicosum*, and a varied display of *Odontoglossums* look well with their sprays hanging over the frondage of the Ferns. Many varieties of the pretty *Barkeria elegans*, *Cattleya Dormaniana*, *Masdevallia macrura*, and some pretty, less known *Masdevallias* and *Restrepas*, *Epidendrum xanthinum*, *Ornithidium coccineum*, *Lælia anceps Protherocœanum*, the richest of the coloured *L. anceps*; *Cattleyas*, large specimens of *Cypripediums* are here in bloom in this well-arranged house; and that delicately tinted *Lycaste Smeeana*, as well as a new and very handsome species of *Lycaste*, with flowers of the *L. macrophylla* type, but with sepals shining reddish brown, petals white dotted with pink, lip white marked with rich crimson. It is proposed to call this *L. Cumminii*, after the custodian of the garden. The houses containing the general collection are in fine order, and brightened with the scarlet flowers of *Sophronitis*, *Calanthes*, and other showy things. *J. O'B.*

DENDROBIUM CULCAGNE.

Referring to the account in the *Gardeners' Chronicle* on November 12, 1887, of the flowering of this plant, I have one which is now flowering for the second year. I should describe the sepals and petals as more of a brownish-green; the lip in my plant is

a deep black, and has the same texture as a bat's wing, and the sepals all curl upwards at the tip.

ORCHIDS IN THE OPEN AIR IN SCOTLAND.

On June 1 I turned out about 200 cool Orchids, *Masdevallias* and *Odontoglossums*, placing them along the edge of a burn flowing through a wooded glen; there they remained till the middle of September, getting occasionally watered when too dry. All did very well, some even flowering, and the *Masdevallia* blooms were very fine. They were then brought in to a frame, and are now making very strong growths in the *Odontoglossum*-house. I found out that in this cold climate they do not do so well when placed on or near the ground, and next year I shall place them on planks suspended between the fir trees. *Walter T. Ogilvy, Arndean, Dollar, N.B.*

DISA LACERA, Sw.,

AND VAR. MULTIFIDA, N. E. Br. (N. VAR.).

THE blue-flowered species of the genus *Disa* have long been a desire with the European Orchid growers, but hitherto very little success appears to have attended their importation; this year, however, some of the imported plants have flowered; one has been figured in the *Journal of Horticulture and Cottage Gardener* for September 6, 1888, p. 220, fig. 24, under the name of *Disa lacera*; of another, an illustration is given accompanying this (fig. 93), which flowered in the Botanic Garden, Trinity College, Dublin, and was noticed in this volume on p. 215; it was sent by Mr. F. W. Burbidge, as *Disa graminifolia*. A third flowered with Mr. F. G. Tautz, under the name of *D. graminifolia*; a fourth plant has just flowered at the Royal Gardens, Kew; and has been figured for the *Botanical Magazine*, and others, of which I have no knowledge, may have flowered elsewhere.

It is not easy to form an opinion as to what these four plants should be called; for if all of them were placed side by side when in flower, I think nearly every gardener would at least consider them to be four distinct varieties, for on comparing the figure here given with that in the *Journal of Horticulture*, striking differences at once become apparent. The plant which flowered at Kew is more like that here figured (which appears to me to have lost its freshness when it was drawn, as the flowers seem to have begun to close up), but has a less deeply fringed lip, and a more angular hook to the apex of the petals; that which Mr. Tautz flowered differs from all in having the lip entire, or with a slight crenation at the apex only, and a longer hook to the apex of the petals. Of the *Journal of Horticulture* plant I have seen no specimen, so will leave that out of the question; but the other three, it is quite clear, must either be considered as distinct species, or varieties of one species. I incline to the latter view, and propose to refer them to *Disa lacera*, Swartz. Mr. Bolus, however, who has also seen them, and whose knowledge of South African Orchids in a living state is unrivalled, is inclined to refer those with the fringed lip to *D. purpurascens*, Bolus, and that with the entire lip to *D. lacera*, as he considers the lip of South African Orchids as being comparatively constant in character and less variable than the petals. In this I cannot agree with him, as *D. purpurascens* has a differently shaped flower, and the apical portion of the petals is hatchet-shaped, whilst in these three it is hooked, as it is in *D. lacera*, and although the hook varies considerably in length, and the abruptness with which it is bent down, it makes no approach to the squarish or somewhat hatchet-shaped termination of the petals of *D. purpurascens*; and considering how variable the lip often is, even among South African Orchids—as, for example, in *Disa spatulata*—and as the general appearance of the plants, the size of the flowers, and the hooked petals, all accord with the plant considered by Lindley to be the *Disa lacera* of Swartz, I prefer to place them as varieties of that species.

In the original description of *D. lacera* given by Swartz, there is no mention made of the colour of

the flowers, but Thunberg describes them as whitish, which certainly does not agree with the colour of the plant now understood as *D. lacera*; but Swartz described from a specimen or specimens collected by Sparrmann, and Thunberg may either have described a different plant, or conjectured the colour from the dried specimens; it is impossible to decide which, as there is no specimen now existing of *D. lacera* in the herbaria of Swartz and Thunberg, both of which I have had the opportunity of examining. The



FIG. 93.—*DISA LACERA* VAR. *MULTIFIDA*.

description of Swartz, however, so far as it goes, so well agrees with the plant now called *D. lacera*, that I see no reason why that name should not be maintained for it.

Until we know more about these plants I think it best not to give them a too prolific nomenclature, and am disposed to group all the forms of *D. lacera* that I have seen, living and dried, in the following manner:—I would call all those specimens which have lip entire, or crenate, or fringed at the apex only, *Disa lacera*; and all those that have the lip more or less deeply fringed all round I propose to call *Disa lacera* var. *multifida*, regarding the hooked

petals as the character binding all these together. The following are briefly the characters:—

D. lacera, Swartz.—Dorsal sepal helmet-shaped, with a broadly ovate or triangular-ovate opening, sometimes apiculate at the apex, somewhat abruptly contracted behind into a conical spur $\frac{1}{4}$ — $\frac{1}{2}$ inch long, which makes a very obtuse angle with the back of the sepal. Lateral sepals obliquely oblong, acute or sub-obtuse, concave (somewhat boat-shaped), directed forward and a little spreading. Petals with a broad oblong or elliptic oblong basal lobe or auricle, and a linear, very abruptly hooked, acute apical portion the hook varying in length and angle of deflection. Lip oblong, lacerate or fringed at the apex only, or nearly or quite entire.

Var. *multifida*, N. E. Br. (fig. 93).—Lip oblong-ovate, fringed all round from base to apex. (See small figure at left-hand corner.)

The colour in both forms is of a rather bright bluish-purple in all parts, but not of an uniform tint throughout; in the plant here figured the fringe of the lip was of a reddish-violet colour.

The true *Disa graminifolia*, I believe, has not yet flowered in this country—at least, I find no record of it; since, if it had, there can be little doubt, that it would have been figured, as from all I can learn, its brilliancy of colour far surpasses that of the other blue species, and would be sure to have been written about.

P.S.—Since writing the above I have received, through the kindness of the Editor, another flower, grown by Mr. Cummins, of Hackbridge. This flower only confirms my opinion that the plants here commented upon are quite distinct from *D. purpurascens*, which is very similar indeed to *D. graminifolia*, but flowers at a different season. Mr. Cummins' flower has a nearly entire lip, like that of the flowers received from Mr. Tautz's collection, but the petals differ from those of all the other flowers seen, in having the hooked portion much broader, somewhat rectangular, and 3—4 toothed in front. The colour of this flower also differs a little from that of the others I have seen, the dorsal sepal being bluish-purple, the lateral sepals blue, and the lip reddish-purple; the petals are bluish-purple, as in the other flowers. From what I have seen of *Disa lacera*, living and dried, I consider it to be an exceedingly variable species as to lip, petals, and colour; but at the same time it appears to me readily distinguished from *D. graminifolia* and *D. purpurascens* by the bluish-purple, more or less hooked petals, for in those two species the petals have a yellowish-green hatchet-shaped apex. *N. E. Brown, Herbarium, Kew.*

[For the sake of comparison, and also to show the adaptability of *Disa* for pot culture, we give (at fig. 94) *Disa grandiflora*, which was grown by Mr. W. Denning, Lord Lonsborough's gardener at Norbiton, and figured in the *Gardeners' Chronicle* for April 3, 1875. The plant was rather more than 3 feet in height. Ed.]

BEDDING VIOLAS, OLD AND NEW.

It is many years, probably, since bedding *Violas* generally have been so well suited as during the now past cold, sunless, rainy summer of 1888. If many things in the garden have signally failed, these, on the other hand, have been equally successful in producing their bright pleasing flowers in greater profusion than ever. If I rightly remember, it was a more than usually wet summer in 1879, and *Violas* did splendidly that year—at least, with me in Cheshire. But saying this I do not wish it to be understood that these charming bedding plants do well only in wet seasons—far from it; I merely mention it as a fact that they do better than in exceptionally dry seasons. What these *Violas* really delight in is warm, showery weather, and when this is not forthcoming, copious waterings should be given them late in the evening. In northern districts this is hardly needed, but in southern counties, to ensure their doing well in all sorts of weather, special treatment must be given them.

As one much interested in this truly beautiful group of plants, I may be permitted to briefly detail my practice, which I doubt not, if followed, would prove helpful to growers, or would-be growers,

are required to be at their best, will, to a great extent, regulate that of the planting; but assuming that they are required—as they are in most cases—for early spring and summer display, then there is no

month of October, will well need reminding of the superiority of the system. Many people plant from divided stock, but these always lack the vigour and energy of strong, newly-rooted stock. Provided cuttings of the right sort have been selected, *i.e.*, those from near the base of the plants, and which have flowered but little, plants of the right kind will be forthcoming also as a natural consequence. These inserted at the time stated will be in fine condition for planting out during the month of October. It is such as these that, if cared for after planting, will be found bristling with underground shoots before the end of the year—the best possible promise of a rich bloom in the future. Even the newly rooted plants will exhibit this tendency to break freely from the base, and from this fact I glean that they should be buried just below the surface, as they are too young and tender at this time to endure continuous change; in fact, they are benefited by being earthed up as the young shoots are made, with refuse from the rubbish fires, road scrapings, leaf-soil, or well-decayed manure. This method is of real value in low-lying foggy places, where damp and a raw cold atmosphere are frequent in winter time, as they suffer more from continued damp and cold than from actual hard frost in drier districts.

Few plants enjoy a richer soil more than *Violas*; and in planting them I use cow manure wet from the sheds; in this state it is of great value when the summer comes in, keeping the ground moist and cool about their roots, which by that time will have got down to it. Those, therefore, who would grow *Violas* to perfection should manure freely, especially when the soil is gravelly, and consequently dry. I do not believe that gardeners generally are aware of the many and various purposes to which *Violas* may with advantage be put, otherwise they would be grown by thousands where only scores are at present grown. Take, for example, some of our London parks and public gardens, and here you will find a vast number of either empty beds or at least bare surfaces in that portion occupied by bulbs, with no other chance but that this monotony must prevail till the bulbs push through the soil three months hence. How much more natural and pleasing the effect if, meanwhile, such beds as these, after the Tulips, &c., are planted, were carpeted with such things as *Violas* or even *Myosotis dissitiflora*, or some such simple plant; *Limnanthes Douglasi*, again, would here and there make a change if necessary, though among *Violas* there is an almost endless variety of form and colouring. A natural carpet such as this would make a very pleasing and desirable change, and the effect would be enhanced by studiously avoiding a yellow Tulip and a yellow *Viola* appearing on the same bed, or in short any two of like colour. The *Violas* may readily be planted after the bulbs, and thus, instead of a bare surface to gaze upon, the public would have something to relieve the monotony for the moment, and which would burst into bloom in the earliest days of spring.

This plan need not be monopolised by public gardens, for it is quite as desirable in any garden, and I doubt if anyone will gainsay its usefulness and effectiveness. Again, take a bed of standard or dwarf Roses, and what more delightful companions have we than these and *Violas*?—the latter crowded with endless buds and flowers, while the Roses are only bursting as it were into new life. Is it impossible for those who have the management of these large public gardens, to make an attempt at what I describe? or are they content to continue their round of carpet designs year by year, which entails a great amount of labour annually, while little if any change or improvement is noticeable? Slowly, but still surely, the bedding *Viola* is becoming more popular, and it only means a little waiting to see these useful flowers in much more general use than now, and their hardiness and free-flowering properties cannot but assist in popularising them. The great improvements of late years among these has brought us many fine varieties, a brief notation of which, as well as of some of the older,



FIG. 94.—*DISA GRANDIFLORA*: FLOWERS CRIMSON AND PINK. (SEE P. 664.)

of these plants, particularly in the South. By many, the most important fact in regard to their culture is lost sight of, and that is the right time for planting. Many people imagine—and rightly, too, so far as it goes—that *Violas* will transplant readily for several months in the year. Quite so, but only with a certain amount of success. Of course the season they

time for planting them to guarantee these results like early autumn. Any one who requires *Violas* to make an early display should plant early in October, from cuttings taken in the end of July, or early in August. These are the right stamp for producing the best effect. Those of your readers who have planted largely from summer-struck plants during the

though equally good forms, may serve to exhibit their diversity of colour.

New Varieties.—Sir Joseph Terry, rich black-violet self; a very free and continuous bloomer; Ethel Baxter, bright rosy-peuce, with darker veins, the upper petals shaded lilac, also an excellent variety; Mrs. Baxter, rich rosy-purple, shaded with lilac and lavender; a fine bedder; Merchiston Castle, rich crimson, shaded with violet, and margined with white—a most distinct shade; Spotted Gem, a rosy-purple flower, flushed with white—very free and distinct.

The following are among the best of the older varieties:—Whites: Countess of Hopetoun, Jaffray-anum, Pilrig Park, Champion, and Mrs. Smith, the first being decidedly the best white *Viola* yet raised. Yellows: Ardwell Gem, Ballion, Golden Prince Improved, and Golden Queen of Spring. Lavender or mauve shades: elegans and Duchess of Albany are the best. Then we have excellent kinds in Bronze Queen, True Blue, Cliveden Purple compacta, Queen of Lilacs, and Queen of Purples, all of which enjoy descriptive names and are first-rate bedders. Archie Grant is a bold, handsome kind, with rich, violet, purple-blue flowers; while Countess of Kintore, a most popular market variety, has purple, slate-blue and white flowers, an excellent bedder in every respect. There are many other good kinds, but the above will be ample to select from, while those who select from them may have the satisfaction that they are all excellent bedders, free bloomers, and possessed of sound, vigorous constitution. *Viola*.

HARDY FLORISTS' FLOWERS.

THE AURICULA.

DECEMBER is the resting period for these plants, but whether it is so will greatly depend upon the weather. It was cold enough in October, but from the middle to the end of November the weather has been exceptionally mild, and the appearance of the plants is more like spring than November. I like my plants to put on their best dress in April, not in November and December. No plant known to me likes less to be excited at unseasonable times; and they seldom afford first-class trusses of bloom in April unless they have a season of perfect rest in December and January, and this resting period can only be obtained if the weather be cold. All we can do at present is to remove the lights from the frames entirely when possible, admitting air freely when the lights cannot be removed. It is favourable weather for seedlings and small offsets; these are looking very well, and none of them have died off from damp. I am of course careful to remove all dead and decaying leaves, alike from the old and the young plants. I have so often urged the importance of destroying all the aphid tribe, that nothing further need be said on that head. Of one thing I am more and more convinced as the years go on, that grave errors are committed by standing the pots on, or plunging them in, ashes or cocoa-fibre refuse. I have only just heard of an amateur who has lost some of his plants, and had others injured, by merely standing the pots containing the plants on ashes which must have contained deleterious substances. Some years ago I placed a frame full of plants on cocoa fibre refuse, and about an equal number on trellis-work in the frame, the trellis being of wood—the plants did best on the wooden trellis. Mr. Horner grows his best plants on a wooden trellis all the year round; so also does Mr. Simonite, of Sheffield. All our plants have this year been grown in a similar manner. I merely mention this as one of the details of the work, worth the notice of amateurs. It may be a small matter, but attention to the smallest details of our work brings success in the long run. Out-of-doors, plants look remarkably well, and, in my own case, have for some time been almost smothered with decayed leaves blown into them from Lime and other trees near. As long as the leaves are dry there would be

no danger of the plants being injured, but if a long-continued period of rainy weather set in, decay of the main stems may be engendered, and the plants might die. It is better, therefore, to clear off all these leaves together with the decaying leaves of the plants and leave the latter without this protection. Pot plants should not be allowed to suffer from excessive drought, although quite the minimum of water is required in December and January.

CARNATIONS AND PICOTEEs.

At p. 446 of the present volume I made some comments upon taking off the layers for potting or planting-out. At that time many growers were complaining about the layers being badly rooted and the weather being very cold; the prospect of getting the plants well established before the winter was not very promising, but November has been much better than October for the plants, and if they have been well cared for they will now be in a good condition to pass through the winter. All my pot plants are well established, and at present they look very promising. The whole collection has been thoroughly cleaned, and the surface soil stirred up, removing weeds, and killing any insects found on the leaves. Where the plants are well established, the lights are removed entirely from the frames to allow the air to play freely around them. I have a number not so well established, and these have been placed in a small frame by themselves where they can be kept closer; the plants always keep more plump, and produce roots more freely in a close frame.

Out-of-doors plants are looking very well, the seedlings better than one could expect, after the way they were deluged with rain, in some cases being under water for two days, about August 1. The ground became excessively hard afterwards, but since it has been stirred up the plants have become well established, and are now quite vigorous, although of small size.

TREE OR PERPETUAL FLOWERING CARNATIONS.

These plants require a night temperature of 55°, less or more, to develop the flowers perfectly. The plants are not so strong this season as usual, and the best is the yellow fringed variety, Andalusia. This has always flowered freely with me at this time of the year. Besides the perpetual flowering varieties we potted up a number of plants of the ordinary kind of Carnations, and included a few of the ordinary Picotees. These were plants that spindled for bloom soon after layering. We have been able to cut blooms out-of-doors during the last week in November in sheltered places, so mild has been the weather. I saw in Messrs. Paul's nursery at Cheshunt some very dwarf varieties flowering most freely; they had been dug up from the open ground and potted some time in October. The plants were about 1 foot high and a mass of bloom. The best of them were Albertine Carle, blush; Alegatiere, scarlet; Jean Sisley, buff, scarlet stripes; Madame Carle, pure white. *J. Douglas*.

TREES AND SHRUBS.

NOTES FROM COOMBE WOOD.

DAPHNE MEZEREON AUTUMNALIS.—A fortnight ago, on a visit to the Coombe Wood nurseries of Messrs. Veitch, we noticed a number of plants of this handsome Mezereon in full bloom. Scarcely a fully expanded flower was to be found on any of the plants of the typical species, and in addition to its precocity in the matter of flowering, the individual blossoms were decidedly larger, and of a deeper shade of colour, than those of the old-fashioned but deservedly popular *Daphne Mezereon*. We were informed that the variety whose name figures at the beginning of this note had already been in flower a week or two previous to our visit. Does any reader of these columns know the history and origin of this fine variety? If so, he would doubtless confer a favour on many readers by publishing the facts.

LIGUSTRUM MASSALONGHIANUM.

In vol. xvi., p. 149, of the *Gardeners' Chronicle* is given a figure of this handsome Privet, which we recently saw flowering freely in pots. Although not as hardy as many of the Privets, it is a plant well worth growing for the beauty of its compact panicles of white flowers with reddish-brown anthers. Its floriferousness, compact habit, and the peculiar aspect of its long narrow leaves, make it a very desirable plant for corridor or cool conservatory decoration. It is a native of the Khasia Hills.

HYMENANTHERA CRASSIFOLIA.

One of the most remarkable of hardy shrubs now to be seen in the nursery is the plant figured in the *Gardeners' Chronicle* for 1875, vol. iii., p. 237. Messrs. Veitch's finest specimen is a dense bush, nearly 5 feet high, and as much through, laden with small white berries. It is a native of New Zealand, and is remarkable as being the only member of the *Violet* family (of a shrubby nature) which is hardy in the climate of Britain.

CYDONIA JAPONICA MOERLOOSEI.

Among the numerous forms of the old Japan Quince this is perhaps the most continuous flowerer. At any rate it is the only one in the nursery which exhibited quite a profusion of scarlet flowers. It is said to be almost always in flower, and the effect it produced on a dull November day can be readily imagined. Evidently there are two plants—quite distinct from each other—cultivated under the name given at the head of this note in different nurseries; for on consulting the descriptive catalogue of one of the principal German establishments, *Cydonia japonica* Moerloosei, we found, was credited with having white flowers washed with carmine. Whatever may be the right name of the Coombe Wood plant, it is a good thing.

MAGNOLIA GRANDIFLORA.

Without a doubt this is truly a very fine shrub, and its white, sweet-scented, cup-shaped, very fragrant flowers of large size never fail to elicit admiration, whether viewed on the plant, or when cut. Unfortunately as cut flowers they are of short duration. In a fair-sized room two flowers are sufficient to scent it, and any more would be less pleasant. The blooms are not very much inferior to those of the Victoria Regia, to which, at first sight, they bear a considerable resemblance. It is somewhat strange that although the plant has been in this country for over 150 years, yet fine specimens are rather the exception than the rule in gardens—a fact which may be due to its being too tender to do well in the colder and rougher parts of the kingdom. At all events, as a flowering shrub, or half tree in the open, but with the protection of a wall, in a warm position, it will grow vigorously and flower freely, attaining large dimensions. Good examples of the plant on a wall may be seen in the Earl of Ashburnham's gardens at Ashburnham Place, Battle, Sussex, where, amongst others, two large plants of the Exmouth variety have been in splendid flower this past season. The plants cover a great expanse of a wall, which is about 20 feet high, and not a few of the blooms were nearly a foot across. Mr. Holmes, the gardener, informed me that these specimens were more or less in flower for the greater part of the year, and that the variety is much superior to the ordinary form of *M. grandiflora* in the quantity and quality of its flowers. *F. Ross*.

PLANTS AND THEIR CULTURE.

ASPIDISTRA LURIDA.—There are few plants can so well withstand the adverse conditions to which they are exposed in house decoration; but it is of much importance that the leaves be kept free from dust by frequently sponging them. Notwithstanding its enduring qualities it is desirable to occasionally renew a portion of the stock; and this, owing to the comparatively slow rate at which it can be propagated, is possibly a great drawback. Seeds

may sometimes be obtained, but the general practice is to cut up the creeping rootstock into small pieces with one leaf or more attached. These pieces should then be either potted singly into pots slightly larger than the pieces, then sinking the pots in plunging material over a gentle bottom-heat, or the pieces may be planted thickly in the plunging material. If this be leaf-soil, and potted up afterwards; but by potting at once they become sooner established. A moderately moist atmosphere at about 60°, will accelerate rooting, but they may also be successfully grown on in an ordinary greenhouse, taking care, however, not to break them up into very small pieces, as latent buds do not start so readily under cool treatment as under warm. Moreover, in warmth, finer and larger leaves are developed, especially in the case of the variegated variety, which is by far the more prized. They delight in a rich loamy compost, well-drained pots, and a good exposure to light, with copious syringings. While the plants are small and not yet established the leaves should be held upright with sticks to prevent the pieces being moved.

Tuberose.—The fragrant blossoms of the Tuberose are usually much appreciated, and they are alike useful for bouquets of all kinds, button-holes, and sprays. To keep up a steady supply nearly all that is necessary is to put in, or rather start successional lots of bulbs at intervals. There is now, owing to the early arrival of African bulbs, not much difficulty in maintaining an unbroken supply, as by the time the last of the Americans are out of bloom Africans are ready to take their places. Sometimes disappointment is experienced when roots miss to flower, and in some cases this arises from the bulbs not being properly ripened; but I have known cases where the failure was attributable to mismanagement. A common cause of loss to flower is by attempting to force them into flower before the bulbs have had time to make roots; and when this happens, even if flowers are produced, they are not of the fine quality obtained from well-rooted plants, therefore see that root-growth is well in advance of the top. In potting, a convenient plan is to place three bulbs in a 32-pot; this size being sufficiently large to grow them well, and as they grow tall, and require staking, one stick inserted in the centre of the pot is sufficient for the three flower-stems. If grown singly, pots of a size smaller may be used. A strong, rich, loamy soil suits them, and after being potted, plunge them in a mild bottom-heat, but avoid watering much until the roots appear freely round the ball; indeed, if the soil be properly moist at the time of potting watering will rarely be needed until the bulbs are well rooted, after which they may be pushed on in a moist stove. By potting up a quantity at one time, a long succession of bloom can be maintained by plunging them where only an intermediate temperature, or under 60°, is kept, there they will come on slowly, and may be hastened by introducing them as required into the forcing-house. There are several varieties, and although all are good, the Pearl, on account of its dwarfer habit, is often preferred to any other. After flowering, if they are to be kept for another year, plenty of heat, light, and water, until their leaves begin to show signs of ripening off, when drier and airier conditions should be maintained. But imported bulbs are now so cheap that it is scarcely worth while to keep old ones.

Fuchsias.—Late struck cuttings should be potted on as they require it, for if allowed to get into a stunted condition, it is difficult to start them freely afterwards. A loamy compost, with a good proportion of leaf-mould, or decomposed manure, and rough sand to make it porous, will grow Fuchsias well. After potting they are much assisted by a few degrees more warmth for a fortnight, with a moist atmosphere, as this enables the root to lay hold of the new soil readily; but as soon as they begin to grow, the less fire-heat there is employed the better, and where greenhouse pits are found, no better position need be desired for them. Being placed on shelves near the glass in a greenhouse answers well, and while the plants are in pots not exceeding small 60's, it is a convenient practice to place them in shallow boxes before standing them on the shelves. The pots are then not so liable to be knocked off the shelf, nor are the plants so much trouble to keep moist. *F. Ross, Bletchingley.*

THE FLOWER GARDEN.

GENERAL WORK.—See that all is neat and orderly in the flower garden and pleasure grounds, not neglecting the more distant parts of the grounds. Clumps and shrubberies should receive timely attention, staking and tying any branches that may have become misplaced by wind, shortening back straggling shoots, but not carrying out a general pruning of evergreens or deciduous shrubs for the present, that operation being better deferred to a later season. Rake and clean the ground under shrubs, and lightly point over the surface with a fork. The present time is opportune for repairing drives and walks, and any defective drains should be put in order, and catch-pits cleaned out. Gravel walks which have long been laid should be turned, and re-surfaced with a layer of fresh gravel, and the latter, if of a rough character, should be passed through a half-inch screen or sieve before using. The walks should be 2 or 3 inches higher in the centre than at the sides, and must be well rolled at frequent intervals. In the case of shrubs, border plants, hardy perennials, and bulbs of doubtful hardiness, it will be advisable to have means at hand for protecting such, for notwithstanding the mildness of the season, a change to severe weather may occur without much premonitory warning. As a material for the purpose, Spruce Fir branches, when used sparingly, are very good. For Hyacinths, Tulips, and similar subjects I do not know of anything to equal coarsely-sifted leaf-mould, coal-ashes, or cocoa-nut fibre refuse, a 2 or 3-inch layer of which will ward off many degrees of frost. This may also be used for protecting the crowns of tender species of herbaceous plants. Put handlights over *Helleboros niger* if clear and well-developed flowers are required for decorative purposes, not forgetting, however, to afford ample ventilation by tilting up the tops of the lights in the day-time.

Frame Ground.—Frames containing half-hardy perennials as well as young stock should be ventilated daily, taking off the lights entirely in the day time in fine weather; keep the plants free from decaying leaves, and the surface soil from moss, paying due attention to the covering up of the frames at nights. *J. Horsfield, Heytesbury.*

FRUITS UNDER GLASS.

VINES.—If the buds on the early Vines are on the move the temperature may be advanced to 55° on cold nights, and to 60° on mild ones; and the latter figure should not be exceeded until such time as the Vines approach the flowering stage. Whenever the leaves begin to unfold discontinue syringing the Vines, and let the atmospheric moisture be wholly supplied by sprinkling the paths and borders, and by turning over a portion of the fermenting material every morning. Guard against spilling water on the hot pipes, this proceeding raising a cloud of steam, which is highly prejudicial to the young foliage of the Vine.

Pot Vines which were recommended to be started on a bed of fermenting leaves will require slight additions to be made from time to time to the materials of the bed, so that the heat may be maintained. This should not, however, exceed 85°. When the leaves unfold discontinue syringing, as in the case of planted out Vines, and supply the necessary humidity as above advised. Tie the rods to their supports in time, and where two shoots spring from one joint rub off the weaker; stop the shoots at the second or third leaf beyond the bunch, and remove all the bunches excepting the best six as soon as their size can be distinguished. When the foliage is fairly developed assistance with weak manure-water may safely be afforded the plants, and as soon as the roots are discernible through the surface-soil an inch in depth of rich loam, horse droppings, bone-meal, or Thomson's manure, should be placed over them, and when this has got washed in by watering another similar dressing may be given, and repeated when it should appear needful. If Vines which are confined in a 12-inch pot suffer from scarcity of water, or insufficient root food, the produce will not be worth much. Advance the temperature to 60° when the buds have burst, and when the leaves are fully developed raise the night temperature to 65°—10° higher by day if cloudy, and 5° higher than that with sunheat. Vines started this month require a treatment precisely similar to those started last month.

Grapes hanging on any Vines will require to be frequently examined, and all decaying and mouldy berries cut out, as these soon communicate decay to the sound ones; the night temperature in such houses may be kept at about 45°—not higher, and when the weather permits of it being done plentiful ventilation should be afforded, but in wet and foggy weather the ventilators must be kept shut. Look over the bunches in the Grape-room once a week, and keep up a steady temperature of 45°.

Prune and cleanse late vineries, removing the top-dressing of soil down to the roots, and re-surface with sound loam, lime rubbish broken small, and Thomson's Vine manure, afterwards giving a copious watering with tepid water. Secure the requisite quantity of shoots for making Vine eyes, and lay them in soil for the present. The shoots selected should be of medium strength, and well ripened. *W. M. Baillie, Luton Hoo.*

THE HARDY FRUIT GARDEN.

PRUNING.—The leaves now being off the trees, pruning may be commenced, and where a large number of fruit trees is grown advantage should be taken of the open weather to push on with it. Apple, Pear, and Plum trees in the open quarters should first receive attention, the prunings and leaves raked up, and the borders made tidy. If these trees received proper attention during the summer, but little will remain to be done beyond shortening back and spur-ring in any young growths that were then overlooked; but where the pruning was not done at that season it must be seen to now. All trees which have filled their allotted space should have the young wood spurred-in to two or four buds, according to the variety. For medium and weakly growers spur-in to two buds, and the stronger growers to four buds. It frequently happens that when the trees have become fully established they are found to be crowded with branches, and in consequence sunlight is excluded from the inner parts of the tree, and the quality of the crop much impaired. In such a case some of the worst placed and oldest branches should be sawn clean out, taking care to pare the surface of the wounds with a knife or chisel. Attend to the training of young growing trees, thinning and regulating the branches. For the purpose of training, stakes about 3 feet in length should be provided, and these to the number of six or seven should be driven in the ground at regular intervals round the tree, and by means of strong twine the branches can then be placed in any desired position. After one or two years the ties can be removed, as the branches will then have become set in the wished-for form. If it is desired to propagate any particular variety the scions should be selected and cut off before the tree is pruned, labelled and laid in a shady place.

Pears and Plums on walls should next be taken in hand and with these—young trees excepted—the principal part of the pruning will consist of merely spur-ring in the young wood to two or three buds, and leaving a sufficient number of young shoots to fill up gaps caused by loss of branches. Unless well looked after, old trees are in course of time apt to become crowded with spurs, and as a natural consequence the produce is inferior. These spurs should be reduced in number and length; and when the work is finished they should stand at 4 or 5 inches apart on the branches. With young trees the wood that has been laid in during the summer will require to be regulated and thinned, bearing in mind that only sufficient should be retained for forming the main branches, the number depending on the style of training adopted. When a certain number of the trees have been pruned, the nailing of such should be begun. Examine old shreds and make good deficiencies; but in nailing use no more shreds than are necessary to make the trees secure, and see that they are not fastened too tightly round the branches. For fastening the main branches tarred twine is preferable to wide shreds.

The Fruit-room.—Remove all specked and decaying fruit, and as regards Pears do not trouble about filling up the gaps caused by the removal of decayed fruit, for the less they are handled and moved about the better. Allow a free circulation of air to pass through the room by keeping the ventilators open on all favourable occasions. Endeavour to use up all the earlier varieties of Apples and Pears for present consumption, reserving the late keeping varieties for future use. *A. Ward, Stoke Edith Park.*

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APPOINTMENTS FOR THE ENSUING WEEK.

MEETINGS.

MONDAY, DEC. 10—Chambre Syndicale of Ghent.
TUESDAY, DEC. 11—Royal Horticultural Society: Scientific, Fruit and Floral Committees.

SALES.

MONDAY, DEC. 10—Dutch Bulbs, at Stevens' Rooms. Dutch Bulbs, at Protheroe & Morris' Rooms. Clearance of the whole of the Nursery Stock and Greenhouse Plants, at the Hadley Nursery, Barnet, and Leasehold of Nursery (six days) by Protheroe & Morris. Dutch Bulbs, Lily of the Valley Roots, &c., at Small's Rooms.
TUESDAY, DEC. 11—Established and Imported Orchids at Protheroe & Morris' Rooms. Roses, Greenhouse Plants, Bulbs, &c., at the City Auction Rooms, by Protheroe & Morris. Roses, Fruit Trees, Shrubs, Bulbs, &c., at Stevens' Rooms. 15,000 Liliun auratum and other Bulbs and Plants, at Protheroe & Morris' Rooms. Dutch Bulbs, Lily of the Valley, and Roses, at Small's Rooms.
WEDNESDAY, DEC. 12—Orchids in Flower, 5000 Liliun auratum, &c., at Stevens' Rooms. Dutch Bulbs, at Protheroe & Morris' Rooms.
THURSDAY, DEC. 13—Imported and Established Orchids, at Protheroe & Morris' Rooms. Liliun auratum, Dutch Bulbs, Roses, &c., at Small's Rooms.
FRIDAY, DEC. 14—

Cape Orchids.

SOME three years since Mr. N. E. BROWN published in our columns a notice on the terrestrial Orchids of the Cape of Good Hope (see *Gard. Chron.*, August 22, 1885), which excited some attention among orchidists. Mr. BROWN's article was avowedly based, to a considerable extent, upon the notes of Mr. HARRY BOLUS—a hard-working and eminent botanist resident at Cape Town, and specially conversant with the most interesting flora of that peninsula. Since the time to which we refer Mr. BOLUS has contributed various articles to the Linnean Society, and now we have before us a very valuable work on the *Orchids of the Cape Peninsula*, and which is described as an offprint from the *Transactions of the South African Philosophical Society*. The work in question is modestly denominated an attempt to describe "the Orchids growing on the peninsula of the Cape of Good Hope, to give their names and synonyms, to arrange them as far as possible in groups, to adduce the stations where they have been found, and their further distribution so far as known. To this is added a list of collectors, and of books and papers already published upon the subject of South African Orchidology."

The Cape peninsula is as remarkable for the singularity as for the beauty of its flora. The Cape Heaths, the Proteads, are known and appreciated among horticulturists, while they are botanically interesting in that they are for the most part peculiar to the Cape, and not found

elsewhere. In the corresponding corner of the Australian continent, however, occurs a flora equally characterised by singularity and beauty. Proteads and Restios abound as at the Cape, but while the larger groups or genera are the same the species are all different, while the place that the Heaths occupy at the Cape is filled by the nearly allied yet quite distinct Epacrids of Australia. We cannot pursue the subject further now, but we have probably said enough to indicate one of the reasons why the Cape flora is so interesting. Botanists belong to that group of inquisitive people who want to "know the reason why," and, of course, the near relationship, coupled with the absolute distinctness of the two floras above-mentioned, offers a problem of no little interest, the solution of which is probably to be found in the original land-connection of the two countries now so widely separated. If this were so the original flora was probably different from both those now existing, and divergences have taken place subsequently. The collection and investigation of evidence in support or refutation of these hypotheses necessarily adds largely to our knowledge, and on this account may appease the hunger for facts of those people who complacently prefer an ounce of fact to a ton of theory, ignoring the truth that reasonable speculations are eminently serviceable in bringing to light facts which, but for their assistance, would remain latent. Turning, however, to Mr. BOLUS' book we find the Cape peninsula described as—

"A tract of land about 40 miles long, varying in width from about 3 to 11 miles, and connected with the continent by a broad and low sandy isthmus, 11 miles wide. In area it is rather larger than the Isle of Wight. A great part of its surface is occupied by a central mountain range, running north and south from Table Mountain, which attains an elevation of 3562 feet, to the southern extremity at Cape Point. . . . The exposed rocks are, for the most part, sandstone on the mountains, with patches of the underlying clay slate, and also granite; on the low ground are sandy downs of considerable extent. The climate is temperate, the mean annual temperature 61° F. Frosts on the low ground are rare, and even on the mountain-tops snow is an unusual occurrence, and never lies for more than a few hours. The annual average rainfall varies in different localities from 23 to about 60 inches, and two-thirds of it falls during the winter months of May, June, July, and August, the warmth of the summer months being tempered by the prevalent southerly winds of that season. In many respects the climate resembles that of the Riviera.

"The steep ravines of the mountains are filled with indigenous shrubs or trees, while their sides are in many places dotted with the Silver Tree (*Leucadendron argenteum*); at their feet are scattered bushes or copses of imported Pines and Oak, all else, including the sandy downs of the isthmus, is covered with a Heath-like growth of small dull-coloured shrublets, from 1 to 3 feet in height, yet not closely, but interspersed with a great variety of herbs, Restiaceae grasses and bulbous plants. Stretches of grasses or grass-like plants, occur in a few places, where the bushes by continued burning and grazing have been eradicated, but are not common; surface water, except for a few months of the rainy season, is deficient, and aquatic plants, though not absolutely wanting, are not abundant in species or individuals."

We cite the foregoing paragraph as supplying cultivators with some details which may be of value to them. Mr. BOLUS pursues his subject by giving special details with reference to the number and distribution of Orchids in the peninsula, and the resemblances or differences to be discovered between the Cape Orchids and those of Chili and South-west Australia. The total,

like the proportional number of Orchids in this corner of South-west Africa, is very large and only surpassed by that of some parts of Australia.

Most of the 102 species are confined to the mountains or to the flats, as the low sandy downs of the isthmus are termed. The majority of the species flower in early spring and summer.

An interesting appendix to this portion of the introduction consists in a list of the chief collectors on the Cape peninsula, with brief biographical details. This is followed by a corresponding list of botanical writers who have treated of Cape Orchids. The bulk of the volume comprises a detailed systematic account of the ten genera and 102 species, founded upon actual comparative investigation of the living plants, and therefore most valuable to the student, for whose convenience also analytical keys are added.

Of *Satyrium* eighteen species are enumerated, while it may surprise some Orchid lovers to hear that *Disa* comprises no fewer than forty-six species, natives of this particular region. Of these the best known and the most beautiful is the species here called, in compliance with the law of priority, *D. uniflora*, but which is better known in gardens as *D. grandiflora* (fig. 94). This plant grows along the margins of streams (which frequently become dry in summer), on Table Mountain, at an elevation of from 1100 to 3300 feet, flowering from January to March. As this plant is such a universal favourite the following particulars, given by Mr. BOLUS, may be of interest:—

"This beautiful flower is the object of universal admiration, and the name which has been given to it—'The Pride of Table Mountain'—indicates the honour in which it held. It is, indeed, the queen of terrestrial Orchids in the Southern Hemisphere, as *Cypripedium spectabile* may be said to reign, though with less magnificence, in the Northern. The first mention hitherto discovered of this plant is in the *Historia Plantarum* of our old English botanist, JOHN RAY, in the third volume of which, published in 1704, p. 586, it is enumerated as '*Orchis africana flore singulari herbaceo*, D. OLDENLAND, Mus. Pet. 280,' and, after a brief description, RAY adds that he received a dried specimen from D. PETIVER, amongst other rare plants sent by D. OLDENLAND. This, however, was before the time of LINNÆUS. The first botanist to describe and publish it under the Linnean binomial system as *Disa uniflora* was BERGIUS in 1767.

"LINNÆUS the younger, with the laxer notions which prevailed in his day in regard to the law of priority of nomenclature, thinking that BERGIUS' name was inappropriate (since the plant has usually more than one flower) changed the name to *Disa grandiflora*. By the latter name the species has been so long and widely known, that to revert to the older one will cause inconvenience for a time. But BERGIUS not merely established the species; he also founded the genus upon this species, which has always been recognised; and, besides, gave an adequate figure, which left no sufficient reason for disregarding his name. Botanists are bound to admit such a claim, even at the cost of inconvenience.

"The earliest record of the flowering of this plant in Europe appears to have been in the *Botanical Register* for 1825, when it was figured from life. It is still abundant on Table Mountain, although of late years large quantities of the tubers have been annually exported to Europe, and much needless destruction arising from wasteful gathering by unskilled hands resulted; but the summit of the mountains being Crown land, the Government has recently intervened and restricted the removal of tubers within reasonable limits; so that, if the supervision be continued, there will be little reason to fear the extinction of this truly noble species."

Among other species of *Disa* are *D. megaceras*, the macrantha of gardens; the rose-coloured

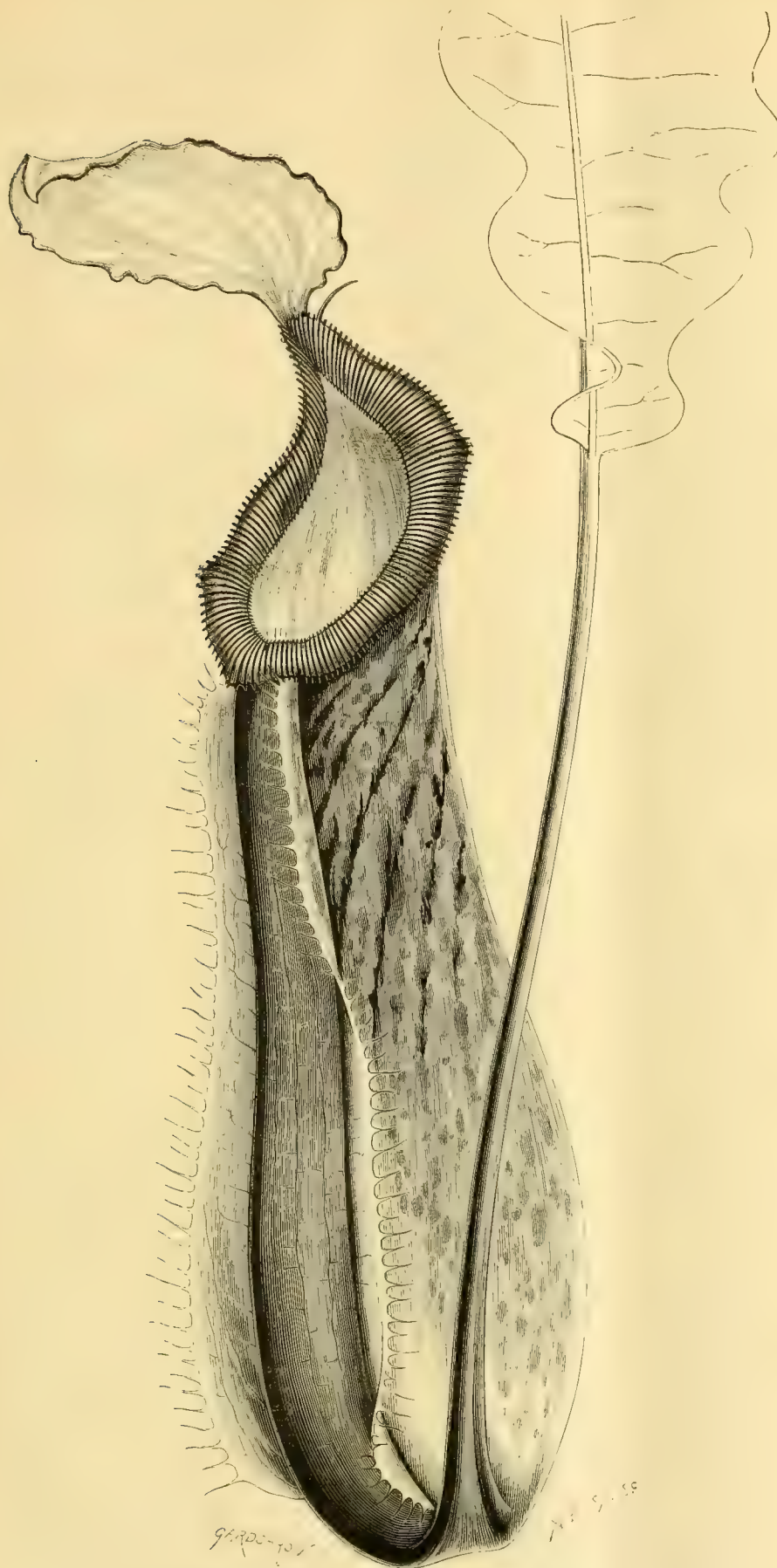


FIG. 95.—*NEPENTHES RUFESCENS*; COLOUR OF PITCHER GREEN, FLUSHED WITH RED.

Disa racemosa, figured in the *Gardeners' Chronicle*, 1888, fig. 81, p. 592; and various blue-flowered species, which form the subject of a note by Mr. N. E. BROWN.

Our notice of this book has extended to such a length, that we cannot add any further particulars concerning it, except to say that the author has carefully consulted the requirements of students by supplying an index, and, best of all, by supplying a series of thirty-six partially coloured lithographic illustrations, in which the botanical details are so clearly given, and in so workmanlike a way, as to give every confidence in their accuracy. As this book is likely to be in demand among Orchid lovers, we regret to note the omission of any publisher's name.

NEPENTHES RUFESCENS × (*hyb. nov., in hort. Veitch effecta*; fig. 95).—This is stated to be a cross between *N. Courtii* × out of *N. zeylanica rubra*. *N. Courtii* itself is a cross between an unnamed Bornean species and *N. Dominiana* ×, this latter being also a cross between *N. Rafflesiana* and the same undetermined Bornean species; so that our present plant is very much crossed, and combines the blood, if one may so say, of three species and of two hybrids. The stem is cylindric, reddish in colour, closely covered with decurrent, broad, sheathing leaf-stalks, ciliate at the margins, and each about 1 inch long. The leaves measure about 12 inches in length by 2½ inches in breadth; at the base they taper gradually towards the stalk, while at the apex they are rather acute. Two ribs run through the leaf parallel to the margin, and at a slight distance from it. The midrib is red. The pitcher itself is cylindric, green, flushed with red, 7½ inches long, by 2 in width; the mouth 1½ inch across, surrounded by a reflexed regularly ribbed rim; the lid, 2 inches long by 1½ inch wide, is oblong and spurred. The wings are ¼ inch deep, fringed. The plant was raised in Messrs. VEITCH'S nursery at Chelsea, and is an interesting addition to the genus.

ROYAL HORTICULTURAL SOCIETY.—It is anticipated that there will be at least six vacancies on the Council to be filled at the annual general meeting in February next. We understand that the following gentlemen have signified their wish to be relieved of the work which during the present year has been very heavy, viz., Mr. Thiselton Dyer, Professor Michael Foster, Dr. Hogg, Sir Edmund Loder, Mr. Harry Veitch, and Mr. G. F. Wilson.

NATIONAL AURICULA AND PRIMULA SOCIETY (SOUTHERN SECTION), AND NATIONAL CARNATION AND PICOTEE SOCIETY (SOUTHERN SECTION).—Mr. J. DOUGLAS informs us that a committee meeting of the above societies will be held at the Horticultural Club, Hotel Windsor, Victoria Street, Westminster, at 4 P.M. on Tuesday, December 11, to make final arrangements for the exhibitions. Members are urgently invited to attend.

GARDENERS' ORPHAN FUND.—We are informed by Mr. BARRON that he has received £31 from Mr. O. THOMAS, Chatsworth, as the result of the floral concert, held at Chesterfield, on November 14, in aid of the Fund. This result must be extremely satisfactory to the promoters and all concerned.—The usual monthly meeting of the committee took place at the Caledonian Hotel, Adelphi, W.C., on Friday, the 30th ult., Mr. George Deal presiding, there being, as usual, a good attendance, including Mr. George Bishop, Local Secretary for the Teddington district. The minutes of the last meeting having been read, the Chairman reported that the sub-committee appointed to open negotiations with the City Companies with a view of obtaining support from their funds, has commenced work, but nothing definite had at present transpired. The balance at the bank in favour of the Fund was announced to be £254 7s. 3d. Mr. W. Bates handed in the sum of £2, obtained

through a collecting box at the recent exhibition of Chrysanthemums at Twickenham; Mr. G. Bishop the sum of £3 6s., similarly collected at the Teddington Chrysanthemum show; Mr. G. W. Cummins the sum of 14s. 9d. from the collecting box at The Grange Gardens, Wallington, and 6s. 7d. obtained at the local Chrysanthemum show; Mr. Garnett, St. John's Gardens, Wakefield, the sum of £3, as a donation from the funds of the Yorkshire Association of Horticulturists; Mr. R. Scott, Moorfields, Manningham, the sum of £1 10s. 6d., the proceeds of a box at the exhibition of the Bradford Chrysanthemum Society; Mr. Wooderson, Bexley Heath, the sum of 1 guinea, from the Chrysanthemum Committee of Bexley; and Mr. H. J. Clayton, The Gardens, Grimston Park, Tadcaster, wrote stating that the committee of the York Floral Gala had voted the sum of £5 to the Orphan Fund. It was thought that if the gardening Press would give publicity to contributions of this nature, others might be induced to exert themselves in the same direction. A letter was read from Mr. Owen Thomas, The Gardens, Chatsworth, stating, in reference to the recent entertainment proposed in aid of the Fund by the gardeners of the Chesterfield district, that it proved a great success, 700 to 800 persons having been present, and the decorations made with autumn foliage and berries were unique, and greatly appreciated by the company. Mr. Drummond, nurseryman, Stirling, local secretary for that district, wrote expressing his regret that his efforts to obtain subscriptions from gardeners in Scotland had met with so little success, they appearing to think that the Institution is essentially an English one, and not intended for the Scotch. The committee regretted that this prejudice existed, but desired it to be widely known they were desirous of receiving applications from the friends of necessitous orphan children from every part of Great Britain and Ireland. Another gross of collecting boxes was ordered at a cost of £8 10s., the Secretary reporting that the sum of £15 18s. had been obtained through this means. A hearty vote of thanks was passed to Messrs. Bates, Bishop, Cummins, Garnett, and Scott for the contributions received through their agency. The proposal to hold another Covent Garden *fête* on behalf of the Fund was mentioned, but deferred for further consideration. A cordial vote of thanks to the chairman concluded the proceedings. The letter read from Mr. Drummond, seedsman, of Stirling, referring to the difficulty he has experienced in obtaining contributions to the fund from Scotch gardeners, owing to the prejudice which exists against the fund on account of its being considered an essentially English institution, conveys an impression that is altogether incorrect. It will be remembered that the committee announced in all the leading gardening papers their intention to elect six children upon the Fund, and applications were invited in the most open manner. We are greatly mistaken if it is not the earnest desire of the committee to make their Fund a blessing in all parts of the United Kingdom, however remote. An application from the northernmost parts of Scotland will, we are sure, be as favourably entertained upon its merits as would be one from Middlesex. Let our Scotch brethren put forth two or three candidates at the next election, and so practically test whether the feeling of exclusiveness really exists. Scotchmen are to be found upon the committee.

THE NATIONAL CHRYSANTHEMUM SOCIETY.

—A meeting of the general committee took place at Anderton's Hotel, Fleet Street, E.C., on the 3rd inst., Mr. E. SANDERSON, President, in the chair, nearly the whole of the members of the committee being present, including several representatives of local societies. The minutes of the last meeting having been read, the Hon. Secretary, Mr. WILLIAM HOLMES, announced that the arrangements for the annual dinner on the 13th had been made. A cordial vote of thanks was passed to the members who had acted as stewards of the November exhibition at the Royal Aquarium. Mr. C. H. PAYNE, the Foreign Corresponding Hon. Secretary, announced that a

growing interest in the Chrysanthemum on the Continent and the United States was shown in the applications he had received for catalogues, including some from Barbadoes and Constantinople. He had also received applications for membership from foreigners, and suggested that Americans should be required to pay an annual subscription of a dollar, and French and Belgian members five francs each, to cover cost of postage of documents, &c. Eventually Mr. PAYNE was requested to prepare a scheme for foreign membership, and bring up the same at the next meeting of the committee. The Society having offered for competition among societies affiliated with it a Challenge Trophy, to be in the custody of the President of the society winning the same for the space of the year, a sub-committee, consisting of Messrs. E. SANDERSON, R. BALLANTINE, and E. C. JUKES, was appointed to procure a salver, at a cost not exceeding £15. A letter was read suggesting that a Chrysanthemum Conference should take place on the day of the annual dinner. Eventually it was unanimously resolved that it should take place at the Royal Aquarium in connection with the winter shows on January 9 and 10, and a sub-committee, consisting of Messrs. C. H. PAYNE, L. CASTLE, and G. GORDON, were appointed to make arrangements for carrying out the same. The Hon. Secretary announced in reference to a provincial show in 1889, that he had received applications from York, Leeds, Hull, Derby, and Brighton, in each case a further application would be received, setting forth the proposed terms upon which such an exhibition could be held. The question of the proposed celebration of the centenary of the importation of the Chrysanthemum to Europe was postponed for the consideration of the new committee to be appointed in January next. Thirty-four new members were elected, including two new Fellows; bringing the total membership up to 630. The Hull and East Riding Chrysanthemum Society was admitted into affiliation. A vote of thanks to the Chairman closed the proceedings.

BROMELIACEÆ.—We are pleased to announce that Mr. J. G. BAKER has in the press this winter a *Handbook of Bromeliaceæ*, on the same plan as his *Handbooks of the Fern Allies and Amaryllidææ*. Upwards of 700 species are now known, which is twice as many as Mr. BENTHAM estimated in 1883. About 250 of them have been, at one time or another, in cultivation, and of nearly all of these fine coloured figures, life-size, are contained in the splendid collection which was made by the late Professor EDWARD MORREN, and after his death purchased by the BENTHAM Trustees and presented to the Kew library. The London herbaria contain specimens of about half the known species. Mr. BAKER has visited Paris; and also had the loan of the entire Berlin collection, and has found in these more than a hundred undescribed species. Dr. WITMACK is going to publish very shortly a paper on LEHMANN'S Bromeliaceæ, of which about thirty are new. The collections made by ANDRÉ in New Grenada and Ecuador have now been thoroughly worked out by himself, and are found to contain about sixty novelties.

PLANTS IN FLOWER IN THE OPEN AIR AT KEW.

—It is almost unprecedented to see so many Alpine and herbaceous plants in flower at this time of the year at Kew. Many plants are growing fast, such as Clematis, with young shoots 3 or 4 inches long. Rhododendrons are just bursting into flower; a Smilax we also noticed covered with flowers—indeed almost all plants are in such an advanced state as one only expects to see about February. Many species of *Wahlenbergia saxicola*, *Schizostylis coccinea*, *Brodiaea Leichtlinii*, *Crocus Clusii*, *C. ochroleucus*, *C. Cambessidesii*, *C. serotinus*, and many others, including *C. alaticus albus* and *C. Korolkowi*, spring flowering; *Lychnis pyrenaica*, *Arabis procurrens*, *Anemone blanda*, *Lithospermum prostratum*, *Sternbergia lutea*, *Campanula Portenschlagiana*, *Polygala chamaebuxus*, *Triteleia uniflora*, *Helleborus niger*, and other species; *Aubricia deltoidea* and vars., *Viola odorata*, *V. tricolor* vars.,

Symphytum tuberosum, *Grindelia lanceolata*, *Aponogeton distachyon*, &c.

BOTANICAL MAGAZINE.—The December number, which completes the sixty-fourth volume of the third series, contains illustrations of—

Begonia Scharffii, t. 7023.—An introduction of Messrs HAAGE & SCHMIDT, of Erfurt, from the Islar d of St. Catherine, South Brazil. It is one of the grandest species of this popular genus. The plant is about 18 inches high and hairy, the branches, flower-stalks, and the under surface of the leaves are blood-red, the leaves are dark green on the upper surface, with reddish nerves, and are about 1 foot long, very obliquely ovate-cordate, with rounded lobes, and an acute sinus. The flowers are white with a few red hairs outside, the male flowers being 2½ inches in diameter; sepals round, petals narrow. The females have elliptic segments, and measure nearly 2 inches in diameter.

Iris Suwarowi, t. 7029.—A native of Central Asia, being gathered wild in Turkestan by Dr. REGER in 1885. The segments of the perianth are closely veined with oblique claret-purple lines on a ground of greenish-yellow. The outer oblong-cuneate with a lilac-blue beard; inner oblong with a long claw, sometimes bearded. The glaucous green leaves are ultimately 1 foot long and a quarter of an inch broad. The flowers are borne singly, on a peduncle 1 foot long, bearing much reduced leaves.

Pentapera sicula, t. 7030.—An ericaceous shrub, with pale pink flowers. A native of Sicily, and also recorded very recently from Cyprus and from Barca. Illustrated in our columns for September 22 of this year, p. 335, fig. 45.

Hesisia bidentata, t. 7031.—This Orchid is an introduction from the United States of Columbia, Panama, and Nicaragua. It has flowers of scarlet, about 1 inch in diameter, and borne from between the leaves in few-flowered racemes; the segments are ovate-oblong, obtuse, petals smaller than the sepals. The lip is sharply deflexed from the claw, which is adnate to the column; it has straight sides and a triangular apex, which is bifid, and darker than the rest of the flower. It is pointed out that the lip is not erect in the specimen figured, whereas in the *Genera Plantarum* it is stated to be one of the characters of the genus.

Primula Rusbyi, t. 7032.—This is a very pretty recently discovered American Primrose, and was introduced into this country by Mr. A. DEAN, Bedford, in 1885. It was first found on the Mogollon Mountains, in New Mexico, by a traveller whose name it bears. It has also been found on the summit of Mount Wrightson, in Arizona. The drooping flowers are bright rose-red, with a darker eye, and yellow in the tube, which is not thickened. The leaves are 3–5 inches long, narrowly spatulate, subacute, callously crenulate, and narrowed to a slender petiole; pale green above.

HARDY FLOWERS IN DECEMBER.—Mr. BURBRIDGE kindly sends us from Dublin a bouquet that would not pass muster in Covent Garden, nor obtain a Certificate from the Floral Committee—one to which little or no commercial value could be assigned, but which, nevertheless, is of great interest. We will begin with Primroses and Polyanthus, of which there is a good bunch to lure us on. Then there is a seedling single quilled pompon Chrysanthemum, of a lilac colour, and delicious aroma, the quills showy and attractive, but the real work is done by the less conspicuous flowers in the centre. *Amicia zygomeris*, a curious Leguminous plant, with huge stipules, encasing, as in a box, the young pinnate leaves, and with racemes of yellow Pea-shaped flowers, the upper sepals very large in proportion to the other three, and forming two side pieces like cheeks to the flower, or again reminding one of those plates of gold with which Dutch ladies are wont to bedeck their temples. Doubtless these two side pieces, like the stipules in the case of the leaves, are in some way connected with the protection of the flower-bud in the young stage, or with the fertilisation of the flower, or both. *Senecio pulcher* is very showy with

its brilliant lilac flower-heads, but there is a lack of refinement and "finish" about the plant that seems to call for the aid of the florist. *Eurybia argyrophylla* is remarkable for its bold, Holly-like foliage, the under surface of the leaves being covered with white, felted down; when crushed the leaves emit a fruity odour. Then there is that strange, straggling skeleton Bramble, *Rubus australis*, that no one would value it for its appearance alone, but so curious that the botanist would find it as much to his catholic tastes as the most gorgeous *Cattleya*. The leaves, in fact, are reduced to their ribs, and these having nothing to carry stretch out rampantly bearing at their tips just an apology for a leaflet which enables one to say that these miniature scaffold poles really are leaves. There is not much leaf-green (chlorophyll) in the plant, but what there is, must needs work hard. Another straggler equally interesting, but more beautiful is the *Cuscuta verrucosa*, a leafless twiner with clusters of white, bell-shaped fragrant flowers about half the size of those of the Lily of the Valley. If the skeleton Bramble had but little chlorophyll, this has still less, but it makes up for its own deficiencies by appropriating the property of its neighbours, its neighbour in this case being the pretty *Calceolaria violacea*. In fact, the plant is a Dodder, such as is common enough on heaths and in Clover fields, and which sometimes appears in the Pelargonium-house to the astonishment of the gardener, the mystery being readily explicable from the fact that the seeds are introduced with the peat used for potting. *Ficus diversifolia* has curious thick wedge-shaped leaves, the mid-rib of which branches with two equal divisions above the base. Our correspondent asks why? The only suggestion that occurs to us is that the plant, as its name implies, sometimes produces lobed leaves, and this branching of the mid-rib affords an indication of a propensity which would otherwise not be suspected from the very reniform leaves of the specimen before us. Great water pores exist on the under surface here and there, and a purplish blotch (gland?) in the fork of the mid-rib. In point of fact there are all sorts of "whys" to be asked respecting this curious plant, to not a few of which it would be difficult to find an answer, all the more interesting to the searcher after truth. The specimen before us bears several of its small ovate "figs," the marvels of which have been descanted on from time to time in our columns by Dr. GEORGE KING and Mr. HEMSLEY. Lastly, we may mention the "Buffalograss" *Stenotaphrum americanum*, remarkable as a forage plant and for the thick flattened rachis on which the florets are borne.

H. ALOIS KROPATSCH.—This well-known correspondent on horticultural matters in the pages of a contemporary has been appointed as Head Gardener at the Imperial Gardens at Laxenburg, near Mödling, Upper Austria, in place of H. J. EHRLICH, who has been transferred to the Prater, Vienna.

A GOOD LACQUER FOR LABELS.—The *Revue de l'Horticulture Belge et Etrangère* gives the following as a means by which garden labels of wood may be rendered lasting:—After writing the name on the labels they are to be coated with a solution of gum arabic digested in 30 per cent. pure alcohol, using a soft camel-hair pencil, and observing to cover the edges of the label thoroughly. When this lacquer is dry it is brushed over with another made from mastic ten parts, two-tenths fluid storax, and thirty-five parts alcohol.

RETINOSPORA PLUMOSA.—In a garden at Canterbury the other day we noticed a shrub of this denomination covered with unmistakable cones of *R. pisifera*. Earlier in the year we saw at Wolverston Park a bush of *R. squarrosa*, of which Mr. Sheppard kindly sent us a specimen, and which was also covered with cones of *R. pisifera*. These cases afford proof that both *plumosa* and *squarrosa* are only forms of *R. pisifera*. Cats have nine lives,

greenly nobody knows how many, and many plants live under many different guises.

PANDANUS FURCATUS.—Of this rather rarely met-with plant, Mr. HARROW, Cambridge Botanic Garden, says—"It is only in very large glass structures that the large growing species of this genus can be accommodated, and this is one that requires a good deal of room to develop its foliage which, when this is effected, gives the plant a handsome appearance. Both margins of the leaves are set with numerous sharp reddish-brown spines, as is also the keel, and here some spines point towards the apex while others are reversed, as if to make the plant extra secure against invasion. Your correspondent, 'W. W.', p. 631, mentions, that 'It is only rarely that cultivated species of *Pandanus* flower.' A female specimen, some 10 feet or more in height, planted out in a cool stove here, has flowered twice during the past three years. There is nothing remarkably handsome in these huge, ponderous, cone-like inflorescences. Previous to its last time of flowering, a cone was allowed to remain on the plant, which, when ripe, scented the whole house with a very powerful perfume resembling that of Pine-apple and Melons, quite a mixture, but the flavour was rather inferior, and not to be compared to its odour."

SEASIDE SHRUBS.—For a genuine evergreen with silver and golden varieties (the variegation being either temporary or permanent), commend us to the Japan Spindle tree, *Euonymus japonicus*; but if variety be needed, *Ligustrum ovalifolium* may be introduced. It is all but evergreen, and bears the sea blast with impunity. Tamarisks and Austrian Pines do thoroughly well on the Kentish coast, but the Pinaster cannot be recommended, its gaunt, straggling branches being suggestive of nightmare or other horrors rather than of shelter or elegance such as one looks for in a tree. *Cupressus macrocarpa* and *Pinus insignis* are quite at home in some seaside places, and *Ribes alpinum* is in such a hurry to set up business that its buds are already half open.

FLORAL DESIGN.—Some of our earliest attempts at handwriting, if it may be so called, were made with the aid of Mustard and Cress duly sown in the forms of letters. We were reminded of this the other day by seeing the name of a hotel at one of the south coast towns picked out with alpine Auriculas. In this mild season most of the Auriculas were in bloom, so that the floral caligraph was every bit as distinct as it would usually be in spring; and, indeed, much more so than it is likely to be next spring.

ROYAL SOCIETY MEDALLISTS.—At the anniversary meeting of the Royal Society, held at Burlington House on St. Andrew's Day, the Medals awarded by the Council were, according to custom, formally presented after the delivery of the presidential address. The Copley Medal, the most ancient of the Society (dating from 1736) was given to Professor HUXLEY; the Rumford (which dates from 1880) to Professor TACCHINI; and of the two Royal Medals (first founded in 1826 by GEORGE IV., and continued by each succeeding sovereign), one was given to Professor OSBORNE REYNOLDS, and the other to Baron VON MÜLLER, as was mentioned by us in our issue for November 24; while the Davy Medal (originated in 1877) was given to Mr. W. CROOKES.

ENGLISH APPLE AND FRUIT GROWING CO.—We are requested by Mr. A. F. BARRON to state that he is not, as advertised, a director of this company, his position in that respect having terminated some time ago, other duties requiring all his attention.

CARTER'S PROVIDENT SICK FUND.—The third annual meeting was held recently in the warehouses of the firm at High Holborn, Mr. C. H. SHARMAN in the chair. The number of subscribers during the year had been 289—making a total of 449, there was no case of death to be recorded; but fifty-three

members had become chargeable to the funds, by reason of sickness, and the payments on that head were in excess of the previous year. Nevertheless, a further sum of £25 could be carried to the reserve fund, £10 to the Hospital Saturday Fund, and a bonus distributed to the members at Christmas which will amount to rather more than half the year's subscription, and a working balance would still be held in hand. The executive officers were all re-elected.

PULQUE.—This product of the young flower-spike of *Agave americana* is such an important article of consumption in Mexico that it forms the principal item in the goods traffic of the Mexican Railway Company, the report of the company showing that in the half year ending December 31, 1887, they carried no less than 41,607 tons, which brought in for freight as much as £35,376.

ROSES.

ROSES FOR WALLS AND FENCES.

BESIDES the Noisettes of the Gloire de Dijon type which I have already enumerated there are others of a different character, which will be found very suitable for these purposes; it is well for those who are able, to give them the benefit of a wall, but a substitute for it may be found. I have a letter before me from a friend in Ireland who says that he has erected a wooden wall about 14 feet high, has painted it a terra-cotta colour, and placed wire along it; on this wire he has trained fruit trees, which are doing well, and look very handsome. There is no reason whatever why the same should not be done for the purpose of growing Roses; it will last, if well attended to, for a great number of years, and of course the comparative cheapness with which it can be done is much in its favour. As the place where my friend has raised his wall is in the wind-swept county of Clare, there is evidently stability as well as cheapness about it, and lovers of Roses may be tempted to imitate the example.

The Roses already mentioned are nearly all yellow, but there are amongst the Noisettes, Roses of other shades of colour which are very effective. There is *Aimée Vibert*, a very old Rose—indeed, one of the oldest we have in cultivation; it was sent out by Vibert in 1827. It is said by Ketten in their catalogue to have been a sport of the Noisette "Repens;" it is pure white, sufficiently full, very free flowering, and blooms in clusters. This is also another white well known to many.

Lamarque.—This was raised in 1830; it has a slight saffron tinge in the centre, which has no doubt been the origin of the yellow sport sent out by Ducher in 1869 under the name of *Lamarque Jaime*, like the type, but with bright yellow flowers. As a white climbing Rose, *Lamarque* has long been valued.

Fellenberg is a light crimson Noisette, very bright and effective, blooming in clusters.

Narcisse is a Rose which I have seen in some situations, notably at a friend's house near Maidstone, as a capital Rose for covering a wall; the plant I allude to was always full of flower, and I have seen some exhibition blooms cut from it.

Solfaterre.—Sulphur-yellow, of long straggling bare habit, the flowers very light, but very apt soon to open too much and show the eye. There is a fine plant of it on a house close to me, facing the south, which always blooms freely; it suffered in the severe winter a few years ago, but has made a fresh start and is now doing well.

Ophir.—A light nankeen copper-yellow, very distinct and full.

Rêve d'Or.—I have already mentioned this, but it is impossible to give a list of climbing Roses without again referring to it; my plant is on the east side of my house, but withal it flowers most freely, and is a delight when in full flower; the foliage, too, is close, and almost evergreen. Nor would the list be complete without naming

William Allen Richardson—for although not

actually a climbing Rose, its growth is so vigorous, and its flowers or buds so charming that it is impossible to pass it by. Who has not admired the deep orange buds (for as an expanded flower it is worth little), and how many fair dames have rejoiced in it as forming such "loves of blooms" for a breast or shoulder bouquet? Sometimes it loses its colour on a wall in hot weather, and is perhaps more suitable for a pillar.

Amongst Tea Roses, as distinguished from Noisettes, it is somewhat remarkable that there has not been a greater starting off into climbing varieties than there has. As far as I am aware there is but one of those in commerce which has developed this rampant habit. You may have strong growers, such as Marie van Houtte, Catherine Mermet, and others which will soon cover a space on a wall or fence, but they are not climbers.

Climbing Devoniensis is the only one as yet in commerce, and is one of the most remarkable instances of divergence from the type that can be seen. *Devoniensis* itself is a moderate grower, but here is a Rose which has no one knows how (although we do know where) is, in Mr. Pavitt's garden in Bath, developed into the most rampant climber, sending out shoots 15 to 20 feet long in a season, and retaining the beautiful flower of its type.

I have said that there is only one in commerce, but I hope that shortly we shall have another:—

Climbing Niphetos.—This was exhibited by Messrs. Keynes, Williams & Co., at one of the Royal Horticultural Society's meetings, and was awarded a First-class Certificate, and deservedly so. It retains the character of the type as far as bloom is concerned, and we know that there is no such popular Rose, even surpassing Maréchal Niel, as it comes in so usefully for wreaths for either weddings or funerals, and I am informed that shoots from plants worked in May have attained the length of 15 feet. How beautiful it will be climbing up the rafters of a Tea-house!

Passing on to hybrid perpetuals, of these there are a few which are distinct Roses, and others which are only rampant sports of previous varieties, thus amongst the former we have:—

Princess Louise Victoria, raised by Mr. Knight of Battle, who, like Mr. Ward, the raiser of John Hopper, must rest his reputation as a raiser on one Rose. It was sent out a good many years ago, and is a very strong grower, of a light pink or rosy-flesh colour, and of good form; it does not attain exhibition size, but if allowed to grow it will furnish a large number of particularly fresh and light blooms, which I saw excellently employed in one of the prettiest baskets of Roses I ever saw exhibited at Eltham by Miss Bloxam last July—baskets of Roses are generally "lumpy," but this was light and graceful.

Longworth Rambler has been in some catalogues put down amongst the hybrid Teas, but that really means hybrid perpetuals, and is a very free-flowering deep crimson Rose; the foliage is very ample and completely covers the wall—its growth is rapid and it blooms freely in the autumn. Another is:—

Reine Marie Henriette, a deep carmine, but a flower that soon fades off into dull magenta; it has a long pointed bud, and is very pretty before it opens fully.

Of the new series of Hungarian Roses I know nothing; they are said to be hardy, but they all have the character of lilac-purple attached to them, and we know what that means. Amongst the sports which have arisen in the hybrid perpetuals—sports in growth, not in bloom—may be mentioned climbing Charles Lefebvre, climbing Captain Christy, climbing Pride of Waltham, climbing Jules Margottin, climbing Bessie Johnston, climbing Edouard Morren, climbing Countess of Oxford, and climbing Mdlle. Eugene Verdier; as I have said, the blooms of these partake of the character of the types.

It will thus be seen that there is a great variety of climbing Roses to choose from. I have not mentioned the summer-flowering, such as the Ayrshire and Prairie Roses, or the species of single-flowering Roses, many of which are very beautiful, but rather fleeting in their character, *Wild Rose*.

PHILLYREA DECORA.*

THE genus *Phillyrea* belongs to the Olive family, and is a near ally of *Osmanthus*. It contains four species, all of which are in cultivation. The three Mediterranean plants, viz., *P. latifolia*, *P. angustifolia*, and *P. media*, although distinct enough in their typical states, are united by so many intermediates, that Caruel and Timbal have merged them under one species, with the respective names of *P. vulgaris*, Caruel, and *P. variabilis*, Timbal. By far the best plant of the whole lot—and a considerable number of forms have received distinctive names—is the one figured (fig 96). It is a strikingly handsome shrub, of whose claims to specific rank there can be no doubt. It is also much the hardiest, having stood many years at Kew without ever being in the slightest degree injured by frost, though more than once within the last fifteen years the other three have been badly cut during severe winters. Another point in favour of *P. decora* is the fact that it is an excellent town shrub, its rigid glossy leaves seeming quite at home in the smoky dust-laden atmosphere of London.

From its general aspect the subject of the present notes might be mistaken by a casual observer for a fine form of the Portugal Laurel, the dark green leaves varying from 2½ to 4½ inches in length by a width of 1 or 1½ inch. The pure white flowers, fully double the size of those of *P. latifolia*, are borne in May in clusters in the axils of the leaves, and the reddish-purple fruits ripen in September. According to its discoverer it attains a height of 10 feet. The figure in the *Botanical Magazine* was prepared from specimens which flowered in 1883 in the nursery of Mr. Anthony Waterer, at Knap Hill, and the fruiting twig here represented was taken a month ago from a plant in the Kew Arboretum.

Fruits, no doubt collected in 1866 by Balansa—the discoverer of the species—in the native habitat of plant, viz., Lazistan (the Pontus of the ancients) on the south-east shore of the Black Sea, were offered at 15 francs per hundred in the Supplement to the Catalogue of Messrs. Vilmorin-Andrieux & Co. for 1867. The description there given is a good one, and antedates by some dozen years that under another name in Boissier's *Flora Orientalis*. Besides, the plant being as frequently met with under the name of *P. decora* as under *P. Vilmoriniana*, we have another reason for following the laws of botanical nomenclature and accepting the older name. *Geo. Nicholson*.

CHRYSANTHEMUM CULTURE.

THE following papers were read at the Chrysanthemum Conference held at Sheffield on Friday, November 16. We append an abstract of the more practical extracts of Mr. Tunnington's "A Chat about Chrysanthemums."

THE BEST TIME TO STRIKE CUTTINGS.

This is a point on which a variety of opinions exist. My experience has led me to divide the plants into two sections, and to treat them differently. In this matter I have found that Japanese require a longer season of growth than the incurved section, except a few varieties, such as Barbara, Eve, Mabel Ward, &c., which should be rooted with the Japanese; those we strike in December, and the incurved by the end of January or any time during February. I have always succeeded in obtaining better flowers with broader florets by late than early striking. This applies especially to the Empress and Queen group. All the growers about Liverpool do not strike their cuttings on the same principle. Some insert them in cold frames, some place them thickly together in pots and place them on a shelf, and are not particular about flagging, and so on. I make up a slight hot-bed in a vinery about to be started, with leaves and

* *Phillyrea decora*, Boiss. et Bal., in Vilmorin-Andrieux et Cie., Supplement aux catalogues, ou liste des plantes qui paraissent pour la première fois sur nos catalogues (1867). *P. Vilmoriniana*, Boiss., *Flora Orientalis*, vol. iv., p. 37, (1879); *Botanical Magazine*, 6800. *P. Vilmorinensis*, *Gardeners' Chronicle*, ser. ii., vol. xx., p. 494. *P. laurifolia*, Hort.

a small quantity of manure. Particular care is taken that the heat is only of the gentlest description, in order to prevent the cuttings from flagging, and at the same time assist them to root in less than half the time than would be the case by cool treatment. Weak growers are rooted singly in small pots, and also those intended for trained specimens. Others are rooted together in 5 or 6-inch pots. By the time the plants are rooted hotbeds are made for them in cold frames of the same description as for rooting them; they are potted singly and plunged. They become established by the time the beds cool down, which avoids checking the young plants. Weak plants, as well as those for trained standards, are potted on and encouraged by a little bottom-heat. Under this treatment they gain strength and make rapid progress. The object to be attained is strong but sturdy growth from the time the plants are hardened to cool-frame treatment to the time they are placed out in May. This is achieved by giving abundance of air and the removal of the lights as the season advances, when the weather is favourable. The weather must guide the cultivator whether he is to place the plants outside early in May or towards the end of that month. A sheltered spot should be found for them, or a temporary protection should be given to them in the case of late frosts or cold cutting winds. Every care, however, must be taken of them at this stage, for they are easily injured. I have seen the leaves blown off them, and plants subjected to such cruel treatment seldom recover.

POTTING.

Before potting is commenced we place in the position the plants are intended to occupy, old boards, 1 yard apart, on which we stand the plants, pot to pot, until July, when they are placed 6–9 inches apart, according to the number of shoots that the plants are allowed to carry. The plants are placed in their flowering-pots during May as they are turned outside. We have found 9 and 10-inch pots most suitable, and if larger are used two plants may be placed in them with good results. In draining the pots oyster shells are preferred to crocks, whole ones at the base, and for the top they are broken up moderately fine. Over this a good pinch of soot is scattered to keep out worms and act as a stimulant to the plant. In potting, the soil that I shall recommend should be pressed firmly into the pots. When potting is finished room should be left in the pot for the addition of at least 2 inches of soil. We use turf green from the field chopped about the size of an egg. To this is added one 8-inch potful of soot, the same quantity of pounded oyster shells, the same quantity of bone-meal, and a small quantity of leaf-mould to each barrowful of soil.

THE MAY BUD.

There appears to be a good deal of misconception about the May bud. In my opinion it is the result of a check or early striking, and I scarcely remember an example of this when the old stools have been cared for and the plants struck at the time suggested. My advice is, avoid this bud. In nine cases out of ten it throws the bud that should appear from the middle of July wrong. If the plants show this tendency help them out of it as quickly as possible by removing the points of the plants, and select three or four shoots to carry one bloom each. In the case of doubtful kinds that occasionally go blind stop them in May and run up five or six shoots, and when you have secured the right-time buds and observe them swelling, thin out the shoots to three or four. If we do not stop them we always run up more shoots than we intend to retain—that is, from the natural break in July. We stop some and grow others without, and then seldom fail to secure a good flower at the time it is wanted.

FEEDING.

We feed very little before the bud is secured. What we are in the habit of using is liquid from the farmyard diluted with water and, a little soot dusted on the surface of the soil during showery weather.

A few years ago we had in the garden a cesspool, the contents of which, liberally diluted with water, I found an invaluable food for the *Chrysanthemum*. To those who have not used it my advice is give it a trial. At one time we had practically only natural liquids, but nowadays we can make liquid from such a variety of special manures, or dust them on the surface of the soil, and most if not all of them are useful for a change.

TAKING THE BUD.

I have said I am a little later than most growers in securing buds. For the incurved I do not care to take them before the last week in August, or the first three weeks in September, though some of the Japanese might be taken earlier. The aim of the cultivator should be to secure them during the latter

vator has a slightly different method, and all plans answer the purpose, as long as the plants are not broken, and each shoot is secured separately, so that light and air can reach them on all sides. One other matter of importance is, that we allow all the shoots of our plants to sway loose 18 inches above the tie, which saves many points from breaking. Some say birds will break the shoots if they alight upon them, but in over twenty years I have observed a solitary robin on these plants, and the shoot it rested on did not break. Damage is mostly caused by wind and rain, when the plants are tied too near the top.

RIPENING THE WOOD.

I do not attach much importance to this; all that I have ever found to be necessary is to stand the plants sufficiently far apart so that light and air can

the limit of the pot by placing pieces of turf above the rim. The soil when the flowers are expanding should be full of active roots. This keeps the lower foliage in a healthy condition to the last. Here lies the secret of large flowers possessing depth, solidity, and breadth of petal.

AFTER HOUSING.

Now begins one of the most critical periods in the plant's life, and many plants go wrong from the day they are housed. Many a young grower has had all that could be desired in the way of plants, and evil results have followed a continuation of the treatment the plants received outside. The same strong feeding must not be continued for a time. The plants sulk after losing what they delight in—namely, night dews. If bright weather continues, consider-

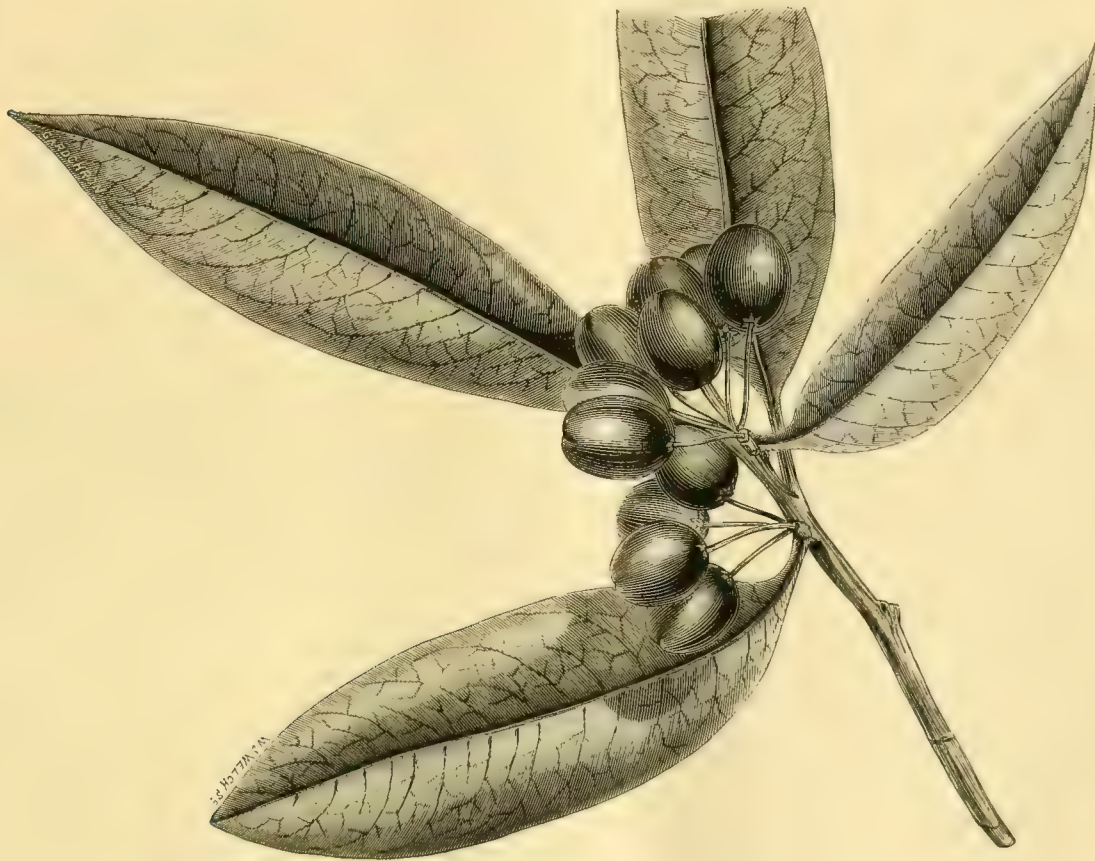


FIG. 96.—*PHILLYREA DECORA*: FLOWERS WHITE, FRUIT REDDISH-PURPLE. (SEE P. 672.)

date. When plants have been pinched in their earlier stages some of the shoots will show before others, although on the same plant. This can be regulated to a very large extent in July; for instance, if they show early in that month allow them to grow on until the middle of that month. They must then be pushed to make the next growth by clearing out lateral growths from the axils of the leaves. At this stage examine the remaining shoots on the plant, and if small growths have commenced showing in the axils of the leaves rest assured that a bud is forming. My plan is to clear out all growths as in the preceding case, take out the point of the plant, and do for it what it would otherwise do for itself. But if left alone it would come in too late to be of service for showing.

STAKING AND TYING.

This may be passed over, for nearly every culti-

play all round them. The ripening of the wood depends largely upon the time the bud is taken. Ripening commences rapidly after bud-formation and the leaves below it have fully expanded. If the buds are taken too early in August the wood in some seasons ripens too much, and the result is a flat flower and a multitude of narrow petals. Over-ripened wood is, in my opinion, the cause of smaller flowers in the South, and narrower petals than we are in the habit of producing.

TOP-DRESSING.

I advised room in the pots for 2 inches of soil, and this space is to be filled up with rich material as a top-dressing for the plants. This is an important matter. It keeps the roots in full activity, and they are therefore capable of taking up food much more freely than they could possibly do if the roots became sluggish. We top-dress to the extent of exceeding

ably more moisture is evaporated from the foliage, and any failure in making up for these deficiencies will prove detrimental to the plants. Syringe them thoroughly two or three times a day, according to the weather. When they are accustomed to their new quarters we feed again on the same principle as before housing, and continue to do so until the flowers are ready for cutting. We fumigate with tobacco-smoke after housing, for neither plants nor flowers will thrive if fly exist upon them.

I shall pass over the subject of dressing, for enough has been written about it,—in fact, sufficient to frighten a beginner. My advice is, grow the flower fully out, as, however good the dresser may be, he cannot make a good bloom out of a bad one.

KEEPING THE BLOOMS.

After they are expanded, put them into a dark outhouse as dry as possible. Once I had occasion

to place some plants in a certain shed, and there was some lime in a corner that was just falling. This I had always thought assisted in keeping them by absorbing the moisture in the atmosphere. The flowers kept three weeks, and were staged in good condition afterwards. I give this for what it is worth, and think it well worth trying. My last advice is, beware of fogs if real success is to be attained, for in one night they will undo the work of the whole season.

INFLUENCE OF WOOD RIPENING ON BUDS AND BLOOMS.*

THE ripening of the wood of *Chrysanthemums* is a very important matter in the growth of these plants for the production of high-class blooms; indeed, without perfectly ripened wood it is impossible to have blooms of the finest quality in all respects. Let it be understood that what I mean by perfectly ripened wood is wood that is ripened sufficiently by natural means as the result of correct treatment throughout. Sun is essential for the maturation of plants in all stages of their growth; but in some seasons and districts there may be too much of it, and in others not enough, and we must make the best of both circumstances. Wood-ripening does not consist in merely hardening the wood, but storing it with nutriment for the blooms. Forcing the ripening, so to say, by drought or in other ways, contracts the sap vessels unduly, impeding the free flow of nourishment for the blooms at a critical time, and those persons who practise such methods in cultivation act erroneously, and fail to produce the best blooms.

Seasons vary so much that the locality in which growers reside is a very important factor in the production of good or bad blooms. Circumstances occur over which cultivators have no control, which prevent them showing the ability they may be admitted to possess. They cannot, for instance, excel during a cold wet summer in a low damp district. The higher and drier the locality the harder the wood and the greater the disposition of the plants to set buds prematurely. Where buds are persistently formed long before the time we wish to see them much valuable time is lost in the growth of the plants in their various stages during the time the buds are forming. Moreover, high and dry localities predispose to narrow petals, and rather small but solid blooms; while reverse conditions are conducive to the formation of broader petals and larger blooms. Where the locality is high the air, although much rain may be registered, is drier than in the lowlands, and it is this dry air that precipitates bud formation that gives so much trouble to some growers. The proper time to "take" buds of some varieties is upset altogether under such conditions. They form either too early or too late for producing the finest blooms.

Then the question of dew is important. During a hot and dry summer, as in 1887, the absence of dews in high-lying districts is much felt. Dew invigorates, and its scarcity or absence has been the cause of many small blooms. We can regulate and control moisture in the soil, but have practically no power over it in the atmosphere. We may do our best, and may do some good, but, after all, the most we can do is but little in providing compensation for what we may consider the shortcomings of Nature.

When the growth of plants is soft and gross, the latter particularly, and the wood pale green instead of brown in colour, a want of ripeness is evident. Such plants produce blooms large in diameter, but they are usually lacking in depth and solidity of the petals. This is more noticeable in the incurved section than in the Japanese family. Blooms which are composed of extra broad florets are seldom if ever as solid as medium-sized blooms, having narrower petals; neither can the former be considered of such high quality as those deeper in build

and consequently firm and likely to stand fresh a long time. Blooms having unusually broad florets often show decided roughness and irregularity, and the dresser is not able to present such blooms in the same highly finished condition as when the petals are narrower and the blooms more solid.

The present season is considered to have been a bad one for the growth of large high-class blooms, especially in the incurved section. This is borne out by examples which have been staged at various exhibitions. It cannot be said they have been of the highest quality, or as they have been shown in some past seasons. Some stands have been extra heavy in the size of the blooms, owing to the immense breadth of their florets, but many of the blooms lacked depth in proportion to diameter, consequently, they were not so solid as they would have been had the blooms been deeper in proportion to their breadth. After a summer like the past one, we expect to see large blooms which lack solidity and closeness of the petals, a condition which is owing mainly to the unripened state of the wood. I am not in favour of extra large blooms of the incurved section, which are only large in one way—diameter, for the reasons stated—they lack depth and solidity. My idea of an incurved bloom is one not great in diameter alone, but deep and firm in build, consequently of a better shape. Such blooms are never seen with extra broad petals, but they carry what is known as a good "shoulder," being more Orange-shaped. Such blooms as I have described are the result of perfectly ripened wood, and are seldom met with after a season like the past. Where prizes are offered for the premier incurved bloom in a show, this honour generally falls to a specimen of the character indicated, and not to a flower which has merely two points in its favour—extra width of bloom and broadness of florets. Blooms which are generally chosen for this honour are usually remarkable for solidity and high finish, which two latter qualities cannot be obtained from blooms which have extra broad and thin florets. The ripened character of the wood is the all-important factor in the production of blooms of the highest possible standard of excellence, and the complete maturation we seek is obtained, as far as seasons allow, by careful treatment from the beginning.

CULTURE.

The method of culture I advise as the most likely to obtain the desired end is that of growing the plants from the first stage on to the culminating point in a regular steady manner, not by starts and stops, such as applying water regularly for a time, then neglecting the plants for a few days. Regular attention to potting is important, or before they become so root-bound many roots must be broken in the process, causing a check to the steady progressive growth that is so desirable in plants for producing the finest blooms. Crowding the plants in their younger stages of growth is most hurtful, and antagonistic to the development of vigorous wood and foliage. Sufficient space should always be allowed the plants. When in their summer quarters they should be arranged in an open position where the sun can shine directly on them, but the position should be protected from north, east, and south-westerly winds, which are often so destructive early in the season when the plants are first placed out of doors. Many plants have been so injured by a loss of their lower leaves during May, that they have never recovered the desired strength. South-westerly winds, which are prevalent during the end of August and the early part of September, often do much damage to the buds and leaves where the plants are much exposed. The flower-buds and their peduncles are at that time so tender that the skin may be much injured by being whipped about, so to speak, that a check occurs to the development of the blooms owing to the tissues being broken, thus checking the full and regular flow of sap.

Some growers set too much store on plants with extra thick stems and gross green leaves. These

are, perhaps, pleasant to look upon during the summer by the uninitiated, but when the test of good culture comes to be looked for, blooms possessing the desirable characteristics are generally missing. Very exuberant plants produce blooms devoid of solidity and other essentials as a rule.

It is possible in some seasons to have the plants ripened too much in dry localities. The summer of 1887 was a most trying one to contend with in high and dry districts, where not a drop of rain fell for eleven weeks, and scarcely any dew during a greater part of that time. The remedy in this case is to shade the pots from the sun during the hottest parts of the day, by boards set on edge in front of them, by Fern, cocoa-nut fibre, or mats. Thus the roots may be kept in a cooler state than they otherwise would be with the sun shining directly on the pots most of the day. In the absence of shade to the pots the roots on the sunny side are almost sure to be killed, and we all know what that means. Plants in low-lying districts invariably produce the broadest florets, and the largest but not the best wearing blooms. The advantage of those which are more solid in character is often exemplified when the two kinds have stood two days at a show and borne the heat of crowded rooms. Those which are firm remain so longer than those which are more or less loose. These latter quickly show an "eye," which proves their weakness and non-sustaining form.

Flower-buds are generally produced upon plants at a more regular time in the various stages of growth when the plants are steadily, hence properly, ripened than when they are not, except in very high and dry localities, where they ripen their growth too early, causing premature bud formation; this must be counteracted as much as possible, though it cannot always be prevented. Growers in the extreme southern counties often experience too early bud formation, caused by a too early ripening of the wood which their northern brethren are strangers to. This generally occurs with the whole of the Queen group. The plants forming flower-buds at times between the end of March and the same time in April, causing a serious interruption in their future growth, and preventing the formation of buds at the time most desirable for the district in which the grower resides.

VEGETABLES.

THE past season, although it has been anything but favourable for fruit, has been one of the best that gardeners have experienced for many years past, for during the whole of the summer months the supply of all kinds, save Tomatos, was most abundant, and had it not been for the early October frosts, Scarlet Runners, Beans, and Peas, would have continued in full bearing to a very late period, and it was rather distressing to see rows of these, so full of blossom and pods, cut off in a night; but we have reason to rejoice over that that was left, for have we not Veitch's Autumn Giant Cauliflower, Brussels Sprouts, Broccoli, and Spring Cabbage, in fine order; Celery, Spinach, Endive, and Lettuce, all looking at their best, and consequently, with a favourable winter, the promise of a full supply for some time to come. The one great danger with Cabbages is, that after the spell of warm weather we have had they may become too "proud," and run, as the growth has been very rapid, and, that being so, it will be advisable to save all plants now standing on the seed-beds, and prick them out at once, if not already done, as the check from removal will be of great benefit to them, and they will lift with good balls for transplanting in spring.

Young Cauliflowers, too, excepting those sown late, are also too vigorous, and are almost sure to bolt, but gardeners now do not place so much dependence on autumn raised plants that they once did, as we now have not only earlier kinds, which, when sown in spring, come in quickly, but we have much later Broccoli, and between the two the space

* A paper read at the Chrysanthemum Conference by Mr. E. Molyneux, Stanmore Park Gardens, Bishops Waltham.

is bridged over, and we have either the one or the other to cut. However, I like to save some plants through the winter, and not having a large stock of handlights to spare in which to plant, I generally have a few hundred potted, as one can never make sure of them standing when pricked out under walls, or in frames, and if they do, they do not transplant half so well when turned out in the spring—and the potting takes up but a very short time.

The way we manage is to use 60-sized pots, in which we drop a good pinch of half-rotten leaves over the hole, and then finish the potting with light rich soil, after which they are plunged or stood in a cold frame near the glass, and there get plenty of air, by tilting the lights at the back, both day and night, unless the weather is very severe. By treating them thus, the plants are kept sturdy and strong, and from having no coddling, or check in turning them out, there is not that tendency to "bolt" which is so usual with others pricked out. As to Celery, I never like earthing it up till it has completed its growth, for the double reason that it cannot well be watered afterwards, and the soiling, therefore, checks growth; but what we do—and it is of great advantage and benefit to the plants when the earthing comes on—is to tie them round with a piece of Raffia, or strong matting, which keeps the leaf-stalks upright and close together, and the soiling can after that, go on at a rapid rate, as all that the man, carrying out the work, has to do, is to chop down and push forward the earth with the spade. This season has quite shown the advantage of this system, as during October we had little or no rainfall, and Celery stood in need of water as much, or perhaps more, than at any period since it was planted out, and the growth of late has been rapid. The earthing-up with us is now nearly completed, and as we grow nearly all the Incomparable or Sandringham Dwarf White, there is not much top for the frost to act on, and what there is will by-and-by be covered with Bracken, or long straw. Endive soon suffers from frost, and is much more tender than Lettuce; but any one having dry sheds, either light or dark, may safely winter a good deal of this salad, or a lot may be laid in, and stored in spare pits or frames. Parsnips are best either left in the ground where they are, or dug and laid closely in rows. J. S.

VEITCH'S LITTLE GEM LETTUCE.

The seed of this Lettuce was obtained last January, and were sown soon afterwards, and by June 21 we had White Heart Lettuce very compact and firm. The same variety was grown all through the summer, and we have plenty of splendid stuff now. As there are so many different varieties of Lettuces, care should be taken to get this one true to name. R. C. T.

FOREIGN CORRESPONDENCE.

ÆSCULUS TURBINATA.


As I do not take in the *Revue Horticole* (see *Gardeners' Chronicle*, Nov. 24, 1888, p. 608), nor know where to look for it, may I ask you:—

1. Is it the Sapindaceæ given in *Phonzo Zon Fon* (Kew Library), fasc. 62, fig. 17, or something akin to *Æsculus indica*, *Bot. Mag.*, 85, fig. 5117, which is very much like the Horse Chestnut I saw in blossom in Japan (probably the *Æ. sinensis*, which has not yet flowered with me)?

2. Does the *Revue Horticole* say where it can be got at for love or money? J. Van Volxem.

[Mr. N. E. Brown, Kew, to whom we forwarded the above note, in his reply, says:—"It was some time before I could find out which of the Japanese books was meant, as we do not understand Japanese, and our books are not labelled in English; but having now compared the figures indicated, I see no reason why they may not represent the same species. The *Revue Horticole* only states that the plant figured came from the Segrez Arboretum." Ed.]

HOME CORRESPONDENCE.

 Correspondents will greatly oblige by sending early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

Photographs or drawings of gardens, or of remarkable plants, trees, &c., are also solicited.

PEARS.—I should like to add my word of commendation to those of Mr. Rust, of Eridge, on p. 608, as to the good properties of Pitmaston Duchess. I crown-grafted it on to a rather wild-growing twenty or thirty year old Maréchal de la Cour bush three years ago, and this season I gathered at least a peck—nearer a peck and a-half—of good medium-sized fruit from it. To my surprise and gratification, they ripened so slowly that I was able to use every fruit. I expected that it would go sleepy, but was agreeably convinced to the contrary. The fruit, for the season, was good, as no fruit, inside or outside, has been up to even its average quality in the year 1888. I am now putting it by degrees on to a fifty to sixty year old Crassane Pear tree, which, try as I will, I cannot get to fruit. It is the largest Pear tree, surely, in existence. I shall be glad to get the Duchess all over it. I am glad to hear the true history of this Pear, as many growers believe it to be a sort of sport of Duchesse d'Angoulême. Mr. Rust's note on its origin sets the matter right. Whilst on the subject of Pears, and the limitation of varieties to grow, it appears to me, that the requirements of the family for whom the gardener has to provide, as to quantity required, and the fertility of Pears in the neighbourhood must settle very largely the question of varieties a gardener grows. For instance, our consumption here goes somewhat on these lines. We begin our season in August with Doyenné d'Été, and Green Chisels—both orchard grown. By the time these are done, and they do not keep very long as everybody knows, Jargonelles are in; then Clapp's Favourite, and Windsors, followed by Williams' Bon Chrétien, and Beurré d'Amanlis. After these come Louise Bonne de Jersey, Fondante de Charneux, a great favourite here, then Marie Louise, Pitmaston Duchess, Beurré Diel, Brown Beurre, Autumn Nelis, Welbeck Bergamot. I say nothing for Beurré de Capiaumont and Hessels: I always market these kinds. Beurré d'Aremberg, Doyenné Gris, Maréchal de la Cour, Beurré d'Anjou, (eating now in prime condition), Winter Nelis, Easter Beurré, Josephine de Malines, Bergamotte d'Espéren, with Ne Plus Meuris, and Beurré Sterckmanns; these fill up the Pear season well. In addition to these twenty-five varieties we have added lately Beurré superfin, Fondante d'Automne, Beurré Hardy, Emile de Heyste, Doyenné du Comice, D. Boussoch, Souvenir de Congrès, Marie Louise d'Uccle (thirty-three varieties), in order that the house supply may not in anywise be interrupted; and to these we must put the stewing Pears, Catillac, Verulam, Triomphe de Jodoigne, Vicar of Winkfield (some seasons this is fit for table—last year, for instance), and Beurré Brettineau, thirty-eight varieties, which we count upon year by year to keep our establishment supplied. It may be urged that it would be wiser to grow more of certain safe cropping varieties, but I do not see that, for the very simple reason of the short keeping qualities of Pears. To be "ripe at 12 o'clock and rotten at 1" is unfortunately too true of too many varieties, and this season this habit has been annoying in the last degree. Mr. Wildsmith, in his paper at the recent Conference at Chiswick, gave a best twelve varieties of Pears, but said, and very wisely said, he should not like to be expected to keep a table supplied with less than twenty-five varieties. He gives his twenty-five, and a most useful twenty-five they are. To sum up; the question of number of varieties must depend on household consumption and the fertility of Pears in each particular neighbourhood. Lists of varieties are useful as showing which do well in the majority of instances. I have mentioned none but what do well with us here in Notts. N. H. P.

— I should not have ventured to express my views upon this very important subject were I not well acquainted with the difficulty of keeping up a regular supply of Pears throughout the Pear season; and as I have repeatedly proved that we cannot place sufficient dependence in any one variety cropping annually, I consider that twelve or fifteen sorts are not enough, and that twenty-four are

none too many, and further, I think it would be very unwise of any gardener who attempts to follow that course. I am in possession of all the varieties enumerated by your correspondent, Mr. Sheppard, at p. 535; and although I fully agree that his list contains the cream of varieties of Pears, I can assure him that with us, and growing under precisely the same circumstances, they all do not crop alike, and that while one Pear bears satisfactorily one season, it not unfrequently misses another. Taking, for instance, this season, Marie Louise, Beurré d'Aremberg, Louise Bonne de Jersey, and Pitmaston Duchess have borne splendid crops of fruit; while on the same wall Glou Morceau, Doyenné du Comice, Winter Nelis, and several other good varieties have nearly failed to crop; consequently I have been obliged to use Pears which, I may say, for the past two or three years I could very well have managed without. Emile d'Heyste was fit for use just after Marie Louise was over, and has done us capital service, as also have Huysh's Victoria. Beurré d'Aremberg we shall find very useful in place of Glou Morceau, and they will keep good till Passe Colmar and Josephine de Malines are fit for use, which completes our list for this year. Beurré Rance with us is never fit for the table, being coarse, green and watery. The following is a list of those which find the most favour here, and although in some of them we find a deficiency in honey sweetness, they do not disgrace the dessert:—Doyenné d'Été, very early, sweet and refreshing when gathered from trees; Clapp's Favourite, Jargonelle, William Bon Chrétien—I believe we have two sorts of this, one being of much better colour and flavour, and keeps longer; Madame Treve, a very heavy cropper on espaliers, and becomes fit for use just after Williams'; Triomphe de Vienne, good on standards; Jersey Grattoli, a remarkably certain cropper on espaliers; Fondante d'Automne, Louise Bonne de Jersey, Pitmaston Duchess, Durondeau, Marie Louise, Thompson's, Emile d'Heyste, Beurré Superfin, Doyenné du Comice, Huysh's Victoria, Conseiller de la Cour, Winter Nelis, Glou Morceau, Beurré de Jonghe, Beurré d'Aremberg, Passe Colmar, and Josephine de Malines. H. Markham, Mereworth Castle.

ROYAL HORTICULTURAL SOCIETY.—In connection with your leader of December 1, p. 636, it might help those who are considering the system of floral certificates to state how they are now awarded, and why members are not asked to vote on plants with which they are not familiar. When a beautiful Orchid is exhibited, the award of a certificate often depends on its being sufficiently distinct from others already in cultivation, the judgment in this case mainly rests with the Orchid experts on the committee, as the majority of the other members have not sufficient knowledge of the subject, and, therefore, in many cases do not vote, and, I think, wisely. Many of the Orchid experts act similarly in the case of rare alpine and other hardy plants. Some flowers bring out many voters, Chrysanthemums, for instance, but even here the opinion of the experts as to novelty carries great weight. Alpines, perhaps, have fewest voters, though with them I have never known "a verdict of two or three out of twenty or thirty then present." Friends have asked me if it was right that a single Dahlia should get a First-class Certificate, and that a grand new Orchid, such as *Cattleya exoniensis*, should only get the same award? I have for years suggested that some special distinction should be devised for plants of very exceptional merit; but this has to be done by the Council, not by the committee. At present a First-class Certificate means only that the plant is considered a novelty of great merit, or a very great advance on plants of its class. There is no comparison with plants of other classes, any more than when the same words of praise—What a remarkably fine flower—are given to a *Cattleya* and a *Primrose*. Again, I have been told that too many Certificates have been given at one meeting to Dahlias, and, offhand, this may appear to be correct; but, those on the spot see differently. Once or twice in the season the principal growers make a great effort, and send up the cream of their seedlings, selected from a vast number. As Dahlias are of many colours, red, white, crimson, purple, variegated, &c., each colour stands on its own merits. It sometimes happens that great improvements in colour or form have been made in most of the colours: in this case many certificates are necessarily awarded. As I cannot fall in with many of the suggestions which have been adopted in connection with the Floral Committee, I have given up my seat after this year, but, though freed from responsibility, I need hardly say that I wish to see it as

efficient as possible, and hope that it will keep as free from undue influence as I now believe it to be. *George F. Wilson.*

The very few certificates ordinarily granted by the Fruit Committee of the Royal Horticultural Society, probably save those awards from criticism. Although it is just possible that sometimes vegetables and even fruit may get certificated almost too freely at Chiswick. Such is human nature that we are usually very good-natured in dispensing of that which costs us nothing, and the giving not only pleases, but possibly benefits some one else; hence many certificates are granted out of pure good nature. But it must be admitted that the Floral Committee not only does not err on the side of selfishness, but sometimes seems to have extraordinary outbreaks of good nature, so that certificates fall about "thick as leaves in Valombrosa," hence too many of these same awards obtain much criticism. But the weakest element in the awards is, as you have pointed out, too often found in the fact that they are made by a very small minority of the committee present, and it is obvious that whilst in such cases the granting is a poor compliment to either the object certificated or to the exhibitor. The proposal that such awards should be made only on the authority of a full majority of the committee, seems to offer a very valuable improvement upon the present system, as not only would awards then have tangible worth, but negligent members of the committee would be forced to discharge on one side or the other the duties they have undertaken. That all such awards would be regarded with considerable respect may be taken for granted; but with regard to the proposal to publish the names of the members of the committee voting, I think that would, if sought to be enforced, create a revolt. The present method of voting does not always prove advantageous, as, although fairly private, yet no member can vote without the knowledge of all the others at the table, and possibly a desire to please, or to refrain from displeasing, may lead to votes being given somewhat partially; also it doubtless leads now to that abstention from voting which seems to be so unfortunate. Now, I venture to propose that, if voting be enforced on all the members present at any meeting, and such enforcing will be needful if a full majority of votes alone will carry Certificates, then voting by ballot should be adopted, each member being provided with small pieces of paper or cards, on which shall be printed "for" or "against," which shall be dropped into a box, passed round the table, and, being shaken up, should be turned out on to the table, and be assorted and counted by the chairman. The work would be very easily accomplished, as twenty or so votes could be counted in so many seconds, and the result would be the real opinions of the members as to the merits of the respective exhibits without fear or favour. It is little less than a scandal when a certificate is lost by seven votes against, and six for, when the very next plant perhaps gets a certificate by five votes for, and four against. Compulsory voting would not only keep the members more thoroughly up to their work, but would also check that tendency to break away into gossip, and that upon irrelevant subjects, which a strong chairman should instantly repress, even at the expense of giving offence. It would not only be right to record the number of votes given in each case, but they should also be published, so that both exhibitors and the public might learn how large a proportion of the committee favoured the granting of the certificate. The method of recording votes proposed would, I believe, do very much in the provinces to strengthen confidence in the decisions of the committee. Without doubt certificates are eagerly sought for, not only by the trade, but also by amateur horticulturists, and as the Royal Horticultural Society is just now in great need of help, as well as of confidence, such action in relation to the committee, which would strengthen confidence in them, would also materially assist the Society in its efforts to win the confidence of the horticultural community. The proposal to appoint sub-committees having special knowledge to examine and report when such things as Orchids, florists flowers, hardy plants, Ferns, &c., are sent, is an excellent one; and provided the full committee would, after all, give to their recommendations full consideration if it was thought that the awards were made by small or select bodies of specialists rather than by the whole of the Floral Committee, the result would hardly prove unacceptable. The Council of the Royal Horticultural Society is very conservative in its actions, and hesitates to adopt broad views. Hesitancy kills, whilst

boldness and breadth of view bring life and renewed confidence. A determined plunge, therefore, into a path of healthy publicity might be productive of the most satisfactory results. *Spade.*

I have a rooted aversion to bush-fighting, and I think the Irish way of settling landlords most objectionable; the old English highwayman's "Your money or your life," is far preferable, to my mind, as writing under pseudonyms always savours of cowardice more or less; let me, however, briefly review your correspondent (p. 607). "Over the sea," appears to me very much at sea! The composition of the Floral Committee under his guidance would be a doubtful one. As a rule, the ubiquitous gentlemen, known as "the trade," are fifty to one more alive to the value of a new plant than the amateurs; they know the horticultural world, and can tell almost at a glance the value, or want of value, of any plant placed upon the table, for after all, "the trade" may be selfish in their judgments, but these judgments usually result in the right estimate of value and beauty. Having to cater for the taste of the hour, the trade cannot afford to have fads, and if they award a first-class for a third-class production, they are soon brought to a sense of their error by the fact that the thing will not sell, and after all, money's worth must be the ultimate test of general value and utility. As a rule amateurs are specialists, and specialists are valuable when we do not get too many of them, but the composition of the Floral Committee is a very cosmopolitan one. They are specialists for hardy trees, for Orchids, for Roses, for Ferns, for herbaceous plants generally, and also for particular ones, as per example for Chrysanthemums, and almost every section of the vegetable world; but if we let the amateur element predominate where will the new plants come from? Pray tell me the result (without the trade), to the Begonias, the lovely greenhouse hybrid Rhododendrons, Azaleas, and Roses, or Gladioli, indeed, of every beautiful plant or tree which lends itself to hybridisation? Where would the present race of the most magnificent and useful flowering hardy shrubs in existence—the Rhododendrons—have been without the trade? My position will doubtless be assailed by young England with its exuberant specialism, but my three-quarters of a century experience can stand the onslaught. I next come to "Head Gardener" and agree with him in every particular even to the exhibitor's "selfishness." Just so; who is not selfish? Next comes "L." "Certainly Chiswick; but no Drill Hall." Then, "H." "In the name of common sense don't have shows at Chiswick!" To "H." I will answer, in the name of sound sense go to Chiswick, and if the shows are worth coming to, the people will be sure to come; at all events people will not come to the Drill Hall! With "M." I cordially agree; and now I come to "A Fellow," and I beg to say to him, "You are a very good fellow, indeed, and have put the matter well to the fore." May such good fellows increase, and when the Drill Hall has gone back to its former obscurity and been forgotten, the Royal Horticultural Society may cease to be a laughing stock to its best friends! Just a few lines more: the threats of one or two exhibitors who say that they will not exhibit at Chiswick are worth very little, the loss of these few would be made up by twenty to one for each defaulter, I feel certain, and perhaps the presence of these loud-voiced gentlemen who will condescend to exhibit in London may not be absolutely essential to the stability of the Royal Horticultural Society, at any rate the subject is worth considering. *Charles Noble.*

PROLIFEROUS ORCHIDS.—I saw in two recent *Gardeners' Chronicles* a figure and account of the development of leaf-buds in the inflorescence of *Phalenopsis*. I have just found here a somewhat similar case in a little endemic *Oberonia*, viz., *Oberonia longi-bracteata*, Lindl. It is a small plant with sword-shaped distichous leaves and a raceme of minute orange flowers. In the lowest axils of the inflorescence the flowers (especially when the plant grows upon rocks and the inflorescence nods so as to touch the damp stone) are replaced by axillary buds which reproduce the plant. This is not an unusual or exceptional occurrence, but very common; in fact, almost invariable in damp rocky spots. I have seen whole patches of the plant layering thus. Another little Orchid peculiar to Ceylon behaves in a somewhat similar way, viz., *Podochilus saxatilis*—a little white-flowered Orchid, with stems about 3 inches long, covered with short distichous recurved leaves. The flowers appear in short few flowered racemes in the upper axils, and very frequently if the apex of the stem touches the tree or rock on which the plant grows, roots are emitted from it,

and eventually a stem is formed at this point, and the plant thus reproduces itself by layering. I have no doubt but that similar methods of reproduction occur constantly in damp tropical forests in other and more important species of Orchids. *Henry N. Ridley, Peradeniya, Ceylon.*

BEURRE SUPERIEUR.—Since my notes on the Pears of this season I have had a communication from Mr. Bunyard, who tells me that he is unable to find Beurré superieur in my list of Pears, and he is disposed to think it one of the synonyms of Comte de Lamy. This may be the case. I have grown B. superieur for thirty-five years, and have always found it as I have described it—a Pear of great excellence, but I have not grown Comte de Lamy. *W. Ingram Belvoir, Grantham, Dec. 2.*

WEATHER IN YORKSHIRE.—We have here in the north of Yorkshire, passed one of the worst seasons. Some say the season is unprecedented. So far as my experience goes, I have seen nothing like it in the last forty years. In the spring everything was late, and what fruit escaped the frost was nearly all spoiled by the coldness of a sunless summer, so much so that Apples and Pears were not more than half their usual size. Farmers, too, suffered terribly from the same cause. Turnips and Mangels are only half the weight on the same ground. To add to this calamity, on October 2 we had 14° of frost, with a great quantity of unripe corn standing in the fields. The question now is, Will the unripe frozen corn make seed, or malt? I am trying the experiment now with some such corn for a farmer. Field Beans in many places were frozen to a pulp, and were a dead loss to the grower. Unripe Plums were spoiled on the trees, while the ripe fruit fared better and could be used for tarts, &c., but the flavour was very inferior. Pears and Apples grew very little after the frost, and are certainly the worst I have ever seen here. Beans, Peas, French Beans, and in fact everything tender shared the same fate. In consequence of the early frost the flower garden could be cleared off, and the spring plants planted out early. Since October 2 we have had a warm wave passing over us, so that in the North we are getting quite a St. Martin's summer. Grass and plants in the spring garden are in a fine growing state; Polyanthes by the thousand are in fine bloom, the yellows showing off like a Calceolaria in summer—whites, too, are very conspicuous at this dull season; Pansies are also very gay, in fact every bed is now showing its proper colour; Violets are in good bloom; Peach trees are showing a new growth at the points; late Cauliflowers and Spinach are giving a good supply. *William Culverwell, Thorpe Perrow.*

THE WEATHER IN WALES.—I have sent for your information a list of outdoor plants at present in flower in these gardens. The present mild weather if it continue will soon do damage to vegetation—last night gave a temperature of 50° as the lowest, and a warm rain of 0.37 inch, and it is making many plants begin to move. The stormcock was singing his loudest, and the thrush is in full song, presaging windy and perhaps cold weather—which cannot come too soon. Red Currants are swelling their buds fast; Vicomtesse H. de Thury Strawberry is almost in full bloom, and other varieties are getting forward. The frosts at the end of September and beginning of October ruined all outdoor vegetation which was making up time for the paralysis of the cold wet dripping months of July and August, and the wood in fruit trees, &c., is indifferently matured. *P. Middleton, Wymstey, Dec. 4.* [Our correspondent obligingly sent us names of about eighty different plants of which we note Broad Beans, Peas, Foxgloves, Roses, Scabious, Hydrangeas, Polyanthus, Auriculas, Currants, Ivy, perennial and annual species of Campanula, Nicotiana affinis, Laurustinus, Sunflowers, Cydonia japonica, Phloxes. We reiterate the wish of our correspondent that a seasonable change would soon occur. Ed.]

SOILING DOWN MUSHROOM BEDS.—Mr. Perkins, the gardener at Greenlands, Henley, adopts a very simple and practical way of covering his Mushroom-beds. The beds are made up in the usual way, but instead of putting sifted soil on the surface of the manure he places turves cut fresh from a pasture, and about 2 inches in thickness. All the long unsightly blades of grass, &c., are cut off, then the turf is laid on the bed in the same position as it grew in the field, presenting at once a natural covering and tidy appearance. Another advantage is, the

turf does not become so quickly dry as loose soil, and can be more effectually watered when dry. That the beds do well with this covering there is no doubt, judging from the quality and quantity of Mushrooms to be seen, and Mr. Perkins assures me that the same beds have been in bearing for more than four weeks. I do not see why the same turves should not be used for two or more beds, as the ammonia, &c., from the fresh beds would be absorbed by the turf, and enable it to bring other crops to maturity. *T. F. D., Valentines.*

FLOWERING POTATOS.—The connection between flowering and tuberizing of Potatoes in this country is probably very slight. We have many kinds which flower freely, but very few which fruit. Very many of our finest kinds may, under the influence of bright sunny weather, be seen carrying literally masses of bloom, giving for the moment a charming appearance; but very soon all fall, for the simple reason that all are devoid of pollen. Just a few kinds, and mainly those fast passing into oblivion, will fruit freely, but I have not found relative to other kinds that these free fruiterers have been exceptionally poor tuber producers. If anyone would like to test this matter fully let them obtain tubers of Woodstock Kidney, Radstock Beauty, American Purple Kidney, and in a lesser fruiting degree Reading Russet, and they will have a quartet of the freest fruiterers I have ever met with; on the other hand, I have had Magnum Bonum, Chancellor, Prime Minister, The Dean, and others to bloom with greater apparent profusion than have either of those named above, and yet not produce a single fruit. The why and the wherefore of this remarkable lack of fruitfulness presents a very interesting subject for inquiry. Many a time in attempting to make crosses between varieties I have been baffled by the impossibility, after testing scores of flowers, of obtaining a small grain of pollen. Woodstock Kidney has been such a fecund pollen producer, that it has been more largely utilised than any other as a pollen parent; but we do not want Woodstock Kidney progeny perpetually. From Radstock Beauty I have removed clusters of twenty fruits, weighing half a pound per cluster. A very interesting experiment in the case of these two kinds would be found in allowing one row of each of a given length to carry all the fruit possible, and one equal row of each to have all the bloom removed; then the tubers and fruit in the one case to be weighed against the tubers in the other case. Such a test might prove very instructive. *A. D.*

STACHYS TUBERIFERA.—Referring to your notices of this plant, or "Crosnes" of the Parisian markets, we are informed on reliable authority that in France they are stored in wood shavings to keep them through the winter; but of course the French climate is very different from ours. *J. Wrench & Sons.*

I have grown the above plant this year for the first time, and find it a real acquisition as a second course vegetable. Our family and the company staying here are very pleased with it, as is also the cook. It grows without much attention, is perfectly hardy, and very prolific. Cannot you, Mr. Editor, give it a more homely name as becoming a modest vegetable? Cooks cannot very well write "Stachys tuberifera" on their menu cards. *O. Thomas.* [Most menu cards being written in that language, why not adopt the French word, "Crosnes?" *Er.*]

FRUIT TREE BORDERS.—It is pleasant to find an old hand like Mr. Sheppard conceding, if sometimes with reservations, all the points I lay the most stress upon, namely, a border for the roots of the trees to be left uncropped, and a slope given to the cropping part of the border. We differ mainly in detail, and that may be due to the fact that Mr. Sheppard is living on a dry soil in a part of England which enjoys a warmer or at least a drier climate than other parts of the country. He would go to 5 feet, but I prefer 7 feet as the width of my fruit borders, if I had to make a large garden, or renew an old one that would admit of its being done. In small gardens it is advisable that the borders should be made of lesser width, and consequently with lesser fall from wall to path than that which was recommended in my note. Mr. Sheppard wants no drains in a soil resting on gravel, but he should not condemn their employment in heavy land, nor the use of platforms of hard materials under the trees in clayey, shallow, and even wet soils. I know very well a large kitchen garden near London where no preparations were made for wall trees or Vines, and the produce

was very fine, especially Grapes, Peaches, and Pears; but there were specially favourable circumstances in a deep light loam overlying sand or gravel, and the water-level 80—100 feet from the surface. Similar inattention to draining and other means to 'good cultivation would result in disaster where the water-level is much nearer the surface, the soil heavy, and overlying clay, as is the case over much of the country. I would not use a board gangway on any border, were it not that in wet weather it is not possible to walk on a border without doing harm to it, besides bringing mud from it on to the walks. Trampling a border in dry weather results, as Mr. Sheppard says, in good only, the soil gets consolidated, and the roots ramify to a much greater extent than in loose soil. *F. M.*

PEAR KNIGHT'S MONARCH.—In your last week's issue, p. 641, mention is made of two varieties of Pear; I have never known but one—fruit roundish with a short stalk, and easily known from the fact that it persists in shedding its fruit when nearly ready for gathering. I find it an excellent plan to hang a net under those growing on the walls, in the same way as one does for Peaches; into these the fruits drop, when they should be carried to the fruit room and placed in the coolest place, and brought forward in November, when they will ripen splendidly. The tree grows well as a standard; and then to preserve the fruit from being bruised plenty of long mulching ought to be laid underneath the tree. The spurious variety is Althorpe Crassane. The Monarch was raised some sixty years ago by the late J. Andrew Knight, who wished to present the Royal Horticultural Society with scions of his seedling, and his gardener unfortunately took them from the wrong tree, hence the confusion. *J. Rust, Eridge Castle.*

JUDGING AT WINCHESTER SHOW.—Allow me as a disinterested (in this case) exhibitor of Chrysanthemums of some years' standing to corroborate the criticism contained in the report which you give of the Winchester show on p. 610 of the *Gardeners' Chronicle*, in reference to the Cup class for forty-eight blooms. I am one of the persons referred to by your reporter, who considered that the judges made a serious error in their award of the 1st prize at this show. I thought that they did not attach sufficient importance to the Japanese blooms of the 2nd prize stand, which were so very much superior to those of the same section in the stand which they placed 1st. I will admit that the front and middle row flowers of the stands of incurved varieties which were placed 2nd were not equal to the similar rows of the 1st prize stand; but the fact is beyond dispute that the blooms in the back row of incurved flowers in Mr. Molyneux's stand were certainly superior to those of the back row in Mr. Flight's stand; this and the superiority of the Japanese, certainly outweighed the defects of the two rows of incurved named, and entitled Mr. Molyneux, in my opinion, to 1st honours. *E. Wills, Bassett, Southampton.* [We accepted our reporter's comments in good faith, and believe that he only stated what he considered to be true of these stands. *Ed.*]

HERBACEOUS BORDERS.—I am much obliged to your correspondent, Mr. E. Jenkins, for his criticism anent my notes (p. 510), as he gives me an opportunity of stating what cannot very well be put into brief Calendarial notes without incurring the risk of erasure by the editorial pen, viz., that statements contained in a Calendar of operations ought to be of such a character as will be applicable to most parts of the British Isles, and should contain instructions that may be followed in garden both large and small. With that object in view my previous notes were written, and I still adhere to what is stated therein. That Mr. Jenkins should take exception to advice on a certain point, and at the same time advocate a precisely similar practice, only in a much more aggravated form, appears to me inexplicable and very inconsistent. One point of contention is, that I advise *Aquilegia corulea* and *Aster dumosus*—plants from 12 to 15 inches high—as companion plants in the same row with others that grow from 3 to 3½ feet, such as *Anemone japonica*, *Aquilegia chrysantha*, and *Asphodelus luteus*. We have in the above a difference in the two extremes of 2½ feet. How does the matter stand in your correspondent's case?—as follows. He writes:—"Another row may be planted with *Galega officinalis* and *G. alba*, *Pyrethrum uliginosum*, *Iris sibirica*, &c." The difference in height of the two last species is from 3 to 4 feet, sometimes more, for whereas *I. sibirica* only attains a height of about 2 feet, *P. uliginosum* will in some localities

grow 6 feet. He gives a very excellent list certainly, but one which I myself would not recommend for beginners, as the result would probably be a certain amount of disappointment, besides money thrown away. It is much better to commence to grow hardy perennials with those of easy culture, and which will grow almost anywhere, but I fear that this much cannot be said of some of the species mentioned in Mr. Jenkins' list. Space will only admit of my giving one instance, viz., *Onosma taurica*. Now, this plant, when grown well, is certainly a gem, but it is a "miffy" subject, and will not grow everywhere; in fact, it is quite unsuited for growing in the open in many parts of England, and even in such a favoured part as South Wilts it requires a cold frame for its home during the winter. Mr. Jenkins states that *Veratrum* are only fit for a botanical garden, and thereby implies that they are unsuitable for private gardens. Will he kindly explain why? I will merely say that a plant of *V. nigrum* when in flower in the gardens here some time ago—7—8 feet high—was as much admired by all who saw it as any other plant in our collection. I rather incline to the opinion that your correspondent is under a misapprehension regarding some of the above-named species. *J. Horsfield.*

IPOMŒA CŒRULEA is one of the prettiest creepers grown, and certainly not so often met with as it deserves to be. It is very easily grown, thriving well in any warm house. At the present time a plant of this species is flowering very profusely on the roof of the conservatory at Greenlands, Berkshire, and the effect is very pleasing, viewed in contrast to the frosted glass of the roof. Being an annual it can be had in flower at different seasons by varying the time of sowing the seed. I know no flower, creeper or otherwise, that has such a pleasing blue colour. What a beautiful companion plant for *Clerodendron Balfourianum*, or one of the yellow *Allamandas*. *T. F. D., Valentines.*

ZINNIA HAAGEANA.—Seed catalogues will soon be in our hands, and in marking off the list of annuals wanted for the coming year, this should by no means be omitted, that is, where Zinnias are appreciated. It is very suitable for beds or borders, and some we remember to have seen, planted last season in the border, were very attractive. It grows from 12 to 18 inches in height, the leaves are smaller and quite distinct from *Z. elegans*, and again it is much more compact. The ray florets are bordered with with a band of bright yellow, the inner portion being of a much darker hue. *W. Harrow.*

SOCIETIES.

NATIONAL CHRYSANTHEMUM.

DECEMBER 5.—A meeting of the Floral Committee of the above took place at the Royal Aquarium on this date, there being a large attendance of members, and a goodly number of flowers being staged. Messrs. James Carter & Co., Holborn, sent Japanese Holborn Nugget, golden-yellow, good in colour, but wanting in substance. Mr. C. Harman Payne exhibited, for Mr. Ghys, a French amateur, a large Anemone-flowered variety named *Triomphe d'Anzin*, of a pale deep blush colour, the ray florets quilled. As one flower only was shown, it could not be dealt with, and a vote of thanks was passed. Mr. Mursell, Tower House Gardens, Streatham, had Japanese W. G. Drover, which is said to be the same as Frank Thompson, from Mr. E. Beckett, The Gardens, Elstree Park, came a Japanese variety named Mr. W. A. Harris, delicate blush, regarded as a great improvement upon *Hiver Fleur*; awarded a First-class Certificate of Merit; and a bright pale pink variety named *Madame Dubrieul*, large in size, but wanting in substance. This exhibitor also had Charles Sharman, purplish-rose, commended for its colour; and *Pelican*, a large white Japanese some very fine blooms being shown; it is a variety difficult to get, not being a good grower. A vote of thanks was unanimously passed. Messrs. Veitch & Sons, Chelsea, sent a late-flowering Japanese named *J. H. Mann*, delicate blush, a reflexed variety, with very broad petals. From Mr. Russel, Harfield, Sussex, came a yellow sport from the incurved *Princess of Wales*, named Mr. Coleman, but the flowers were too old: the committee wishes to see it again next year. From Messrs. J.

Laing & Co., Forest Hill, and Messrs. Henry Cannell & Son, came Japanese Etoile de Lyon, bright soft pink, a very fine flower with broad petals, and quite distinct: a First-class Certificate of Merit was awarded. Mr. R. Owen, nurseryman, Maidenhead, had blooms of some American varieties from plants received in July last—J. Collins, salmon, being new in colour; a vote of thanks was awarded. Also a dull deep pink sport from the white Japanese, Mrs. Carey, named Lily Owen, which was not in good character. Mr. H. Elliott, Springfield Nursery, Jersey, sent some new varieties of his own raising, and a First-class Certificate was awarded to a large Anemone-flowered Casar, pale rosy-pink guard petals, with a citran-coloured centre, very distinct. A yellow reflexed variety named Jersey Nugget, is identical with sample of Solomon. Messrs. H. Cannell & Son had incurred Perle Precieuse, pale rosy-pink with a silvery reverse; and a large-flowered Anemone named Ruche Toulousiana, not in good character; also a sport from Hero of Stoke Newington (incurved) named Lady Dorothy, which while promising, was not in good form. A First-class Certificate of Merit was awarded to Messrs. H. Cannell & Sons, for Chinese Primrose Cannell's Pink, large, clear, delicate cerise-pink;—a finely formed flower of large size and great beauty. Beauty of Kent, striped; and Bridesmaid, delicate blush-pink, were very fine also.

SCOTLAND.

SCOTTISH HORTICULTURAL ASSOCIATION.

The ordinary monthly meeting was held on the 4th inst. at 5, St. Andrew Square, Edinburgh, Mr. M. Dunn, Dalkeith, in the chair. After the usual preliminary business, a paper on the "Culture of Asparagus" was read by Mr. Porter, gardener, Lenchie, in which he contended that light soil, liberally enriched, was necessary to success. The French system of growing Asparagus was, he thought, good, and his own did not differ much from it. Asparagus culture was declining in England, and the French were beating us, as imported Asparagus could be supplied cheaper. From a calculation he had made, he believed that £126 per acre could be made by Asparagus culture.

Among exhibits there were Orchid blooms from Dr. Paterson, Bridge of Allan; Cattleya Gaskelliana, which, with growing experience of it, Dr. Paterson is disposed to think is the old single sheathed autumn flowering variety of C. labiata, and he has some of the forms finer even than the old double sheathed form. Cymbidium giganteum was a fine exhibit from the same—a fine spike and a splendid variety. Dr. Paterson also sent some good samples of Tea Roses, as showing the mildness of the season at Bridge of Allan.

Messrs. Laird & Sons tabled thirty-six blooms of Chrysanthemums, Japanese and incurved.

Messrs. Munro & Ferguson exhibited a stand of cut flowers in large bunches of tender and hardy border flowers, as showing the mildness of the season at Piers Hill, near Edinburgh, where their nursery is situated. The stand contained very presentable samples of *Prunella grandiflora*, double and single Primroses, Carnations, *Helleborus niger* augustifolia, *H. olympicus* albus, *Veronica rupestris*, Dahlias, Chrysanthemums, Daisies, Roses, *Tradescantia virginica*, East Lothian Stocks, *Hepatica angulosa*, Wallflower, *Anemone japonica*, Antirrhinums, Pentstemons, Sweet Peas, *Centaurea Cyanus*, Marguerites, Mignonette, *Helianthus multiflorus*, *Centaurea montana* alba, *Geum coccineum* plenum, *Scabiosa caucasica*, *Chrysanthemum segetum*, Pink, and French Marigolds.

Mr. Fairgreive exhibited his patent fruit tree protector.

Mr. Dunn, Dalkeith, had some seedling Japanese Chrysanthemums, raised from seeds received from New York, sown in March last; the plants were in 5-inch pots, about 2 feet high, with several stems bearing blooms of from 4 to 7 inches in diameter, in various colours, which suggested to Chrysanthemum growers present fresh possibilities in the culture of this popular flower.

THE CULTIVATION OF USEFUL PLANTS IN HAINAN.

A VERY interesting report on agriculture in Hainan (China) during the year 1887 has recently been issued from the Foreign Office. The report deals in detail with the principal articles of culture, especially food plants, and is of a most practical and useful nature. Naturally it commences with a consideration of Rice, which is described as being grown in low muddy ground near water, so that the fields can be watered if the rainfall is insufficient. The weeds and stubble of the last crop are ploughed up, and when, after about ten days, these are rotted away, the fields are watered either by rain or by hand. After being made smooth the young plants are planted out. Three months after planting the Rice blossoms, and in four months it is fit for cutting. The mode of sowing is as follows:—"The grain is soaked for several days, and then sown in the finest soil. The first crop is ready for planting out in twenty days, and the second in about a month, when the shoots are dug out with a trowel, a handful at a time together with the earth, and planted in the fields about 9 inches apart. In the second crop the shoots, which are allowed to grow much longer than in the first, are cut off at the top when planted out." The fields are very freely manured just before the blossoming period, and thoroughly irrigated. "Threshing is done in the fields. A large tub is taken, with an instrument like a ladder of four rungs inside it, against which the grain is beaten, being taken up in bundles with both hands and threshed against it. Another plan is to take the paddy into the village and beat it out with flails. About 80 lb. of Rice grain is used for sowing 1 acre, and this yields, on an average, about 4000 lb. on the first crop, and 5000 lb. on the second. In the most favourable years as much as 8000 lb. per acre has been harvested, but this is the limit. In bad years, again, the yield may be next to nothing."

SESAMUM (SESAMUM INDICUM).

This plant is grown best on high dry ground—excess of moisture is very detrimental to it. It does not require watering—the dew alone is sufficient to nourish it. In making the beds, therefore, the centres should be higher than the sides, so that the water may run off. In the first month of every year it is sown broadcast, not in lines, nor does it matter whether thickly or sparingly sown. In about ten days it begins to shoot, and in two and a half months it blooms, and at the expiration of another two and a half months it is ready for harvesting. The entire plants, roots and all, are carefully taken out of the ground, put on a cement floor, and threshed with a flail. Two kinds are known—one with black, and the other with white seeds. Sesamum does not generally require manure, but in the poorest soils ashes and ox-manure may be used.

GROUND NUTS (ARACHIS HYPOGAEA).

This plant is best grown in a soil of coarse sand and mud. They should be set deep, and the ground pressed down firmly over them. The ground is ploughed about April, and trenches dug about 10 inches apart, into which ashes, lime, and rubbish, are thrown. The seeds are sown about 10 inches apart, and, as each is put in, the sides of the trench are turned over it with the foot, and stamped down firm. About every ten days the ground is weeded, and in about two months the plants are sufficiently grown to be sprinkled with liquid manure. In four months they come into flower; the flower-stalk then bends over, and as the flower falls off, the flower-stalk buries itself in the ground, and produces the pods, which ripen about the end of October, bearing the well-known seeds known as Ground-nuts. The harvest, however, takes place at a later date, when the seeds yield more oil, and a better price can be obtained for it. Ground-nuts are harvested by ploughing them up with an ox-plough, when the stalks and seeds clinging to the plough are gathered

into heaps. For the remainder which are still left in the ground, two men lift the earth with a large Bamboo sieve. The pods are perfectly dried in the sun until the thin skin which covers the seed can be broken by rubbing, when they can be stored. Great care has to be taken to thoroughly dry the seeds to prevent their germination, in which case they are useless. The residue of the seeds after the expression of the oil is made into cakes, which are used for manuring the land.

COCOA-NUT (COCOS NUCIFERA).

The Cocoa-nut does best near salt water. The ground is ploughed up and the weeds removed, and Cocoa-nuts which have already sprouted are put in several feet apart. Salt is put in with them, but no manure. They bear fruit after ten years. If they do not flourish salt is again put to the roots. For the first few years after planting sweet Potatoes are sown on the ground, but when the trees grow tall and the foliage shades the ground, this cultivation is given up, and cattle are turned out to feed on the ground. Each tree bears from seventy to eighty nuts per annum.

INDIGO.

This plant, it is stated, can be grown on the hillsides and in the poorest soil. It does not appear, however, whether the plant referred to is *Indigofera* or *Polygonum*, from which some of the Chinese indigo is prepared. About July or August the plants attain a height of 2 feet, when they are taken up, root and all, and put into the vat, and soaked together with stone lime. This is stirred several times a day, and in ten days it is drawn off as liquid indigo. J. R. J.

PLANT PORTRAITS.

ANTHURUM CHAMBERLAINI, *Illustration Horticole*, t. 62, ex Mast., in *Gardeners' Chronicle*.
ARISTOTELIA RACEMOSA, Hetley, *Native Flowers of New Zealand*, t. 26.

CALANTHE MASUCA, *Orchid Album*, t. 354.

CALCULARIA SINCLAIRII, Hetley, *Flowers of New Zealand*, t. 27 (2).

CATTLEYA GASKELLIANA ALBA, *Orchid Album*, t. 353.

CYPRIPEDIUM ASHBURTONIÆ X, *Illustration Horticole*, t. 61.

DISA RACEMOSA, *Orchid Album*, t. 356.

EARINA MUCRONATA, Hetley, *Flowers of New Zealand*, t. 28.

EUPHRASIA MONROI, Hetley, *Flowers of New Zealand*, t. 27 (1).

FREYENETIA BANKSII, Hetley, *Flowers of New Zealand*, t. 36.

GNAPHALUM GRANDICEPS, Hetley, *Flowers of New Zealand*, t. 31 (2).

GNAPHALUM BELLIDOIDES, Hetley, *Flowers of New Zealand*, t. 31 (1).

LORANTHUS COLENSOL, Hetley, *Flowers of New Zealand*, t. 30.

LYCASTE SKINNERI ALBA, *Lindenia*, t. 153.—Said to have been introduced into Belgium by Linden from Mexico prior to its introduction to England by Skinner, and to have been first exhibited as *Maxillaria virginalis*. If Lindley was right in putting the plant in a new genus *Lycaste*, it was optional for him to adopt a new specific name, even if the former name had been authentically registered, and not been a mere provisional name.

MERYTIA SINCLAIRII, Mrs. Hetley, *Native Flowers of New Zealand*, t. 25.

METROSIDEROS TOMENTOSA, Hetley, *Flowers of New Zealand*, t. 29.

ODONTOGLOSSUM EUGENES, *Orchid Album*, t. 355.

OLEARIA INSIGNIS, Hetley, *Flowers of New Zealand*, t. 35.

PHEBALIUM NUDUM, Hetley, *Flowers of New Zealand*, t. 32.

PLAGIANTHUS LYALLI, Hetley, *Flowers of New Zealand*, t. 34.

QUINTINIA SERRATA, Hetley, *Flowers of New Zealand*, t. 33.

SENECIO GLASTIFOLIUS, Hetley, *Flowers of New Zealand*, t. 31 (3).

WAHLBERGIA SAXICOLA, Hetley, *Flowers of New Zealand*, t. 31 (4).

WARREA LINDENIANA, *Lindenia*, t. 155.—Discovered by Linden in Venezuela.

LAW NOTES.

ACTION FOR SEEDS.

IN the City of London Court on Wednesday, Nov. 5, before Mr. Eardley Wilmot, sitting as Deputy Judge for Mr. Commissioner Kerr, an action was brought by Mr. Thomas Clark, seed merchant, of 10, Mincing Lane, E.C., to recover payment of an account for seeds supplied to the defendants, Messrs. Prashkauer & Co., Limited, seed merchants, of 109, Fenchurch Street, E.C. The plaintiffs, it appeared, sold 100 bags of seed to the defendants, for which they now refused to pay. The defence was that when the seed was bought a sample of it was given to the defendants, but that the bulk was very inferior to the sample. They had paid £60 on account of the seeds before they took delivery of them.

The learned Deputy Judge said if they were not according to sample the defendants should have refused the seeds. The defendants said as soon as they got the sample and compared it with the bulk, they asked for an allowance. They were also willing to go to arbitration, but the plaintiff told them they were not entitled to any consideration, whether the bulk was equal to the sample or not. The seed was still in their wharf awaiting the trial of this case; and even now they would go to arbitration. The learned Deputy Judge found for the plaintiff, and said if the defendants did not like the bulk they should not have kept it—they should have sent it back. Judgment was entered for £4 18s. 5d. for the plaintiff, less £1 2s., paid into Court; and costs were allowed.

THE WEATHER.

MEAN TEMPERATURE OBSERVED AT CHISWICK DURING THE WEEK ENDING DEC. 15. (AVERAGE OF FORTY-FOUR YEARS.)

Dec. 9	41°·0	Dec. 13	40°·7
" 10	40°·9	" 14	40°·6
" 11	40°·8	" 15	40°·5
" 12	40°·7	Mean for the week ...	40°·7

THE PAST WEEK.

The following summary record of the weather for the week ending Dec. 3, is furnished from the Meteorological Office:—

"The weather has remained in a dull, rough, and unsettled condition very generally, with a good deal of rain over England and Ireland, and falls of snow, sleet, and rain over Scotland. Thunder and lightning were experienced during the earlier part of the period in almost all districts.

"The temperature has been lower than it was during last week, but in all districts excepting 'Scotland, N.' it has still been above the mean. Over the greater part of England an excess of 3° or 4° is shown, and in 'England, S.' 5°. The highest of the maxima were generally recorded either on December 2 or 3, when they varied from 55° in 'Scotland, N.' and 'England, E.' to 58° in 'Scotland, E.' and 'Scotland, W.' and to 60° in 'England, N.W.' and 'Ireland, S.' The lowest of the minima, which were registered during the earlier part of the period, ranged from 21° to 28° in Scotland, from 23° to 25° over Ireland, and from 25° to 33° over England.

"The rainfall has been rather less than the mean in 'Scotland, N.' but more in all other parts of the kingdom; in the east and west of Scotland, the south-west of England, and the south of Ireland, the excess has been large.

"Bright sunshine has continued very deficient generally. In the 'Channel Islands' the percentage of the possible amount of duration has been 33; over England it has ranged from 9 to 20, in Scotland from 6 to 14, and in Ireland from 5 to 6."

[Accumulated temperature indicates the combined amount and duration of the excess or defect of temperature above or below 32° F. for the period named, and is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	Above or below the Mean for the week ending Dec. 3.	TEMPERATURE.			
		ACCUMULATED.			
		Above 32° for the Week.	Below 32° for the Week.	Above 32° difference from Mean since Jan. 3, 1888.	Below 32° difference from Mean since Jan. 3, 1888.
Principal Wheat producing Districts.		Day-deg.	Day-deg.	Day-deg.	Day-deg.
0. SCOTLAND, N. ...	1 below	4	36	— 231	+ 189
1. SCOTLAND, E. ...	1 above	8	38	— 420	+ 101
2. ENGLAND, N.E. ...	1 above	22	9	— 465	+ 10
3. ENGLAND, E. ...	1 above	25	9	— 372	+ 132
4. MIDLAND COS. ...	4 above	26	12	— 419	+ 120
5. ENGLAND, S. ...	5 above	32	2	— 397	+ 143
Principal Grazing, &c., Districts.					
6. SCOTLAND, W. ...	3 above	18	10	— 328	+ 35
7. ENGLAND, N.W. ...	2 above	24	8	— 328	+ 77
8. ENGLAND, S.W. ...	3 above	33	3	— 412	+ 235
9. IRELAND, N. ...	1 above	23	15	— 233	+ 3
10. IRELAND, S. ...	1 above	30	13	— 213	+ 76
— CHANNEL ISLANDS	4 above	53	0	— 250	+ 150

DISTRICTS.	More or less than the Mean for the Week.	No. of Rainy Days since Jan. 3, 1888.	RAINFALL.		BRIGHT SUNSHINE.	
			Tenths of Inch.	Ins.	Percentage of possible Duration for the Week.	Percentage of possible Duration since Jan. 3, 1888.
Principal Wheat-producing Districts.						
0. SCOTLAND, N. ...	2 less	221	41.1	14	27	
1. SCOTLAND, E. ...	8 more	195	29.3	6	29	
2. ENGLAND, N.E. ...	2 more	175	24.9	13	26	
3. ENGLAND, E. ...	1 more	176	23.7	19	29	
4. MIDLAND COS. ...	1 more	164	24.7	15	27	
5. ENGLAND, S. ...	4 more	171	26.8	12	29	
Principal Grazing, &c., Districts.						
6. SCOTLAND, W. ...	7 more	183	42.5	7	30	
7. ENGLAND, N.W. ...	2 more	185	29.4	9	28	
8. ENGLAND, S.W. ...	7 more	191	35.4	20	34	
9. IRELAND, N. ...	5 more	197	33.9	5	27	
10. IRELAND, S. ...	12 more	178	35.1	6	32	
— CHANNEL ISLANDS	1 more	209	29.0	33	39	

MARKETS.

COVENT GARDEN, December 6.

[We cannot accept any editorial responsibility for the subjoined reports, which, however, are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list, and who are responsible for the quotations. It must be remembered that these quotations represent averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the supply in the market, and they fluctuate, not only from day to day, but often several times in one day, and therefore the prices quoted as averages for the past week must not be taken as indicating the particular prices at any particular date, and still less can they be taken as guides to the prices in the coming week. ED.]

Heavy supplies of Apples to hand; prices easier. Grapes cleared more readily. *James Webber, Wholesale Apple Market.*

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Apples, half-sieve ...	2 0-4 6	Lemons, per case ...	12 0-21 0
— Canada and Nova Scotia, per barrel ...	10 0-18 0	Peaches, dozen ...	2 0-6 0
Cobs, 100 lb. ...	10 0-11 0	Pine-apples, Eng. lb. ...	1 6-2 0
Grapes, per lb. ...	0 6-3 0	— St. Michael, each ...	2 0-3 0

VEGETABLES.—AVERAGE RETAIL PRICES.

	s. d. s. d.		s. d. s. d.
Beet, red, per dozen ...	1 0-2 0	Mustard and Cress, punnet ...	0 4-...
Carrots, per bunch ...	0 6-...	Onions, per bunch ...	0 5-...
Cauliflowers, each ...	0 3-...	Parsley, per bunch ...	0 4-...
Celery, per bundle ...	1 6-2 0	Potatoes, per cwt. ...	4 0-5 0
Cucumbers, each ...	0 9-...	— kidney, per cwt. ...	4 0-5 0
Endive, per dozen ...	3 0-...	Shallots, per lb. ...	0 6-...
Green Mint, bunch ...	0 6-...	Spinach, per bushel ...	2 6-...
Herbs, per bunch ...	0 6-...	Tomatoes, per lb. ...	1 0-...
Leeks, per bunch ...	0 4-...	Turnips, per bunch, new ...	0 5-...
Lettuce, per dozen ...	2 0-...		
Mushrooms, punnet ...	2 6-...		

POTATOES.—Beauty of Hebron, 70s. to 80s.; Imperators, 65s. to 75s.; and Magnums, 80s. to 90s. per ton. Trade very bad.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Aralia Sieboldi, doz. ...	6 0-18 0	Ferns, in var., doz. ...	4 0-18 0
Chrysanthemums, doz. ...	4 0-9 0	Foliage plants, var. ...	2 0-10 0
— large plants, each ...	2 0-4 0	Ficus elastica, each ...	1 6-7 0
Coleus, dozen ...	2 0-4 0	Fuchsias, doz. ...	3 0-6 0
Cyperus, per dozen ...	4 0-12 0	Hyacinths, Roman, dozen pots ...	10 0-12 0
Dracena terminalis, per dozen ...	30 0-60 0	Liliums, var., doz. ...	18 0-30 0
— viridis, per doz. ...	12 0-24 0	Marguerites, doz. ...	6 0-12 0
Epiphyllums, doz. ...	18 0-30 0	Palms in var., each ...	2 6-21 0
Erica hymalis, doz. ...	12 0-24 0	Pelargoniums, scarlet, per dozen ...	4 0-9 0
— caltra, dozen ...	6 0-12 0	Poinsettias, dozen ...	9 0-15 0
— gracilis, dozen ...	8 0-12 0	Primulas, per dozen ...	4 0-6 0
Euonymus, in var., per dozen ...	6 0-18 0	Solanums, dozen ...	9 0-15 0
Evergreens, in var., per dozen ...	6 0-24 0	Tulips, dozen pots ...	5 0-10 0

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Abutilons, 12 bun. ...	3 0-6 0	Mignonette, 12 bun. ...	2 0-4 0
Azaleas, 12 sprays ...	0 9-1 0	Narcissus, paper-white, (French), 12 bun. ...	3 0-6 0
Bouvardias, per bun. ...	0 6-1 0	Pelargoniums, 12 spr. ...	1 0-1 6
Camellias, 12 blms. ...	3 0-4 0	— scarlet, 12 spr. ...	4 0-8 0
Carnations, 12 blms. ...	2 0-3 0	Poinsettias, doz. ...	4 0-6 0
Chrysanthemums, 12 blooms ...	0 6-3 0	Primulas, dbl., 12 sp. ...	1 0-1 6
— dozen bunches ...	4 0-12 0	Roses, Tea, per doz. ...	1 0-3 0
Eucharis, per dozen ...	3 0-6 0	— coloured, dozen ...	2 0-4 0
Gardenias, 12 blooms ...	4 0-6 0	— red, per dozen ...	1 0-2 0
Heliotropes, 12 spr. ...	0 6-1 0	— Safrano, dozen ...	1 0-2 0
Hyacinths, Roman, 12 sprays ...	1 0-1 6	Stephanotis, 12 spr. ...	8 0-8 0
Lapageria, 12 blooms ...	1 0-2 0	Tuberose, 12 blms. ...	0 9-1 6
Lilac, white Fr., bun. ...	5 0-7 0	Violets, 12 bunches ...	1 0-1 6
Marguerites, 12 bun. ...	3 0-6 0	— dark, Fr., bunch ...	1 6-2 0
		— Parme, Fr., bun. ...	3 6-4 0

SEEDS.

LONDON: Dec. 5.—Messrs. John Shaw & Sons, seed merchants, of 37, Mark Lane, E.C., write that to-day's market, as might be expected, was very thinly attended, and the business doing was in the smallest possible compass. All descriptions of Clover seed are just now exceedingly quiet, and, indeed, no great activity is looked for until the New Year. Meantime, quotations all round keep steady. Canary and Hemp seed are now good in quality and low in price. For Peas and Haricots the demand is slow on former terms. There is no change in either Mustard or Rape seed. In Linseed the tendency is downwards.

CORN.

Averages.—Official statement showing the average price of British corn, imperial measure, in the week ended December 1:—Wheat, 31s. 8d.; Barley, 27s. 4d.; Oats, 16s. 9d. For the corresponding week in 1887:—Wheat, 31s. 3d.; Barley, 29s. 3d.; Oats, 16s. 1d.

FRUIT AND VEGETABLES.

SPITALFIELDS: Dec. 5.—Good supplies of all kinds of fresh vegetables, Potatoes, &c. Trade very slow indeed, hence low prices. Large arrivals of American Apples. Quotations as under:—Pears, 3s. to 6s. per bushel; English Apples, 2s. 6d. to 6s. do.; do., 1s. 3d. to 3s. per half-bushel; American do., 10s. 6d. to 21s. per barrel; Cauliflowers, 3s. 6d. to 7s. per tally; Savoy, 1s. 9d. to 2s. 6d. do.; Spinach, 1s. 6d. to 1s. 9d. per bushel; Brussels Sprouts, 1s. to 1s. 3d. per half-sieve; Seakale, 1s. 3d. to 1s. 9d. per punnet; Parsnips, 6d. to 9d. per score; Greens, 1s. to 1s. 6d. per dozen bunches; Turnips, 1s. 6d. to 2s. do.; Carrots, 1s. 3d. to 1s. 9d. do.; Horseradish, 11d. to 1s. 2d. per bundle; Celery, 8s. to 12s. per dozen bunches; English Onions, 5s. to 5s. 6d. per cwt.; Belgian do., 3s. to 3s. 3d. per bag; Dutch do., 3s. 3d. to 3s. 9d. do.; pickling do., 4s. 6d. to 5s. 9d. do.; Endive, 1s. 6d. to 2s. 6d. per dozen; Carrots, 24s. to 30s. per ton; Parsley, 1s. 6d. to 2s. per dozen bunches; Cabbages, 1s. 6d. to 2s. 6d. per tally.

STRAFORD, Dec. 4.—Both trade and supply have been good during the past week:—Cabbages, 2s. to 3d. per tally; Savoy, 2s. to 2s. 6d. do.; Cauliflowers, 1s. to 1s. 6d. do.; Turnips, 2s. 6d. to 3s. 6d. per dozen bunches; do., 25s. to 35s. per ton; Carrots, household, 25s. to 35s. do.; do., cattle feeding, 20s. to 24s. do.;

Mangels, 16s. to 18s. do.; Swedes, 17s. to 20s. do.; Apples, English, 2s. 6d. to 6s. per bushel; Watercress, 6d. per dozen; Beetroot, 6d. to 1s. per dozen; Celery, 8d. to 1s. per roll; Sprouts, 1s. to 1s. 3d. per half-sieve; Horseradish, 1s. to 1s. 2d. per bundle; Walnuts, 3s. 6d. to 4s. per bag; Pears, 3s. to 4s. per bushel; Sage, 1s. 6d. per dozen bunches; Thyme, 1s. 6d. do.

POTATOS.

BOROUGH AND SPITALFIELDS: Dec. 4. — Although fresh arrivals have not been heavy, London stocks have rather accumulated from lack of demand, and cause a dull trade; prices are rather easier, except for best samples. Quotations:—Regents, Scotch, 85s. to 115s.; English, 60s. to 80s.; Hebrons, 65s. to 110s.; Magnum Bonums, 60s. to 100s. per ton.

SPITALFIELDS: Dec. 5.—Quotations:—Beauty of Hebron, 90s. to 100s.; Magnums, 65s. to 85s.; Imperators, 75s. to 85s.; Champions, 60s. to 65s.; Regents, 85s. to 100s. per ton.

STREATFORD: Dec. 4.—Quotations:—Light soil 65s. to 85s.; dark do., 65s. to 75s.; White Elephants, 70s. to 90s.; Beauty of Hebron, 60s. to 75s. per ton.

HAY.

Averages.—The following are the averages of the prices obtained at the various metropolitan markets during the past week:—Clover, old, prime, 120s. to 147s. new, 80s. to 110s.; inferior, 30s. to 84s.; prime meadow hay, 120s. to 130s.; good new hay, 80s. to 100s.; inferior, 30s. to 70s.; old straw, 40s. to 48s.; new, 28s. to 44s. per load.

NOTICES TO CORRESPONDENTS.

INTELLIGENT READERS, do PLEASE NOTE that letters relating to ADVERTISEMENTS, or to the supply of the Paper, should be addressed to the PUBLISHER, and that all communications intended for publication, as well as specimens and plants for naming, should be addressed to the EDITOR. Such communications should be written on one side only of the paper, and sent as early in the week as possible. Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

GALLS ON ORCHID ROOTS: *Thos. Denny*. The insect which causes these galls is *Isosoma orchidarium*. We do not know of any remedy. You might try some sticky compound that will keep moist spread on pieces of cardboard or paper. The other question next week.

GARDENIAS: *H. B. M.* Your plants are attacked by the root-worms illustrated in our issue for April 9, 1887, p. 489. You had better burn the plants and the soil in which they are growing.

LAWN SLOPE: *Gardener*. Do not make a regular slope, it is both unnatural and ugly. See our issue for November 24 last; there are there examples of good slopes applicable to your case. A terrace is but an ungainly way of getting over the difficulty, and they are, moreover, expensive to make and to keep in order, and dwarf the height of the mansion when looked at from any point below.

LILUM AURATUM: *C. B. R.* Roots dug up in August, before being thoroughly ripened, are not likely to keep well through the winter, and still less so if they are stored in the open, in sand, under straw and hurdles. In a very mild winter no harm might arise.

LUPINS: *R. V. & S.* The dwarf pale pink Lupin sent is a very prettily coloured one, but the pieces sent give no idea of the appearance of the plant.

MEALY-BUG ON VINES: *J. H. W.* There are many recipes, some gardeners pin their faith on petroleum emulsion, petroleum diluted with water, Gishurst compound, and coal tar. Whichever is used must, with the exception of the first-named, be largely diluted with some innocent medium, as clay, cow-dung, soot, and with nothing of a viscid nature, otherwise injury would be done. After rubbing off the loose bark with the hand, say, petroleum emulsion may be used; this must be rubbed with a soft brush into every part, especially the crevices about old spurs. Then should follow washing the walls and woodwork with hot-water and petroleum, at the rate of half a pint to 2 gallons of the former. Lime-washing should succeed the washing of the walls; and painting

the woodwork might also be done, if it is getting worn off, or the attack of bug be severe. The soil of the borders should be taken away to the depth of 4 inches and renewed with fresh compost. Washing the Vines with emulsion, cleaning the walls, &c., and renewing the surface soil, supplemented by a sharp outlook for the insect during the period of growth will have to be followed up for several years in succession.

NAMES OF PLANTS: *Abele Fairall*. *Origanum Dictamnus*.—*A. R.* 1, *Croton pictum*; 2, *Dendrobium Pierardi*; 3, *Epidendrum cochleatum*; 4, *Cypripedium venustum*; 5, *Croton variegatum*; 6, *C. undulatum*.—*W. X.* 1, *Thomasia solanacea*; 2, *Pittospermum undulatum*; 3, *Dacrydium cupressinum*; 4, *Michaelia (Magnolia) fuscata*; 5, *Semele (Ruscus) androgyna*.—*J. S.* 1, *Gongora galeata*; 2, *Acacia dealbata*; 3, *Begonia nitida alba*; 4, *Adiantum excisum*; 5, *Adiantum hispidulum*; 6, *Adiantum Capillus-veneris* var., may be *A. Mariessii*.—*H. C.* *Odontoglossum Inseayi*.—*W. F. C.* 1, *Picea Nordmanniana*; 2, *Pinus excelsa*; 3, *Abies pinsapo*; 4, *Cedrus atlantica*.

ORCHIDS: *J. P.* *Cœlogyne cristata* will grow best in a cool-house, although, during the flowering period, a warm-house is best for it. Potting and dividing the pseudobulbs is best done in early summer. The resting time is after flowering. As the plant is evergreen it must not be kept totally dry at the root when at rest. They grow best in well-drained pots. Thunias: the old stems of these plants may be cut up like a *Dieffenbachia* and propagated; this is best done when growth is completed. Pot the plants just before growth commences, using coarse peat and sphagnum in equal parts, and well drained pots—no bottom-heat. Newly imported *Cypripediums*, after cleaning them and cutting away all damaged parts, may be potted into fresh crocks and charcoal, and kept moist in a shady house until roots appear, when they may be reported in the usual way.

ROMNEYA COULTERI: *T. G. C.* It is a half-hardy perennial, and does best in a frame or in the greenhouse. It may be raised from seeds sown in the spring.

SEEDS OF ARUM ÆTHIOPICUM: *J. M.* The production of seed is not rare. They have small commercial value. It would take from two to three years to get a flowering plant from seed.

TO SKELETONISE LEAVES: *E. Longley*. Take 6 oz. of washing soda, and put into 2 quarts of boiling water. Slack 3 oz. of quicklime, and add to the other. Boil the whole for 15 minutes. Let it settle, and then pour off the clear fluid. Put this on the fire and boil; while boiling put in the leaves, and boil for one hour or so. Take out a leaf, and if the epidermis comes away easily when rubbed by the finger and thumb (under clean water), the leaves are ready. After the epidermis is removed, put the skeletons into a solution of a wineglassful of chloride of lime to a quart of water, in order to bleach them; some will be finished in about 10 minutes, others about an hour; when white, throw them into pure water to clean out the bleach, and float out on to slips of paper. The best leaves to commence with are Holly, Poplar, Ivy, Laurel, &c., and should have no signs of decay in them.

WINTER MOTH (*CHEIMATOBIA BRUMATA*): *G. P. C.* The smear you have used is very efficacious, for the piece sent is covered with the males and the almost wingless female. As prevention is better than cure, we advise all gardeners to place a broad band of rag or paper smeared with boiled train-oil, bird-lime, size, or cold coal-tar, round their Apple tree stems during this month, when many of these insignificant but very destructive insects will be caught. It is best, when the trapping of the moth is begun early in November, renewing the smear as often as it hardens.

CATALOGUES RECEIVED.

DICKSONS & Co., 1, Waterloo Place, Edinburgh, N.B.—Forest Trees.
MARTIN GRASHOFF, Quedlinburg, Germany—Wholesale Seed List.

COMMUNICATIONS RECEIVED.—*G. P.*—Dicksons.—*H. C.* & Sons.—*R. H.*—*J. S.*—*E. P.*—*Ghent*—*T. H.*—*W. R.*—*P. L. S.*—Professor M'O., Cape Town. *J. V.*—*R. D.*—*E. J.*—*D. J.*—*R. A.*—*R. J.*—*P.* (too soon after former report.)—*J. B.*—*A. D.*—*W.*—*Pteris*.—*H. M.*—*J. C.*—*E. C.*—*M. T.*—*J. B.*—*D. R.* & *T.*—*W. H. S.*—*T. D.*—*J. Trotman*.—*A. N.*—*H. Corder*.—*S. T.* & *S.* (next week.)—*H. G. R.*—*L. Linden*.

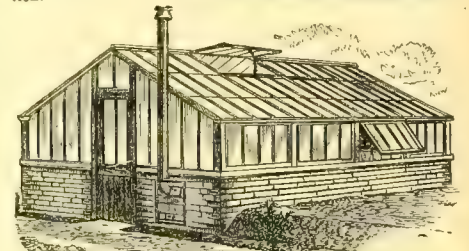
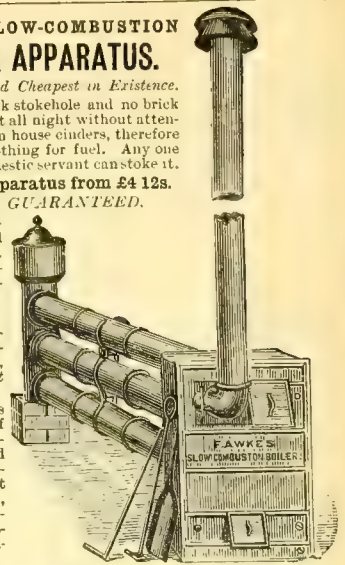
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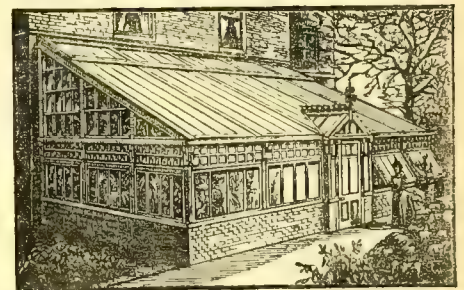
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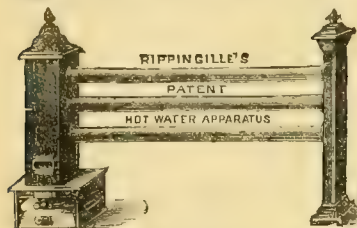
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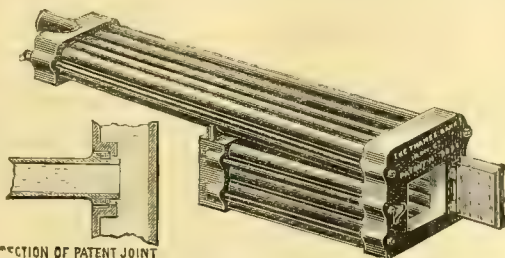
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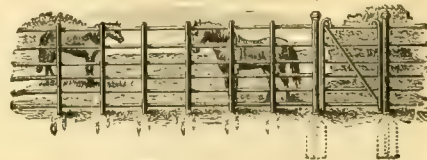
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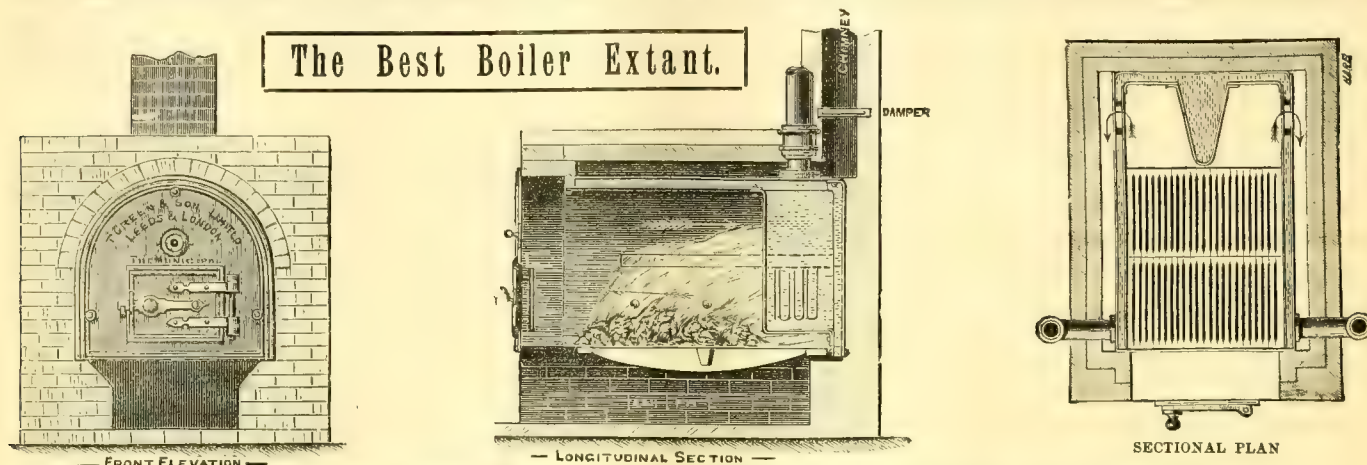
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SPECIMEN CONIFERS.—Trees for Avenues, Evergreens, and Forest Trees in great variety. CATALOGUE free on application. —RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

VAN MEERBEEK AND CO., HILLEGOM, near HAARLEM, HOLLAND,

GROWERS of DUTCH BULBS. Goods delivered entirely free to destination. No packing charges.

ENGLISH CATALOGUE gratis and post-free on application. Cheap prices.

ANTHRACITE. Best quality. Horticultural and general purposes. HOCKADAY AND CO., Colliery Proprietors, LYDNEY. (In previous advertisements for "Sydney" read "Lydney.")

CHRYSANTHEMUM CULTURE.—Standen's Manure, admitted by growers to be unrivalled for this purpose; in tins, 1s., 2s. 6d., 5s. 6d., and 10s. 6d. each. Sold by all Seedsmen.

SULPHIDE of POTASSIUM (Harris).—A certain cure for Mildew on Plants, Red Spider, Aphid, &c. Enough to make 32 gallons of solution, free for 1s. 3d. The only kind to use is "Harris's specially prepared Sulphide of Potassium." Sole Manufacturers: PHILIP HARRIS AND CO. (Limited), 9, Bull Ring, Birmingham.

THOMSON'S IMPROVED VINE and PLANT MANURE.—This valuable Manure is made only by us. Every bag and tin has our name on it. To be had of all Nursery and Seedsmen, and direct from us. 1 cwt. and over carriage paid. London Agent—Mr. GEORGE, 10, Victoria Road, Putney, W.M. THOMSON AND SONS, Clovenfords, Galashiels, N.B.

SALES BY AUCTION.

Monday Next.—(Sale No. 7827.)

About 500 lots of First-class BULBS, just received from Holland, in splendid condition for present planting, consisting of Double and Single Hyacinths, Tulips, Crocuses, Narcissus, Scillas, Snowdrops, Anemones, Ranunculi, Ixias, Sparaxis, Gladioli, Liliums, Spirea japonica, Lily of the Valley Crowns for Forcing, &c.

MR. J. C. STEVENS will SELL the above by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on MONDAY NEXT, December 17, at half-past 12 o'clock precisely.

On view morning of Sale, and Catalogues had.

Wednesday and Saturday Next.

Choice Dwarf-trained and Pyramid FRUIT TREES, several hundred First-class Standard and Dwarf ROSES, Hardy Ornamental SHRUBS and CONIFERS; BORDER PLANTS in great variety; LILY of the VALLEY in Crowns and Clumps; SPIREA JAPONICA; several hundred lots of BULBS just received from Holland, in splendid condition for present planting, comprising Hyacinths, Tulips, Crocuses, Snowdrops, Narcissus, Daffodils, Scillas, Anemones, Gladioli, Lilies, &c.

MR. J. C. STEVENS will SELL the above by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY and SATURDAY December 19 and 21, at half-past 12 o'clock precisely each day.

On view morning of Sale, and Catalogues had.

Thursday Next.—(Sale No. 7830.)

IMPORTANT SALE of LILIUM from Japan, 20,000 grand Bulbs of Liliu auratum, 2000 L. Krameri, 1000 L. longiflorum, 200 L. auratum macranthum, and other BULBS, just received direct from Japan in the finest possible condition; 5000 Double South African TUBEROSES, 10,000 Berlin LILY of the VALLEY Crowns, Home-grown LILIES, Japanese IRIS, &c.

MR. J. C. STEVENS will SELL the above by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, December 20, at half-past 12 o'clock precisely.

On view morning of Sale, and Catalogues had.

Monday Next.—Japan Lily Bulb Sale.

MESSRS. EDWARD BARBER AND CO. will offer at the London Commercial Sale Rooms, Mining Lane, E.C., on MONDAY, December 17, at 2 P.M., in original packages, and without reserve, a choice Collection of about 230 Cases of assorted JAPAN LILY ROOTS, comprising:

Lilium longiflorum,	Lilium lancifolium rubrum,
Lilium tigrinum,	Lilium auratum.
Lilium lancifolium album,	

Just received direct from Japan.

The goods will be on show at the Warehouse, and Catalogues and full particulars may be had prior to and on the day of Sale, of EDWARD BARBER AND CO., Colonial Brokers, 32, Fenchurch Street, E.C.

Tuesday Next.

Important to the Trade and Private Buyers.

SALE of NURSERY STOCK and GREENHOUSE PLANTS, from sample.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on TUESDAY NEXT, December 18, at half-past 12 o'clock precisely, large quantities of NURSERY STOCK and GREENHOUSE PLANTS from Sample, including the following:—

10,000 Dwarf Roses	15,000 Pinus austriaca
5,000 Asparagus	1,000 Dwarf-trained and Standard Fruit Trees
1,000 Seakale	
500 Hardy Primulas	3,000 Laurels
21,000 Scotch Firs	3,000 Fancies
7,000 Azalea Mollis	150,000 Quick
600 Dracena Veitchii	Thousands of Forest Trees
5,000 Poplars	

Samples will be on view the morning of the Sale, and Catalogues forwarded on application.

Wednesday Next.—December 19.

1,000 LILIUM AURATUM and various other Lilies from Japan, 10,000 Crowns LILY of the VALLEY, BARR'S DAFFODILS, English-grown LILIES, Japanese IRIS, 500 AZALEAS and CAMELLIAS from Belgium, STOVE and GREENHOUSE PLANTS in variety, SPIREA JAPONICA, various HARDY BULBS, Standard and Dwarf ROSES from English nurseries, &c.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., at half-past 12 o'clock precisely.

On view morning of Sale and Catalogues had.

Wednesday Next.—Great Sale of Liliu auratum. Important to the Trade.

15,000 splendid BULBS just received from Japan in excellent condition; also a consignment of LILIUM MACRANTHUM, SPECIOSUM ALBUM and RUBRUM, KRAMERI and CORDIFOLIUM, just to hand.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on WEDNESDAY NEXT, December 19, at half-past 12 o'clock precisely without reserve.

On view morning of Sale, and Catalogues had.

Dutch Bulbs.—Thursday Next.

FINAL SALE of the SEASON, without reserve.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on THURSDAY NEXT, December 20, at half-past 11 o'clock precisely, a large quantity of first-class HYACINTHS, TULIPS, CROCUS, NARCISSUS, and other DUTCH BULBS; also a consignment of English-grown LILIES, and various other BULBS.

On view morning of Sale, and Catalogues had.

Friday Next.—December 21.

Highly important Sale by order of Messrs. F. Sauder & Co., of the new and magnificent CYPRIPEDIUM ELLIOTTIANUM, a very large-flowered, free-growing species, bearing as many as five of its magnificent flowers on a single spike. The flowers are of a superb, rich, rosy-crimson and white in colour, with chocolate, crimson markings, lines and spots. Many varieties, widely distinct in form and colouring, may be expected from the plants now offered. It is a grand addition to our cultivated Cypripediums, and has a great future before it.

CATTLEYA AMETHYSTOGLOSSA, a large addition to our fine condition, and among them very fine masses.

CATTLEYA MAXIMA PERUVIENSIS.—The most brilliant variety of this fine Cattleya ever imported. The new and superb ODONTOGLOSSUM HUNNEWELLIANUM, Lælia acceps white.

All the fine superb white forms are contained in the lot offered together with a fine lot of CATTLEYA SCHROEDERÆ, DENDROBILUM BIGIBBIUM, LÆLIA HARPOPHYLLA, ZYGOPETALUM CRINITUM GRANDIFLORUM, and many other splendid ORCHIDS.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on FRIDAY NEXT, December 21, at half-past 12 o'clock precisely.

On view morning of Sale, and Catalogues had.

Friday Next.—Orchids in Flower.

FOR CHRISTMAS DECORATION.

MESSRS. PROTHEROE AND MORRIS will include in their SALE on FRIDAY NEXT, December 21, a large quantity of ORCHIDS in FLOWER for Christmas decoration.

On view morning of Sale, and Catalogues had.

In Chancery.—Barnet, Herts.

TO BE SOLD, a choice piece of FREEHOLD and COPYHOLD LAND, 5 a. 3 r. 11 p., containing a frontage of about 670 feet to the Main Road and Well House Road, and from its high and healthy position it is most eligible for either Building, Nursery, Florist, or Market Garden purposes. No reasonable offer refused.

Apply to PROTHEROE AND MORRIS, Estate Agent, 67 and 68, Cheapside, London, E.C.

Price only £300.

The HADLEY NURSERY, Hadley, about 10 minutes' walk from the High Barnet Railway Station.

TO BE SOLD, with Possession, the LEASE of the above old-established NURSERY (18 years unexpired), comprising nearly 6 Acres of excellent Nursery ground, Dwelling-House, Seed Shop, the erection of 8 modern Greenhouses, Pits, Stable, Cart Sheds. Low Ground Rent of £65 per annum.

Apply to PROTHEROE AND MORRIS, Estate Agents, 67 and 68, Cheapside, London, E.C.

FOR DISPOSAL, a well-established FRUITERER and FLORIST'S BUSINESS; capital Shop and House. Lease 20 years. Taking £2000 per annum; Family Trade. Price on application. London, N.W. FRUITERER, 41, Wellington Street, Strand, W.C.

To Market Gardeners, Florists, Nurserymen, &c. HAMPTON-ON-THAMES.

FOR SALE, choice FREEHOLD LAND, in Acre Plots, suitable for above. Rich Garden Soil with gravel and sand sub-soil. The land is considered by the Trade the finest near London for Grapes and all other Market Products.

Apply, SECRETARY, Estates Investment and Villa Farm Company, Estate Office, Tangle Park, Hampton-on-Thames.

South of England.

LARGE GARDEN, 20 Acres, with Twenty Greenhouses and Vineries. £7000 has been spent on the property. Seven years' lease. Two Cottages inclusive. £150 a year. ELDRIDGE, Portsmouth.

TO NURSERYMEN and FLORISTS, &c.—

Splendid opportunity for any possessing good capital to establish a first-rate business in one of our most fashionable watering-places and residential towns in the South. Shop and Greenhouse with large frontage in commanding position. Apply to X. X. Mr. J. Hill, 12, Alpha Street, Peckham, S.E.

TO BE LET, or LEASE SOLD, a compact NURSERY, walled in, with Dwelling House, extensive Glass, in perfect order, with best Heating Apparatus, Potting Sheds, and every convenience. Close to Railway Station, S. W. R., ten miles from town.

Terms, apply to J. care of Messrs. Hooper & Co., Limited, Covent Garden, London, W.C.

TO BE LET, NURSERY, Lancashire, not far from Liverpool, as a going concern in full working order; stock at a fair valuation. About 8000 feet of Glass and half an acre of Land. Rent low. Good opportunity for anyone wishing to commence business with only small capital.—T. D. C. Gardeners' Chronicle Office, 41, Wellington Street, Strand, W.C.

PROTHEROE AND MORRIS, HORTICULTURAL MARKET GARDEN and ESTATE AUCTIONEERS and VALUERS, 67 and 68, Cheapside, London, E.C., and at Leytonstone, E. Monthly Horticultural Register had on application.

FOREST TREES, FRUIT TREES and ROSES.—Large Stock of Seedling and Transplanted Forest Trees. Samples and prices with Catalogues. Free on application. IRELAND AND THOMSON, Nurserymen, Edinburgh.

For Sale.

500 ODONTOGLOSSUMS, in variety, including Alexandre (Sander's finest variety), Harry-anum, Pescatorei, triumphans, vexillarium, &c., all well-established plants in fine condition. To be sold cheap. For particulars apply to IRELAND AND THOMSON, Nurserymen, Edinburgh.

ORCHIDS.

THE LIVERPOOL HORTICULTURAL CO.

(JOHN COWAN), Limited,

Have just received fine importations of the following

ORCHIDS:—

CATTLEYA SANDERIANA, ODONTOGLOSSUM ALEXANDRÆ,

LINDENI,

&c., &c., &c.

Circular with full particulars on application.

THE VINEYARD AND NURSERIES, GARSTON, LIVERPOOL.

CHRISTMAS FLOWERS, in Bloom, for Table or Greenhouse Decoration, all extra fine Plants, in 10 and 48-pots, at per dozen. Splendid CYCLAMEN, 12s., 18s., and 21s.; grand POINSETTIA, 1s., 21s., and 30s.; SOLANUMS, full of Berries, 9s., 12s., and 18s.; PRIMULAS, finest varieties, 6s., 9s., and 12s. Also LILIES, TULIPS, AZALEAS, &c.

Mrs. MORLE, 162, Fenchurch Street, E.C.

FOR SALE, a fine lot of healthy Specimen AZALEAS, covered with Flower-buds; also fine Specimens of CERO DENDRONS, ANTHURUS SCHERZERIANUS, Specimen CROTONS, FERNS, &c., all in the best of condition.—For price and particulars, apply to G. H. COLE, The Gardens, Woodbank, Dumfries.

A LARGE LIST of CYPRIPEDIUM disposable for the Trade, is sent free on demand by E. D. PYNÆRT, Nurseryman, Ghent, Belgium.

LILY of the VALLEY.—Strong forcing crowns. Price and sample on application. P. VAN TIL, Jz., Bulb Grower, Hillegom, Haarlem, Holland.

SEAKALE for Forcing.—Superior, selected, large Crowns, 80s. per 1000; under 500 9s. per 100. A remittance with all orders.—ALFRED ATWOOD, Grower, 14, Lavender Terrace, Battersea, S.W.

ORCHIDS a SPECIALTY.—See New Illustrated CATALOGUE, post-free on application. FRED HORSMAN AND CO., Colchester.

TO BE SOLD, cheap, about 11,000 large Stools of RHUBARB, the remaining stock of the late Mr. Martin. May be seen and particulars from T. YOUNG, New Villas, Floddon Road, Camberwell, S.E.

CHRYSAANTHEMUMS A SPECIALTY.—Awards at Crystal Palace and Brighton. W. RAY AND CO.'S CATALOGUE is now ready, post-free. Cuttings, general collection, 1s. 6d. per dozen, all healthy, strong, and true to name. W. R. & Co. make a special choice selection of new varieties. See CATALOGUE. Mount Pleasant, Green Street, Sittingbourne.

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Begonia Scharfii.

JOHN LAING AND SONS have great pleasure in offering plants of this, the finest species of the genus. (See Gardeners' Chronicle, page 670.) Price 5s. and 7s. 6d. each. The Nurseries, Forest Hill, S.E.

NARCISSUS EMPEROR and EMPRESS.—The largest of all DAFFODILS, 12s. per dozen each. THOMAS CRIPPS AND SON, The Tunbridge Wells Nurseries, Kent.

CAMELLIAS FOR SALE.—A few large Camellia Plants, about 9 to 12 feet in height, in full bud, also PALMS, OLEANDER, DRACÆNAS, &c. H. F. C., 16, Wickham Road, Brockley, S.E.

CELOGYNE CRISTATA with bloom-spikes, well grown, at reduced prices. Trustees of the late J. STEVENSON, Timperley, Cheshire.

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50,000 PLUMS and DAMSONS, all fine-grown trees.—For price apply to FLETCHER BROS., Ottershaw Nurseries, Chertsey, Surrey.

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CHARLES TURNER'S Autumn CATALOGUE, containing full collections of Roses, Fruit Trees, Conifers, and all kinds of Hardy Trees and Shrubs, is now ready, and may be had free on application. The Royal Nurseries, Slough.

CHRYSAANTHEMUMS to and from all parts of the Globe. By far the best collection of new and old varieties in commerce. Descriptive Catalogue with Cultural Directions by E. Molyneux and C. Orchard. Acknowledged in Europe and America as the best Descriptive Catalogue. Price 6d.; free to customers. Awarded 3 Medals and 20 First-class Certificates. I never exhibit for prizes in competition with Gardeners or Amateurs. Open to purchase new varieties of merit.—R. OWEN, F.N.C.S., Floral Nursery, Maidenhead.

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FOR SALE, 10,000 GENISTAS, in 3-inch pots, at 10s. per 100. Prices to the Trade on application. 20,000 well-rooted cuttings of Genistas, at 5s. per 100. **FERNS,** *Lomaria gibba*, out of thumb-pots, 5s. per 100; out of boxes, 2s. 6d. per 100, sent on by Parcel Post.

Money Orders payable at Leyton Green.
T. BALDWIN AND SON, Edith Nursery, Runcorn Road, Leyton.

CHRYSANTHEMUMS.—600 best sorts, true to name, strong Cuttings now ready, 1s. 6d. per doz., 10s. per 100. Many of the best *Prizes* and Silver Cups are taken by my customers. For price of new sorts, see Catalogue (2 stamps), of **WM. ETHERINGTON,** Chrysanthemum Grower, Swanscombe, Kent.

HALE-SPECIMEN STEPHANOTIS, free-flowering variety, very fine stuff, 10 to 12 feet; also 25,000 **AUCUBAS**, all sizes. For particulars apply to **G. SMITH,** Dell Nursery, Rock Ferry, Cheshire.

30,000 DWARF ROSES.—Cheaper than ever. All the best leading varieties. Waranted true to name. The best money can buy. Sample dozen from 3s.; 22s. per 100—packing free for cash with order. Send for a LIST.

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To the Trade.

SEED POTATOS.

H. AND F. SHARPE'S Special Priced List of SEED POTATOS will be issued in a few days. In the meantime they will be pleased to give quotations for any varieties their friends may require.

Seed Growing Establishment, Wisbech.

"R. H. ELLIOT" CARNATION.—Strong rooted layers of this very fine new yellow-ground CARNATION, which has this autumn (wherever exhibited) been awarded *Four First-class Certificates*. Full particulars on application. 3s. 6d. each, 6s. 6d. per pair.

LAING AND MATHER, Nurserymen, Kelso, Scotland.

PEONY ARBOREA—P. SINENSIS.—The unique and very best selected collection in the world—900 varieties of *P. arborea*; 350 of *P. sinensis*, including new, rare and very rare varieties; also Japanese and Chinese sorts. Special Collections will be selected for Amateurs. Ask for the Descriptive CATALOGUE of Prices, printed in English, to **L. PAILET,** Nurseryman, Chateaux (Seine), near Paris, France. Established 1827.

NOTE.—Best season to plant *P. sinensis*, August, September, and October, but Peonies may be planted also up to April.

LILY OF THE VALLEY, fine Forcing Crowns or Clumps; **SPIREJA JAPONICA,** *DIELYTRA SPECTABILIS,* *HYDRANGEA PANICULATA* *GRANDIFLORA*, &c. Price and samples on application.

WILLIAM DENMAN, T, Catherine Street, Covent Garden, W.C.

SEED TRADE, 1888-9.—Before placing your Orders please write for our SPECIAL PRICES, which, owing to crops having proved better than expected, are exceedingly low.

HOWCROFT AND WATKINS, Seed Merchants, Covent Garden, London, W.C.

Lilium auratum.

HURST AND SON have just received, from Japan, a large consignment of the above in excellent condition, and will quote low prices on application.

Seed Warehouse, 152, Houndsditch, London, E.C.

To those about to Plant.

A DESCRIPTIVE CATALOGUE, comprising fine Transplanted Fruit Trees, Roses, Hardy Climbers, Rhododendrons, Conifers, Ornamental and Flowering Trees and Shrubs, Forest Trees, &c., in large varieties and quantities, adapted to all soils and climates. Sent free on application to **GEO. JACKMAN AND SON,** Woking Nursery, Surrey.

Orchid Seeds.—Palm Seeds

Seeds of Forest Trees, Shrubs, Aquatics, &c.

Choicest Vegetable and Flower Seeds.

Descriptive Catalogue (1889), 1s., post-free (referred to customers).

JARMAN & CO.,

CHAUD, SOMERSETSHIRE.

RHODODENDRON PONTICUM,
For Parks, Plantations, and Coverts.

AN IMMENSE STOCK OF ALL SIZES.

VERY LOW QUOTATIONS.

JOHN CRANSTON & CO.,

KING'S ACRE NURSERIES, near HEREFORD.

STRAWBERRIES.

Strong Roots, 4s. per 100. Plants in small pots, 16s. per 100; ditto in large pots, 25s. per 100. Descriptive LIST free.

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PASTUPLANTA, the best Artificial Manure.

It enriches the soil with the fertilisers drawn from it by plants; no unpleasant smell; admirably adapted for all pot plants. In bags: 112 lb., 19s.; 56 lb., 11s. 3d.; 28 lb., 6s. 9d.; 14 lb., 4s.; 7 lb., 2s. 3d. In tins, 1s. each. Sole Manufacturers, **PHILIP HARRIS AND CO. (Limited),** 9, Bull Ring, Birmingham.

BEESE'S MANURE.—The Best and

Cheapest Fertiliser for all purposes. Write for Circular containing the Leading Gardeners' and Market Growers' Reports. Sold in Tins, 1s., 2s. 6d., 5s. 6d., and 10s. 6d. each, or 1 cwt. Bags, sealed, 13s. By all Seedsmen, or apply direct to **W. H. BEESE,** Carbrook Bone Mills, Sheffield.

BONES!—BONES!!—BONES!!!

Crushed Bones in all sizes for Vine Borders, Lawns, Potting, Grass Lands, &c. Also **BONE MEAL** for Poultry Feeding, **GARDEN GUANO,** **DISSOLVED BONES,** Special MANURES and FERTILIZERS for all purposes.

For Prices, apply to

HARRISON, BARBER & CO. (Limited),
GARRETT LANE, WANDSWORTH, SURREY, S.W.

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COCOA-NUT FIBRE REFUSE.

4d. per bushel; 100 for 25s.; truck (loose, about 2 tons),

40s.; 4-bushel bags, 4d. each.

LIGHT BROWN FIBROUS PEAT, 5s. 6d. per sack; 5 sacks,

25s.; sacks, 4d. each.

BLACK FIBROUS PEAT, 5s. per sack, 5 sacks, 22s.; sacks,

4d. each.

COARSE SILVER SAND, 1s. 9d. per bushel; 15s. per half

ton; 26s. per ton, in 2-bushel bags, 4d. each.

YELLOW FIBROUS LOAM, PEAT-MOULD, and LEAF-

MOULD, 1s. per bushel.

SPHAGNUM MOSS, 8s. 6d. per sack.

MANURES, GARDEN STICKS, VIRGIN CORK, TOBACCO

CLOTH, RUSSIA MATS, &c. Write for Price LIST.

H. G. SMYTH, F.R.H.S., 21, Goldsmith's Street, Drury

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BENTLEY'S INSECTICIDE.

Is superseding the use of other Insecticides.

Used by nearly all the Leading Gardeners.

1 Gallon, 9s.; $\frac{1}{2}$ Gallon, 5s.; 1 Quart, 3s. 6d.; 1 Pint, 2s.

Testimonials and full particulars upon application.

J. BENTLEY,

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ORCHID PEAT, best quality; **BROWN**

FIBROUS PEAT for Stove and Greenhouse use. **RHO-**

DODENDRON and **AZALEA PEAT.** Samples and Prices to

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TWO PRIZE MEDALS.

Quality, THE BEST in the Market. (All sacks included.)

PEAT, best brown fibrous ... 5s. per sack, 5 sacks for 22s. 6d.

PEAT, best black fibrous ... 4s. 6d. " 5 sacks for 20s.

PEAT, extra selected Orchid ... 7s. 6d. " 5 sacks for 35s.

LOAM, PREPARED COMPOST ... 1s. per bush., 3s. per sack

LEAF, or PEAT MOULD ... (sacks included)

SILVER SAND, coarse, 1s. 6d. per bush., 14s. half-ton, 24s. ton.

RAFFIA FIBRE, best only ... 1s. lb.; 28 lb., 27s.

TOBACCO CLOTH, or PAPER ... 1s. lb.; 28 lb., 27s.

SPHAGNUM MOSS, all selected, 3s. per bush., 15s. per sack.

CHUBB'S "PERFECT" FER-

TILIZER (the Best Food for

all kinds of Plants, Flowers, &c. ... Tins. 7lb. 14lb. 28lb. 56lb. 1 cwt.

Fruits, Vegetables, &c. ... 1/6 3/- 5/- 8/- 14/- 22/-

CRUSHED BONES, or Bone Dust 1/2 2/- 3/- 6/- 12/-

VIRGIN CORK (Best Quality only) ... 3/- 5/6 10/6 17/-

RUSSIAN MATS, BAMBOO CANES, PERUVIAN GUANO,

NITRATE OF SODA, HORTICULTURAL CHARCOAL, &c.

PEAT MOSS LITTER, cheapest and best Bedding for Horses and

Cattle, £2 per ton. Extra large Sample Bales, 6s. each. Also

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COCOA-NUT FIBRE REFUSE (by Chubb's special process),

sacks, 1s. 4d. each; 10sacks, 12s. 6d.; 15sacks, 17s. 6d.; 20sacks,

20s.; 25sacks, 21s.; 30sacks, 27s.; 40sacks, 35s.; 50sacks,

40s.; Truck-load, loose, free on rail, 30s. Limited quantities

of *G. special quality granulated* in sacks only, 2s. 6d. each.

SPECIAL MANURES, for Farmers, Agriculturists, Market

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CHUBB'S "PRODUCTIVE" MANURE, in bags, £3 per ton

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Try it against any other manure, no matter what price.

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Soot and Sewage with other fertilizing agents.

Terms strictly Cash with order. Bankers, Union Bank of London.

CHUBB, ROUND & CO.,

WEST FERRY ROAD, MILWALL, LONDON, E.

PEAT FOR ORCHIDS,

CHOICE PLANTS, FERNS, HEATHS, AZALEAS, &c.

EPPS & CO. are now prepared to offer **PEAT,** as above, of first-class quality, at lowest prices. Send for Samples, Price List and Testimonials. Depot for **HORTICULTURAL SUNDRIES, LOAM, SAND, LEAF-MOULD, SPHAGNUM, COCOA FIBRE REFUSE.**

PEAT MOSS LITTER.

EPPS & CO., Ringwood, Hants.

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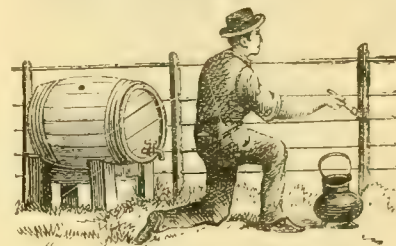
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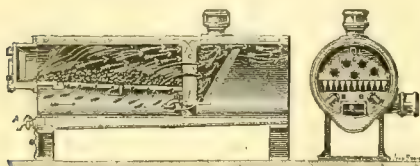
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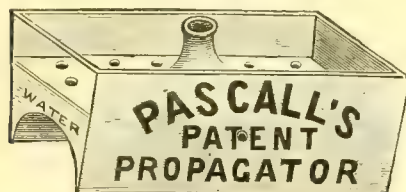


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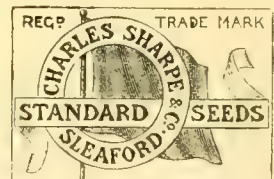
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THE GARDENERS' CHRONICLE,
Vol. III., Third Series, JAN. to JUNE, 1888.
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THE

Gardeners' Chronicle.

SATURDAY, DECEMBER 15, 1888.

HAMPTON COURT GARDENS.

AMONG the few gardens of mediæval England which still remain to us, there are none which can be held to vie in historic and artistic charms with the Queen's palace gardens of Hampton Court. Upon these gardens the skill of many great garden artists has been spent; within the precincts of their walls numerous stirring events have taken place; and the splendours of many successive Courts have been witnessed. We are told by the historian of the palace, Mr. Ernest Law, that it was in these gardens that "Wolsey paced in anxious meditation a few weeks before his fall."

It was in these gardens also that Henry VIII. made love to Anne Boleyn and to Catherine Howard, and George II. to Mrs. Howard and Mary Bellenden. In the Privy Garden we may still walk along the paths on which it was the custom of Queen Elizabeth to take her daily morning walk, or we may sit beneath the bower where Queen Mary sat at needlework with her maids of honour. Nor do the gardens lack literary associations. The Lime trees in the fountain garden have sheltered from the noon-day sun Pope and Hervey, Swift and Addison, Walpole and Bolingbroke.

Notwithstanding, however, all these historic associations of the gardens, no writer has ever attempted to chronicle their past. Mr. Ernest Law has, indeed, given us a few notices relating to the gardens in his charming work, *The History of Hampton Court in Tudor Times*; but these notices are far too scanty, and he has by no means exhausted all the documents which refer to the gardens in those times. The work, how-

* Mr. Law has just published a little guide (price 1s.) to the palace, and at the end of this guide is given a short sketch of the history of the gardens. To this little work the author of the present paper is much indebted.

ever, supplies us with references to some of the original accounts relating to the gardens which still exist in the Record Office and elsewhere, and it is by the aid of these that it is proposed, in the following paper, to give, in a detailed form, a history of the palace gardens.

We naturally go back to the time of Wolsey in recalling the original wealth and splendour of the gardens, but we find them noticed at a very much earlier period. In the report of the Prior of the Knights Hospitallers in England to the Grand Master, in the year 1338, there is mentioned as belonging to the order a "camera" or mansion-house, "gardens and a dove-cot" at Hampton. This mansion-house, Mr. Law has shown, with great probability, stood on the site of Wolsey's palace. We hear little further of the gardens until the commencement of the sixteenth century, when we read of the house being still inhabited by the order, that it had gardens, and that it was occasionally visited by members of the royal family and high ecclesiastical functionaries. One of the royal personages who visited the mansion in the early years of the sixteenth century was Elizabeth of York. She came here, history tells us, "to recruit her health," for the air of Hampton, her physicians agreed, was the best air which could be procured within an easy distance of London. On this visit it is probable that she spent much of her time in the gardens, and we may picture to ourselves the Dowager Queen sitting with her maids in the Rose and Honeysuckle-covered arbours (these were common features in the gardens of those days), or resting under the Pear and Apple trees of the orchard.

In the year 1514—the year in which Cardinal Wolsey's tenancy began—the history of the palace really commences. "No sooner," we are told by Mr. Ernest Law, "did that famous ecclesiastic enter into the possession of the place than he began with characteristic energy to plan the erection of a vast and sumptuous edifice, and surround it with gardens and parks, which were to be an appanage in every way worthy of the princely residence he was projecting." The land which Wolsey bought for his palace, gardens, and park consisted of some 2000 acres, and on this land, in the south-west corner, was situated the old manor-house. Immediately around the house he laid out the gardens and orchards (which he separated by brick walls*), and outside these, to the north-east, he laid out his two great parks. The accounts of expenses incurred for laying out these gardens, which were rendered by Wolsey's head gardener to the clerk of works, are still preserved in the Record Office, but they throw very little light on the plan of the gardens at that time. There are, however, many curious entries for wages of the gardeners employed and for implements used. Some of these entries refer to the shovels, spades, barrows, seeds, and even to the "plants" bought "for the use of my lord's garthing." The head gardener employed was John Chapman—one of the most celebrated gardeners of his time.† The accounts, which were rendered fortnightly, are all signed by him in a very clear hand. This circumstance shows that the gardeners of that time were taken from a superior class. The expenses in 1515 averaged 80s. per fortnight, but this amount was sometimes expanded by the

addition of women to the ordinary staff of labourers, for weeding in the "old garden."*

Although these accounts throw but little light on the manner in which the gardens were laid out, we gain a fair idea as to what they were like at this period from the following lines in the metrical life of Wolsey written by Cavendish:—

"My galleries were fayre, both large and longe,
To walk in them when that it liked me best;
My gardens sweet enclosed with walles strong,
Embanked with benches to sit and take my reſte;
The knottis so enknotted it cannot be expreſſed;
With arbours and alleys ſo pleaſant and ſo dulce
The peſtilent airs with flaviours to repulſe."

Here we have a description of the style of gardening in vogue in England in the opening years of the sixteenth century—the gardens secured by high walls like those described by Chaucer in the *Romaunt of the Rose*: the grass banks some 3 feet high placed all around the walls on which one might sit and rest; the "knottis" or beds in which plants were laid out in different patterns, somewhat like those in our modern so-called carpet-beds; the arbours† or little summer-houses, and the alleys made of trellis-work over which twined or crept the Vine, Rose, and Honeysuckle, and above all, the sweet-scented flowers, which must have made the gardens of that time and of Elizabeth so delightful. In such a garden, we are informed by his biographer, Cavendish, Wolsey used to walk towards evening, "and read his evensong and other divine service with his chaplain." This old garden of Wolsey was situated to the south of the base-court and probably covered the plot of ground now known as the Pond Garden. An orchard is also mentioned in Wolsey's accounts. This was probably situated on the plot of ground afterwards known as the "Ould Orchard," now known as the Wilderness.

Not many years passed before Cardinal Wolsey was banished by Henry VIII. to Esher, and he had to give up the palace and gardens to the king. This was in 1529, and immediately the king gave orders "for enlarging and improving the palace and its surroundings." It was not, however, till 1530 that any large alterations were made in the gardens. In the early part of that year a large number of labourers were employed for "bringing the earth and manure" to the Privy Orchard.‡ A number of orchard trees were then planted, and under them were set "sixteen bushels of Strawberry roots."§ In planting-out the trees little spaces appear to have been left here and there, which were freely open to the sun. In the centre of each of these open spaces was fixed a "brasyn sundial" and seven of these are entered in the accounts as having been bought for this purpose of a "clockmaker of Westmynster."||

(To be continued.)

PINUS LARICIO.

So much has been said in these columns of late years respecting the Corsican Pine and its near allies (see especially Dec. 15, 1883, Jan. 5, and Feb. 16, 1884), that it is unnecessary now to do more than refer the reader to them. In the course of these articles mention was made of the fine tree near the Kew Green entrance gateway to the Royal Gardens at Kew. The tree, of which we now give an illustration (fig. 97), forms a conspicuous object from a distance, though, unfortunately, its leader has been destroyed. According to a statement of the late veteran Curator, John Smith (*primus*), in the *Garden*, the tree in question was brought from the South of Europe and planted, in 1814, by Mr. R. A. Salisbury, a noted botanist of his time. In 1825 the tree was 20 feet high, and in 1885 it had attained a height of 88 feet, and was 12 feet in girth at the base. A cone and a shoot are shown on p. 705. The present height of the tree is 91 feet; spread of branches, 60 feet; and stem girth at 4 feet from the ground, 9 feet.

* Chapter House Accounts, C. 5, f. 695, 811, &c. This mention of the "old garden" shows that Wolsey did not entirely alter the surroundings of the old manor-house.

† In the accounts preserved in the Record Office (C. 5), is the following item relating to the arbour of Wolsey: "for twigges to bind the arbour, *vid.*"

‡ Chapter House Accounts, C. 2, f. 422.

§ *Ibid.*, f. 123.

|| *Ibid.*, f. 401.

NEW OR NOTEWORTHY PLANTS.

CATASETUM GARNETTIANUM, Rolfe, n. sp.

This little gem of a *Catasetum* is now flowering in the Kew collection, the whole plant being under 6 inches high, and its wants seem to be amply provided for within the limits of a shallow pan of about 3 inches diameter, in which it is suspended. It was presented in February of the present year by P. F. Garnett, Esq., of Aigburth, near Liverpool, with the information that it was collected in some locality in the vicinity of the River Amazon. It is allied to *C. barbatum*, Lindl., and in general aspect is much like a miniature edition of this plant. The pseudobulbs in the imported plants were conical, 2 inches long, and with five black rings; but in the two growths since made they are compressed-ovate, 1 inch long by half an inch broad, and bearing three leaves. It may, however, be noted, that while the new pseudobulbs are not fully developed, they are strong enough for each to throw up a raceme almost as strong as one sent from the wild habitat. The leaves are lanceolate, 4 inches long by 6 to 8 lines broad, acute, and a little undulate. The erect peduncle equals the leaves, and has four sheathing bracts below the flowers, while the flowering bracts are ovate; one raceme bears seven flowers, the other four, while the wild raceme appears to have had nine; the pedicels three-quarters of an inch long, the diameter of the flower, from the tip of the upper sepal, 1½ inch, and the colour very light green, heavily blotched with dark chocolate-brown, the blotches somewhat transversely arranged, and the lip white. Sepals lanceolate-linear, acute, 10 lines long, concave. Petals similar, but slightly convex, and a little reflexed. These are subparallel with the upper sepal, as in *C. callosum*, while the lateral sepals make an angle of about 90° with each other. Lip three-quarters of an inch long, linear, from a somewhat broader base, the apex divided into about seven somewhat diverging bristles, a similar number of shorter ones on either side near the base, and some half-dozen others on the margin below the middle. A blunt conical spur is situate near the middle, and a strong curved horn a quarter of an inch high on basal angle. Under side of lip faint green, with a few reddish-purple spots; column light green, antennæ slender, subparallel. It is a singular and very elegant little plant. *R. A. Rolfe.*

TRICHOSMA SUAVIS, Lindl.

This name being accepted and well known in the gardening world I retain it, though the plant has no genuine marks of distinction from *Eria*, as Dr. Griffith, myself, and finally Dr. Lindley stated (see contributions to *Indian Orchidology*, ii. *Eria*, § VI.). The dark brown lines on the white ground of the lip remind one of *Cœlogyne*, though a side view of the flower shows the most distinct *Eria* or *Maxillaria* shape. Dr. Lindley himself at first called it a *Cœlogyne*, and proposed his genus *Trichosma* later, cancelling the original name himself, in accordance with my opinions.

I have now at hand a little wonder of beauty, a trilabellia, as I call it, a tripetalia would likewise deserve the name of peloria. If the word peloria be used one does not know which of the two, sepals or petals, is intended. The three petals have the same colour and the keels of the lip, but there is the single mark of distinction that they are not trifid, but entire. I have to thank for this most agreeable surprise our enthusiastic orchidist, Mr. Fred. Tautz, Goldhawk Road, London, whose collection is so rich in rare and well-grown Orchids. *H. G. Rehb.f.*

CYPRIPEDIUM INSIGNE (Wall.) SANDER & SONS.

Baron von Schroder had the kindness to send me this surprisingly beautiful novelty, which was imported with other varieties by Mr. F. Sander, and dedicated by him to Mrs. Sander, a great lover of Orchids. It is very beautiful; the odd sepal has the upper part white, the white colour descending on

* Chapter House Accounts, C. 5, f. 721.

† John Chapman was first employed by Wolsey as gardener of his palace at Kingston. He was then (in 1515) removed to Hampton Court, and very soon after was promoted to the position of head gardener. When Henry VIII. took possession of the palace he was again promoted—this time to the position of the "king's head gardener," with a salary of 12*l.* a year. He died about the year 1540.

both sides on to the margin. The lower part is light yellowish-green, with a few small brown spots on each side of moderately dark tint. The broad connate sepal is of a light yellow, with two very small brown spots at the base. Petals nearly undulate, rather broad and blunt, sulphur-coloured. Lip

thing like it before. It was kindly sent to me by Mr. Horsman, of Colchester, whose name it justly bears.

Its general floral character may be indicated by stating its narrow, and yet not too narrow, shape. The odd sepal is blunt, cuneate-oblong, and the

ZYGOPETALUM MARGINATUM, *Rehb. f.*

A plant of this old but apparently rare species is now flowering in the Kew collection, having been sent from New Grenada by Patin. It belongs to the section Warscewiczella, and is also known as *W. marginata*. It grows 6 inches high, and its narrowly cuneate-oblong leaves are flabellately arranged, as in this section of the genus. Its flowers are solitary, large, and fragrant, the colour white, with a broad band of maroon-purple round the lip, a few streaks of the same colour on the curiously toothed disc, and three irregular violet lines in front of the same. The incurved side-lobes just meet at their tips, which is one of the characters by which it may be distinguished from the closely allied *Z. velatum*. It was introduced in 1853 by Messrs. Jackson, of Kingston, and is described in these columns at p. 647 of that year, as *Warrea quadrata*, by Dr. Lindley. It is also well figured at t. 4766 of the *Botanical Magazine*, under the same name, Sir William Hooker having obtained a plant from the same source. *R. A. Rolfe.*

DISA CULTURE.

Now that some of the rarer Disas are flowering in our gardens, a few notes as to a general plan of culture for the different sections, and especially of the grassy-leaved ones, including *graminifolia* and *D. lacera*, figured in the *Gardeners' Chronicle*, p. 664, may be of use in helping to secure a better understanding of these beautiful plants. For years I have grown Cape terrestrials, and have never lost an opportunity of getting information from my numerous South African correspondents as to their habits and surroundings in their native home. The result of these experiences conclusively prove to me that before success can be attained with certainty, the genus *Disa*, for cultural purposes, must be divided into two distinct sections.

Section 1 may be called the *grandiflora* division, as that species is best known to us; under it come *D. uniflora*, commonly known as *grandiflora*, *D. racemosa* (illustrated in the *Gardeners' Chronicle*, May 12, 1888), *D. venosa*, which I have now secured after years of steady endeavour; *D. sagittalis*, *D. cornuta*, *D. crassicornis*, *D. polygonoides*, and others of like habit. These are leafy plants inhabiting more or less marshy places, and they will all thrive grown together with *D. grandiflora* (*uniflora*), with some little differences which the following observations as to their mode of growth may point out:—*D. grandiflora*, *D. racemosa*, *D. venosa*, and *D. sagittalis* are strictly evergreen, and are always growing either above or below ground; they increase by the old tubers producing new ones, and also by leafy growths borne on stolons or running underground stems. These require keeping moist all the year with but little variation. Some time in October is the best for repotting them, and the material used, peat, sphagnum moss, crocks, and charcoal, and some think added loam and fibre beneficial.

D. crassicornis, *D. cornuta*, and *D. polygonoides* have no stolons, but perpetuate themselves by direct increase from tuber to tuber after the manner of *Satyrion*, or by seed—a mode of propagation which is a safe and certain means of guarding against destruction to the old stock, which is much resorted to by South African terrestrial Orchids in their wild state. *D. crassicornis*, one of the handsomest and sweetest of the genus, grows on the Boschberg, and in other places, at an altitude of over 4000 feet, principally in loamy soil, and in moist shady situations, where it frequently gets ice and snow about it. Under cultivation I find it take kindly to turfy-yellow loam and a little sphagnum moss, and this may be one of the essentials to its good culture.

D. polygonoides and *cornuta* grow in boggy, sandy peat, and these two last lose their foliage after flowering, and for a time should have a limited supply of water, but not be kept quite dry for the new tubers immediately begin to grow after

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FIG. 97.—THE CORSICAN PINE, *PINUS LARICIO*, AT KEW. (SEE P. 692.)

darker sulphur-coloured. Staminate bright yellow, with the knob of an orange colour. Peduncle and bract light green. This is decidedly a most remarkable plant, and a fresh ornament to the collection of Baron von Schroder. *H. G. Rehb. f.*

CYPRIPEDIUM INSIGNE (Wall.), var. *HORSMANIANUM*, n. var.

A remarkably elegant variety. I never saw any-

upper part is quite white, the lower like the remainder of the flower, has likewise the usual colours. The lower sepals are narrow, oblong-ligulate, acute. The petals are directed forwards, and are spreading at the top. The lip is very remarkable in having a beak in the middle of the mouth, and rather low side-partitions. In these days of *Cypripediums* it might prove exceedingly valuable for hybridisation. *H. G. Rehb. f.*

the old foliage decays. All the above grow well together in a cool-house.

Section 2.—Now we come to the grassy-leaved section whose greatest misfortune, I believe, has been their generic name, *Disa*, causing gardeners to come to the conclusion that they require growing with and on the same lines as the beautiful *D. grandiflora*, whose culture is now well understood by so many. The grassy-leaved section comprises *D. graminifolia*, *D. lacera*, *D. barbata*, *D. lugens*, *D. venusta*, *D. spatulata*, *D. Zeyherii*, and *D. ferruginea*, and others, the two last named having broader and stiffer leaves than the others named, which are rather hard and rush-like. All these grow in very different situations to the *grandiflora* section, and are always found in the open, growing with Heaths, *Agapanthus*, &c., and generally in sandy peat of precisely the same quality as that used for potting Heaths and New Holland plants in this country. The presence of the Heath with this section of *Disa* should in itself be a sufficient guide to their culture, and those who grow the grassy-leaved and blue *Disas* in the same way as *D. grandiflora* need only ask themselves how Cape Heaths would fare under such treatment. None of the *Disas* of this section have stolons, but increase by the old tubers making one or more new ones, the progress of which I have watched by keeping the tubers in sphagnum and uncovering and inspecting them frequently. This section of *Disa* will grow with *D. grandiflora* if placed on a shelf or in some situation where the air is not too moist, or they may be grown in a cold frame or with Cape bulbs. They are all deciduous, and the main point of difference from the evergreen section is that they require a distinct period of rest and even absolute drying off at the end of the summer or at any period commencing six weeks before the flowering time of each species; indeed, it is the neglect of this drying off which has been the chief reason of the blue *Disas* not flowering in gardens, for I find that so tenacious of life are they that they survive healthy in the tubers under the most inconsistent treatment, although the flowers are not produced. In point of fact, they require a season of growth and rest, like the *Nerine*; and, like the *Nerine*, a drying off until the flower-spikes appear is necessary, otherwise the energies of the plants are diverted to the object of growth instead of the production of flowers. All this section of *Disa* will do best potted in sandy peat, and kept below the rim of the pot as in ordinary plants, and, above all things, a pure clear air not heavily charged with moisture is essential. Generally speaking, the grassy leaved *Disas* are winter-flowering.

A South African correspondent says:—"In the case of the blue *Disa* the flower-spikes always precede the leaves. It comes into flower in South Africa in December, January, and February, which are the hottest and driest months; after being in flower six or eight weeks the flowers fade and up come the leaves, which remain green for about six months." With respect to the remarks about their flowering in the hot weather, we must recollect that our winter is the Cape summer, but as bearing on this I learn that a great number of African terrestrial Orchids grow in shady places, or, as in the case of these grassy-leaved *Disas* and *Satyriums* on southern slopes, which, we must also remember, is the shady aspect in the Cape. With the *Disas* as with other Orchids, we must not consider the question of heat in the winter, or attempt to imitate what they get at home, as we can better secure the good culture of the plants by acclimatisation to our temperate culture. In my opinion a clear light, but not direct sunlight, in the summer, and a clear pure air, are of the highest importance to the culture of these plants; and when the theory of proper management is grasped, all of them I believe can be as well grown by the amateur with a cold frame as by the gardener with greater resources; indeed I have several species, including a large specimen of *D. racemosa*, with fifty or sixty growths which have never known a single degree of artificial heat since they were imported eighteen months ago.

In a future number I will give a few notes of the culture of *Lissochilus*, *Disperis*, *Huttonaea*, &c., but I must here state that I believe by far too much water is given to all Cape terrestrial Orchids (except the marsh-growing ones) under cultivation, and that they succeed best when watered simply as Heaths or other plants. *James O'Brien, Harrow-on-the-Hill.*

PLANTS CERTIFICATED

DURING THE HALF YEAR ENDING DEC. 31, 1888.
BY THE ROYAL HORTICULTURAL SOCIETY.

The following received First-class Certificates:—

<i>Adiantum versailleense</i> ...	Williams, Aug. 28.
" <i>Waltoni diffusum</i> ...	Ware, July 10.
<i>Allium pedemontanum</i> ...	Ware, July 10.
<i>Angulosa Ruckeri alba</i> ...	C. Dorman, July 24.
<i>Aster Townshendi</i> ...	Ware, Sept. 25.
<i>Beet (ornamental) McGregor's Favourite</i> ...	Williams, Sept. 25.
<i>Begonia C. Showell</i> ...	Cannell, Aug. 14.
" <i>General Chichester</i> ...	Cannell, Oct. 9.
" <i>Mrs. Lascelles</i> ...	Cannell, Aug. 28.
" <i>Mrs. Lynch</i> ...	Cannell, Aug. 28.
" <i>Mrs. Stark</i> ...	Cannell, Oct. 9.
" <i>The Lady</i> ...	Cannell, Aug. 28.
<i>Campanula isophylla alba</i> ...	Ware, Aug. 28.
<i>Canina Admiral Courbet</i> ...	Cannell, Aug. 28.
" <i>Capricieux</i> ...	Cannell, Aug. 28.
" <i>Francesque Morel</i> ...	Ware, Aug. 28.
" <i>Geoffroy St. Hilaire</i> ...	J. Veitch & Sons, Sept. 25.
" <i>Paul Bert</i> ...	Cannell, Sept. 25.
" <i>Madame Just</i> ...	Cannell, Aug. 28.
" <i>Ulrich Brunner</i> ...	J. Veitch & Sons, Oct. 9.
<i>Carnation R. H. Elliot</i> ...	Laing & Mather, Aug. 14.
" <i>Elaine</i> ...	J. Douglas, July 24.
" <i>Germania</i> ...	Hooper & Co., July 10.
" <i>Madame Carle</i> ...	May, Sept. 11.
" <i>Scarlet Bedder</i> ...	K. Dean, July 24.
<i>Carpenteria californica</i> ...	Miss Jekyll, July 10.
<i>Cattleya Harrisii</i> ...	Baron Schroder, Oct. 23.
" <i>Lambertii</i> , hybrid ...	Baron Schroder, Oct. 23.
<i>Chrysanthemum Avalanche</i> ...	G. Stevens, Nov. 13.
" <i>Capucine</i> ...	J. R. Pearson & Sons, Oct. 23.
" <i>Elise</i> ...	Stevens, Oct. 9.
" <i>E. Molyneux</i> ...	G. Stevens, Oct. 23.
" <i>Lincoln's Inn</i> ...	R. Owen, Oct. 23.
" <i>Magicienne</i> ...	R. Owen, Oct. 23.
" <i>Mr. Garner</i> ...	G. Stevens, Nov. 13.
" <i>Mrs. H. Hawkins</i> ...	Hawkins & Bennett, Sept. 11.
" <i>Sunflower</i> ...	W. Holmes, Oct. 23.
<i>Cœlogyne Sanderiana</i> ...	Baron F. de Rothschild, July 10.
<i>Croton Alghurii Gem</i> ...	K. & Son, Aug. 14.
<i>Dahlia Admirable</i> ...	Turner, Sept. 25.
" <i>Agnes</i> ...	Turner, Sept. 25.
" <i>Beauty of Brentwood</i> ...	West, Aug. 28.
" <i>Duchess of Albany</i> ...	Cheal, August 28.
" <i>Eurydice</i> ...	Keynes, Williams & Co., Sept. 25.
" <i>Honoraria</i> ...	Keynes, Williams & Co., Sept. 25.
" <i>Hugo</i> ...	Turner, Sept. 25.
" <i>John Cooper</i> ...	Humphries, Sept. 25.
" <i>Juliette</i> ...	Turner, Sept. 25.
" <i>Lady Montefiore</i> ...	Cheal, Sept. 25.
" <i>Little Darkie</i> ...	Keynes, Williams & Co., Sept. 25.
" <i>Little Ethel</i> ...	Keynes, Williams & Co., Sept. 25.
" <i>Lothair</i> ...	Turner, Sept. 35.
" <i>Matthew Campbell</i> ...	Keynes, Williams & Co., Sept. 25.
" <i>Maud Fellowes</i> ...	Turner, Sept. 25.
" <i>Mikado</i> ...	Girdlestone, Sept. 11.
" <i>Panthea</i> ...	Keynes, Williams & Co., Sept. 25.
" <i>Victoria</i> ...	Cheal, August 28.
" <i>Vivid</i> ...	Turner, Sept. 25.
" <i>Whisper</i> ...	Keynes, Williams & Co., Sept. 25.
<i>Delphinium Horus</i> ...	Kelway, August 28.
" <i>Prince of Naples</i> ...	Kelway, July 10.
" <i>Ustane</i> ...	Kelway, July 10.
<i>Dianthus sphenolobus</i> ...	R. Dean, Sept. 11.
<i>Eremurus Olge</i> ...	Ware, Sept. 11.
<i>Escallonia Philippiana</i> ...	J. Veitch & Sons, July 10.
<i>Gaillardia splendissima ple-nissima</i> ...	Kelway, Aug. 28.
<i>Gladiolus accia</i> ...	Kelway, Aug. 28.
" <i>Besler</i> ...	Kelway, Sept. 11.
" <i>Bullion</i> ...	Kelway, Aug. 28.
" <i>Castro</i> ...	Kelway, Sept. 11.
" <i>Cebes</i> ...	Kelway, Aug. 28.
" <i>Magas</i> ...	Kelway, Aug. 28.
" <i>Mago</i> ...	Kelway, Aug. 28.
" <i>Nicon</i> ...	Kelway, Aug. 28.
<i>Gymnogramma Dearcei robusta</i> ...	J. Veitch & Sons, July 10.
<i>Harpalum rigidum semi-pileum</i> ...	Ware, Sept. 25.
<i>Iris Enterprise</i> ...	Gordon, July 24.
" <i>Kaiser Wilhelm</i> ...	Gordon, July 24.
<i>Lælia Amesiana</i> x ...	Baron Schroder, July 24.
" <i>porphyreus</i> ...	Baron Schroder, Oct. 9.
" <i>Victoria</i> x ...	Baron Schroder, Nov. 13.
<i>Lastrea montana ramocornans</i> ...	Birkenhead, July 24.
<i>Lilium nepalense</i> ...	Low, Sept. 11.
" <i>Wallichianum</i> ...	Ware, Sept. 25.
<i>Nerine excellens</i> ...	Ware, Sept. 25.
<i>Nepenthes Dicksoniana</i> x ...	J. Veitch & Sons, Oct. 9.
<i>Nothoclena Muelleri</i> ...	Birkenhead, July 24.
<i>Odontoglossum Karwinski</i> ...	Vanner, Aug. 28.
<i>Oncidium Mantinii</i> ...	E. Crook, Oct. 23.
" <i>ornithorynchum</i> ...	J. Veitch & Sons, Oct. 23.
	Williams, Sept. 11.

<i>Oreocome Candollei</i> ...	C. Noble, July 24.
<i>Ostrowskya magnifica</i> ...	J. Veitch & Sons, July 10.
<i>Papaver orientale</i> var. <i>Blushing Queen</i> ...	Ware, Aug. 14.
<i>Primula Swanley Pink</i> ...	Cannell, Dec. 11.
<i>Prunus domestica variegata</i> ...	Paul & Son, July 10.
<i>Pteris tremula elegans</i> ...	H. B. May, July 10.
<i>Rhododendron Parity</i> ...	J. Veitch & Sons, July 24.
" <i>Sourvenir de J. H. Mangies</i> ...	J. Veitch & Sons, July 10.
" <i>Yellow Perfection</i> ...	J. Veitch & Sons, Oct. 23.
<i>Romneya Coulteri</i> ...	Ware, Sept. 11.
<i>Rose Cheshunt Scarlet</i> ...	Paul & Son, July 24.
" <i>Duchess of Albany</i> ...	Paul & Son, July 24.
<i>Saccolabium celeste</i> ...	Williams, July 24.
<i>Scolopendrium vulgare cristatum</i> ...	Birkenhead, July 24.
<i>Skimmia Formani</i> ...	Foreman, Dec. 11.
<i>Sturtia pseudo-Camellia</i> ...	J. Veitch & Sons, July 24.
<i>Tritonia aurea maculata</i> ...	O'Brien, Sept. 11.

VEGETABLES.

<i>Cabbage, Ellam's Dwarf Early</i> ...	J. Veitch & Sons, July 9.
" <i>Express</i> ...	Vilmorin & Co., July 9.
" <i>Myatt's Early Market</i> ...	Watkins & Simpson, July 9.
<i>Chicory Asparagus</i> ...	Willard, Dec. 11.
<i>Onion Southport Red Globe</i> ...	J. Veitch & Sons, Nov. 13.
<i>Pea The Abbot</i> ...	Hurst & Son, July 26.

FRUIT.

<i>Melon Glenhurst Perfection</i> ...	C. J. Waite, Sept. 25.
<i>Raspberry Superlative</i> ...	J. Veitch & Sons, July 26.
<i>Stachys tuberosa</i> ...	Carter & Co., Nov. 13.
<i>Strawberry Countess</i> ...	July 9.
" <i>King of the Earlies</i> ...	Laxton, July 9.
" <i>Lucas</i> ...	July 9.
" <i>Noble</i> ...	Laxton, July 9.

BOTANICAL CERTIFICATES.

<i>Disa graminifolia</i> ...	Tautz, Sept. 11.
" <i>lacera</i> ...	Smea, Aug. 28.
<i>Lælia monophylla</i> ...	Williams, Sept. 11.
<i>Trichocentrum Ella</i> ...	White, Aug. 28.

ORCHID NOTES AND GLEANINGS.

CŒLOGYNE MASSANGEANA.

ALTHOUGH not long introduced, this species has become a much valued one; certainly its merits entitle it to be so, for it grows and blooms freely, and its flowers are extremely handsome, and continue a long time in perfection. The pendent scapes are from one to 2 feet long, sometimes producing considerably over twenty flowers, and as each of these is from 2 to 3 inches across, a flowering plant when suspended has a very pleasing effect. The sepals and petals are narrow, oblong, and of a light, almost transparent, yellow; the lip is three-lobed, the lateral lobes on the inner side being of a rich maroon-brown beautifully veined with yellow; the central lobe is reddish-brown at the front, having a margin of creamy-white and three yellow ridges traversing the whole length. This Orchid is best grown in a basket of peat fibre and sphagnum, and requires a position at the warm end of the *Cattleya*-house. It is figured in vol. xvii. of the *Gardeners' Chronicle* (March 18, 1882). *W. B.*

CŒLOGYNE GARDNERIANA.

This handsome species is quite distinct from the other *Cœlogyne*s in cultivation, and worth growing on account of its flowering during the winter. It has dark green, somewhat flask-shaped pseudobulbs each bearing two broad lanceolate leaves. The flowers, borne on drooping racemes, are pure white, with the exception of the apical lobe of the lip, which is yellow. The flowers do not open widely, and each is clasped at the base by a large, stout, greenish bract; the sepals and petals are narrow, about 2 inches long. It is a native of Khasya, having been originally introduced about fifty years ago. It succeeds well grown in the *Cattleya*-house in a compost of peat and sphagnum. *W. B.*

DISA (GRANDIFLORA) UNIFLORA.

The very interesting notes on *Disas* in last week's *Gardeners' Chronicle* recall to my mind an experiment I tried in their culture last summer, with the view of testing their behaviour under outdoor treatment. About thirty small plants were placed in a cold frame the second week in May. Towards the middle of June the light was taken entirely off, and the plants exposed to the weather day and night, with the exception of slight shade in sunny weather. On October 1 we had 13° of frost, to which the plants were exposed with only the glass protection of a cold frame. Their foliage and the soil in their

pots was frozen quite hard, and I fully expected to see them all killed; but after adopting the usual treatment with frozen plants, I was pleased to see they had suffered no harm, and are now as healthy as those grown in the usual way. The only value this experiment possesses is that it shows that *D. grandiflora* may be successfully grown in a cold frame, and also that a few degrees of frost will do it no harm, if grown under cold treatment. *Owen Thomas.*

PLATYCLINIS UNCATA.

This species and its allies are better known in gardens under the name *Dendrochilum*. Although individually the flowers are small, and not brightly coloured, the genus contains some of the most elegant of Orchids. Of the above species there is a plant now in flower at Kew; the flowers are pale-green, and not more than half an inch across; but nothing could be more graceful than the numerous, arching racemes springing from the apices of the small pointed pseudobulbs. The flowers are arranged in two opposite rows, and forty or more may be counted on a scape. It is a native of the Philippine Islands, whence it was introduced by Messrs. Low. It should have a moist position in the intermediate-house.

P. Cobbiana is of a similarly graceful habit; its leaves are larger, and the lip is orange-yellow. It is also found in the Philippines.

ACAMPE DENTATA, Lindl.

This appears to be the showiest species of this singular little genus, and a well-bloomed specimen in the Kew collection shows it to be at least equal to some species of *Saccolabium*, to which the genus is closely allied. The plant is 8 inches high, the leaves distichous, linear-oblong, and unequally bilobed. The panicle is erect, 6 inches high, with numerous branches, and the flowers, which much resemble those of *A. papillosa*, are yellow, spotted and barred with brown inside, straw coloured and unspotted outside, and the lip white. The plant bears three racemes, and although the flowers are small, still, seen, in the mass, they are quite as effective as some others more commonly met with in collections, and far more so than any other *Acampe* I have seen. It is a native of Sikkim, and has also been reported from Moulmein, though I have not seen wild specimens from the latter. *R. A. R.*

PLANTS IN FLOWER AT KEW.

The following are the most interesting of the plants flowering this week at Kew:—

Randia macrantha.—A large-flowered shrub, very similar to *Gardenia Stanleyana*, now referred to *Randia*. The former has oblong shining green leaves in fascicles, the largest 6 inches long by 2 inches broad. The flowers are terminal on the stronger branches, with a very short pedicel, six linear calyx lobes three-quarters of an inch long, and a narrow tubular corolla, 9 inches long, the lower 6 inches no thicker than a goosequill, widening towards the mouth, where it becomes 1 inch across; the five ovate corolla lobes are spreading and slightly recurved, pure ivory-white. The upper part of the flower is not unlike the flower of *Lilium longiflorum*. The Kew plant is 5 feet high and bears eight flowers. *R. Stanleyana* is similar in habit, with flowers of a creamy-yellow colour blotched with dark brown. The genus is a large one, and is widely distributed in the tropics. Many of the species bear small insignificant flowers.

Strelitzia Nicolai.—The large specimen of this in the Palm-house is again in flower. It is 25 feet high, with a naked stem, a head of large distichous leaves, and two scapes, one on each side of the stem about 15 feet from the ground. The large boat-shaped deep purple bracts, 1 foot long and 3 inches deep, with a cluster of flowers projecting from them, and the white sepals and blue halberd-like petals, are exceedingly interesting. A very copious secretion of a gum-like substance almost fills the bract by the time the

flowers are all expanded. There is little difference between this and *S. augusta*.

Impatiens Hookeriana.—This is one of the handsomest of the tropical species of *Impatiens*, and it would become as popular in gardens as *I. Hawkeri* and *I. Sultani* if it flowered more freely than it does. The Kew plant tried to bloom last year but the buds were destroyed by the fogs. This year, however, it has escaped, and it is now gay with numerous racemes of large prettily marked flowers. It is 2 feet high and nearly a yard through; each branch bears two or more racemes, and these have each two or three flowers $1\frac{1}{2}$ inch across, the segments recurved, pure white, the two lower ones blotched and spotted with crimson, and suggesting the lip of an Orchid. The spur is narrow, 2 inches long, and curved. This species lately flowered at Glasnevin, as also did the richly coloured, quaint-flowered *I. Jerdoniae*, of which Mr. Moore possesses a very fine variety. Both these species are Indian and tropical.

Hibiscus suratensis.—This species has lately been sent to Kew, by the Rev. H. Goldie, of Old Calabar, well-known as the introducer of the gigantic-flowered *Aristolochia Goldieana*. The *Hibiscus* is a thin-stemmed, many-branched plant, covered with soft hairs, and scattered, short, brown prickles, which extend even to the principal nerves of the leaves. These latter are long petioled, variously lobed and toothed, from 1 to 2 inches across. The flowers are freely produced on short peduncles from the axils of the leaves. A large involucre of very extraordinary character subtends each flower. It is composed of numerous narrow, spoon-shaped bracteoles, each having a long spur-like filament rising from the "spoon-blade," and pointing towards the flower. The petals form a cup 2 inches across, and coloured bright yellow, with blotches of crimson at the base. This species is very near *H. furcatus*, and both of them are common in the tropics of Asia, Africa, and Australia.

Befaria glauca.—This handsome little greenhouse shrub is likely to prove useful as a winter-flowering plant. The Kew plants were raised from seed sent from Bogota, in 1879, the finest plant flowering when about seven years old. But they are flowering more freely now, and, like all plants raised from seed, when once they get to a flowering age cuttings from them will probably flower almost as soon as struck. The *Befaria* is about 3 feet high, and bears a terminal head of flowers which are arranged on several erect racemes. Each flower is about 1 inch across, shallow, bell-shaped, with prominent stamens and stigma, and coloured pale pink. Probably this plant would hybridise with *Rhododendron*. It may be seen in the Temperate-house.

Solanum grandiflora continues to develop its large funnel-shaped creamy-white flowers in the Succulent-house. Apparently this species varies considerably in the form of its flowers, as well as in colour. To bloom it a poor sandy soil appears to answer better than a rich compost, the latter inducing too vigorous and sappy a growth for flowers.

Canarina campanula is a delightful old greenhouse plant, which flowers all through the winter, and goes to rest during summer. It has a large tuberous rootstock, and annual many-branched stems with opposite hastate leaves, 2 inches long, and bell-shaped nodding, brown-yellow flowers like those of the common Canterbury Bells. It is exceptional amongst Campanulaceæ in the colour of its flowers. The rootstock is said to be used as food in the Canary Islands, where the plant is a native.

Begonia Scharffii.—This plant is referred to here for the purpose of correcting an omission in the description lately published in the *Botanical Magazine*, where a figure of *B. Scharffii* lately appeared (t. 7028). It will be remembered that at one of the meetings of the Royal Horticultural Society held in July a large-leaved noble-flowered *Begonia* was shown from Kew, under the name of *B. Haageana*. Plants and cuttings from this have since been distributed under the latter name, which had been given in compliment to the senior member of the firm of Messrs. Haage & Schmidt, Erfurt, who sent the plant to Kew. The name was altered by Sir Joseph Hooker, at the request of Messrs. Haage & Schmidt. Readers will therefore understand that *Begonia Scharffii* is the proper name of the plant hitherto known as *B. Haageana*. Plants of it are still in flower in the Begonia-house.

Protea cynaroides and *P. nana*, two very interesting Proteads from the Cape, will shortly flower here. *W.*

THE AGRICULTURAL RETURNS FOR 1888.

In the (for the present) shelved Bill designed to assist in the establishment of a Ministry of Rural Affairs, designated the "Board of Agriculture," we find in clause 11 a small section which says:—"The expression 'agriculture' includes horticulture and forestry." It is quite natural, therefore, to look in a Government agricultural return for such matters as we are interested in. Truth to tell, we are not in this instance disappointed. From beginning to end the 200 odd pages are brimful of interest and information to those who care for the manipulation of figures. So far as memory serves us, there appears to be a difference in the tabular arrangements here and there compared with those of preceding years, which may make certain conclusions more troublesome to arrive at; but for the general reader the present arrangement of crops in counties, &c., appears to be very concise and compact.

NURSERIES, WOODS, PLANTATIONS, &c.

In the "Editorial Summary" it is stated under this head that in land used by nurserymen for the growth of trees, shrubs, &c., the returns show a slight decrease from the acreage of 1887. The land used by nurserymen in England amounts to 10,496 acres compared with 10,669 in 1887; Wales foots up 292 against 277 acres; and Scotland, 1477 acres against 1532 last year. Possibly that decrease is only temporary, owing to the rapid development of our larger cities and towns, and the rooting up of old concerns. Next year's figures will very likely tell a different tale.

Of the average of woods and plantations a special return has been obtained for this year. The last return was made in 1880, in which certain corrections, due to subsequent inquiries, were made and inserted in the returns published in 1881. Since that date the acreage appears to have increased in Great Britain from 2,458,300 acres to 2,560,700 acres, or nearly 4·2 per cent. In many of the northern counties and in Scotland large additions are recorded. The increase in England has been nearly 52,300 acres; in Wales, 4800 acres; and in Scotland 45,400. The total increase in Great Britain has been about 102,400 acres.

SMALL FRUIT CULTURE.

Under this heading we note that the extent of land returned as under the culture of small fruit, such as Gooseberries, Currants, Strawberries, &c., whether in orchards or in market gardens, amounts this year to 36,700 acres. In many countries the collecting officers report that the practice among farmers of appropriating land to the growth both of fruit and vegetables has further extended in order to meet the demand for them; and though the additional quantities of land may, as regards individual occupiers, be relatively small, in the aggregate they become considerable. It is stated in a report from the county of Norfolk that from only one small station on the Eastern and Midland Railway nearly 100 tons of fruit are sent weekly to Manchester and other towns in the North of England at certain periods of the year; and this is cited as a single illustration only of what is being done throughout that county.

ORCHARDS, MARKET GARDENS, &c.

A decrease is recorded this year of 3056 acres in the area of orchards in Great Britain, it being now 199,178 acres; but the smaller extent shown must be considered in connection with the newly ascertained acreage of small fruit, the apparent deficiency having doubtless arisen from part of the land which should last year have been returned as growing small fruit having then in some cases been placed in the orchard column of the schedule sent out to occupiers, &c. The acreage now returned may, it is confidently believed, be taken to represent more accurately than in any preceding year, the actual area so covered; the land under grass, or upon which small fruit is grown, or which is left fallow in orchard, as may happen to be the case, being included under these several heads in the returns.

The acreage under market gardens is this year 67,383 acres as compared with 62,666 in 1887—an increase of 4717 acres.

IMPORTS.

From a statement showing the value of products imported into this country we extract the following few lines, which may be read in connection with our monthly summary of reports under the heading of "stock-taking":—

Imports enumerated.	1886.	1887.	Difference.
Fruit (raw), including Apples, &c., and other fruit not otherwise described	3,633,650	3,273,904	—361,746
Vegetables—including Potatoes, Onions, and "unenumerated"	1,846,645	2,191,947	+345,302

From a statement showing the values of certain imports we extract the following "yearly averages" under the heading of "fruits, nuts, and vegetables":—

Years.	Value.	[Years.]	Value.
	£.		£.
1861—65	2,044,547	1876—80	6,934,185
1866—70	2,469,991	1881—85	6,352,003
1871—75	4,352,181	1886—87	6,253,035

Possibly to some it may appear rather late in the day to give these figures, seeing how near we are to the close of 1888, but they will not prove so to such as make a note of our monthly statements and are interested in the thorough utilisation of English soil.

The compiler concludes his introductory remarks as follows:—"It may not be safe to say that the lowest ebb in movement of prices has been reached, but there are indications of early advance, if no monetary crisis or business convulsion should intervene, of which there are no immediate indications. An interest that represents £480,000,000, and, including horses and other animals in cities, not far from £600,000,000, is one of the very first agricultural importance that demands the most intelligent endeavour of farmers to obtain the largest possible annual income from such an investment at the lowest possible cost."

We add the following "Summary of Agricultural Produce Statistics (Wheat, Barley, and Oats) of England, Wales, Scotland, and Great Britain, for 1888":—

WHEAT.

	Estimated Total Produce.		Acreage.		Estimated Average Yield per Acre.	
	1888.	1887.	1888.	1887.	1888.	1887.
	Bushels.	Bushels.	Acres.	Acres.	Bushels.	Bushels.
England	68,159,216	70,874,902	2,418,674	2,197,580	28.18	32.25
Wales	1,641,149	1,621,957	76,828	69,407	21.36	23.37
Scotland	2,139,282	1,825,888	68,735	50,337	31.12	36.27
Great Britain	71,939,647	74,322,747	2,564,237	2,317,324	28.65	32.07

BARLEY.

	Estimated Total Produce.		Acreage.		Estimated Average Yield per Acre.	
	1888.	1887.	1888.	1887.	1888.	1887.
	Bushels.	Bushels.	Acres.	Acres.	Bushels.	Bushels.
England	57,740,453	55,112,560	1,742,338	1,759,636	33.14	31.32
Wales	3,110,975	3,154,151	117,866	118,920	26.39	26.52
Scotland	7,630,661	7,034,283	225,357	206,690	33.86	34.05
Great Britain	68,482,089	65,300,994	2,085,561	2,085,156	32.84	31.32

OATS.

	Estimated Total Produce.		Acreage.		Estimated Average Yield per Acre.	
	1888.	1887.	1888.	1887.	1888.	1887.
	Bushels.	Bushels.	Acres.	Acres.	Bushels.	Bushels.
England	61,836,319	61,441,920	1,616,344	1,768,123	40.11	36.45
Wales	7,521,038	7,915,271	250,513	255,434	30.02	30.99
Scotland	34,986,742	34,926,201	1,015,395	1,064,432	34.46	32.81
Great Britain	107,344,099	107,283,392	2,882,252	3,087,989	37.21	34.74

* Supplied by the Agricultural Department, Privy Council Office, under date December 11, 1888.

† Estimators state that there is a large proportion of light corn, and that generally the grain is inferior in quality.

PLANT NOTES.

MAXILLARIA PICTA.

THOUGH not a particularly showy Orchid, it is exceedingly free and profuse, and where cut flowers are in demand this should find a place, as flowers may be gathered from it in the way that one gathers Violets, and with ordinary attention it never fails to produce abundance of blossom. It has a very strong odour, resembling that of Almonds. The scapes are from 5 to 6 inches in height, the petals and sepals are incurved, dotted and streaked with dull purple and chocolate. It is a native of Brazil, and was figured in *Bot. Mag.*, t. 3154. *W. Harrow, Botanic Garden, Cambridge.*

ABUTILON VENILLARIUM.

as a wall plant for sunny positions out-of-doors is a great deal better than would seem possible, judging the plant only by what it is when grown in a pot in a greenhouse. It grows freely, is evergreen, and flowers most abundantly in the autumn and early winter. Last year it was gay with flowers even at Christmas. It is covered with bloom now, in spite of severe morning frosts and fogs. Each flower is $1\frac{1}{2}$ inch long, urn-shaped, with five prominent ribs, suggestive of a Chinese lantern; the colour is deep scarlet and lemon-yellow, with a brush-like cluster of stamens protruding beyond the mouth about half an inch. The beauty of the branches when with these flowers hanging from almost every leaf-axil is easier imagined than described. A plant may be seen under the conditions suggested above in flower at Kew. *W. W.*

JACARANDA (BLUE TREE).

Under this name seeds of the above have been received from Madeira, and this suggests itself as a very suitable plant for dinner-table or other decorative purposes. The leaves are bipinnate, and in habit and appearance bear a resemblance to the fine-leaved Acacias, though it belongs to the order Bignoniaceæ. Its growth is very light and elegant, and Mr. Lynch, Cambridge Botanic Garden, considers it to be *J. ovalifolia* of *Bot. Mag.*, t. 2327. It differs from our plant of *J. mimosæfolia*, to which

the former is said to belong. It should be grown as a stove plant, for when subjected to cool-house treatment the leaflets fall off prematurely. Cuttings strike readily when the plants are in a growing condition by placing them in a close case, or beneath a bell-glass in bottom-heat for a fortnight or so, potting them into a mixture of loam, leaf-mould, and sand when rooted.

ADHATODA CYDONIIFOLIA.

This makes a very effective plant when trained in such a style that its flowering branches hang naturally in festoons or streamers. To tie it in closely to stakes or on wire-shaped balloons means simply subtracting from its beauty. The flowers are borne in spikes in the axils of the opposite leaves, generally in fours. The lower lip of the corolla is of a dark purple, which is almost divided into two parts by a streak of white down the centre. It should be planted out in a well-drained position in a mixture of peat loam and sand, and grown in a structure with a temperature ranging between that of a stove and cool-house. Cuttings strike easily at any time of the year, but are best taken in the spring or summer months, when if placed in bottom-heat beneath a bell-glass root in the course of a fortnight or so. In a flower before me there are two kinds of hairs borne on the outside of the corolla—one long, the other short, the latter being somewhat globular at the extremity, but cannot say whether of a secreting nature or not. *W. Harrow, Cambridge Botanic Garden.*

SATYRIUM CARNEUM.

The accompanying illustration (fig. 98), prepared by Miss Barr, from a specimen which flowered with Messrs. De Graaff, Brothers, of Leyden, in August, represents one of the earliest introduced of the Satyriums (1797), and still one of the finest of them. So handsome, indeed, is its stately spike of rose-pink flowers, rising from the flat, orbicular, and fleshy leaves, that one is apt to be surprised that it and the other representatives of this beautiful genus are not more commonly seen in gardens. The fact is that the numbers of them which have fallen into careless hands, and, therefore, failed to be satisfactory, have gained for the genus the character of being difficult to grow and flower. Such is not the case, however, provided the plants be treated in a proper manner, and strictly as cold-house or frame plants. My experience of Satyriums is that they thrive best grown in a frame from which the frost is kept out or in an ordinary greenhouse on a shelf near the glass of the roof. They rejoice in abundance of light, but are easily injured by direct sunlight. They grow well in a mixture of turfy peat and loam-fibre, with a good supply of sand added, or in just such a mixture as Hyacinths are usually potted in, but rather more sandy; they do not like watering over the foliage, and require water in the pot only like ordinary plants, and not in abundance, as with *Disa grandiflora* and other terrestrials of that class.

The South African species here alluded to may be said to be September flowering, although some may come in in August and some in October. Immediately after flowering the leaves decay, and from that time until they show signs of growing again but very little water should be given. Water may safely be given from May onward until after flowering, and in May any which require potting should be attended to. Above all things, a close house or pit is bad for Satyriums, for which free pure air is one of the most necessary things. By observing the above rules I have grown and flowered well *S. carneum*, rose; *S. Hallackii*, fine rosy crimson; *S. acuminatum*, pure white; *S. coriifolium*, orange; *S. candidum*, white; *S. membranaceum*, pink; *S. maculatum*, bluish to pink, with purple markings; and *S. erectum*, pink and purple. *S. acuminatum* I have even now outdoors with spikes in bud, and with only the protection of a sheet of glass. Of this plant it may be noted that the leaves, flowers, stalks and all, after drying, are delightfully and lastingly fragrant—so much so, that a correspondent informs me that it is

gathered and dried out in South Africa to use among clothes and lines as Woodruffe is in some parts of Europe. Most of the other *Satyrums* are also very fragrant when in bloom. *James O'Brien*.

THE CHEMISTRY OF VEGETATION, IN REFERENCE TO THE GROWTH OF THE POTATO.

(Concluded from p. 633.)

GROWING UNDER CONTROL.—This question may perhaps be put:—Supposing we did know with exactness all the conditions under which a tuber is formed, and the limits of the variations which may be reached without materially affecting results, and did know the extent to which its formation, chemical composition, and period of maturing could be controlled, if the Potato were grown in houses where not only soil, temperature, and moisture of air, but also the colour and over intensity of the light could be arranged, how could all this knowledge help the cultivator who grows by the acre in the open, where his crop is exposed to climatal conditions which are so variable and so different in their variability from year to year, and so much beyond control? With our present partial knowledge, or, more correctly, want of knowledge, a complete answer to such a question cannot be given. We do not yet know enough of conditions and of results of conditions to know what we might do, but some few suggestions may be given that may help eventually to answer the question.

It is a well established fact plants do acquire "habit," that "habit" is transmissible by seeds or cuttings, and that it may become intensified in successive years. This intensifying in the case of propagation by seeds *appears* to depend on a less direct connection with the parent plant than in the case of cuttings; but as likeness of the offspring to the parent (with probabilities of "sport," which seem about equal in either cases) comes about from both means of propagation, the difference is probably more apparent than real. Be this as it may, a newly-acquired "habit," it seems, is sometimes inherited, and if the conditions that started it remain naturally, or are by art made to remain the same, the habit is intensified. In the case of dioecious plants, and of artificial cross-fertilisation, there are two factors to consider in seed-propagation; in monœcious plants and with cuttings, only one. In Potato growth, propagation by cuttings is the rule (as the tubers are but underground stems), artificial cross-fertilisation, to endeavour to produce a new "variety," quite the exception. But, judging by analogy from other plants, "habit" in the Potato might be intensified by either method of propagation. Potatoes are, as a rule, grown in such a haphazard way, and without any record of observations, that there seem no data for knowing what the limits of this intensifying are. Direct experiments continued over a series of years would decide this with at least some certainty.

Now, we have seen the way in which our modern theories of chemistry have influenced the investigation as to how starch is first formed in plants—that is, in plants generally. There have been no direct observations on the Potato so far as I can find, but there is no reason for supposing it offers any exception to the rule. The "reserve material" of a seed starts a young plant if grown from seed, of a stem if grown from a cutting (from a swollen stem in the case of the Potato). Then when the independent plant has grown far enough to "feed" itself it forms starch by decomposing carbonic acid and water. *But only under certain conditions.* The surface of the leaf must be moist; and light waves of certain lengths only and of certain combined "intensity" can effect this decomposition.

We need not trouble for practical purposes much about Pringsheim's hypochlorin. Sachs has repeatedly asserted and re-affirmed that starch is the first visible product formed. Pringsheim says hypochlorine precedes it. As a scientific study the subject is of interest, but practically both agree in this, that



FIG. 98.—SATYRIUM CARNEUM: FLOWERS PALE PINK, BRACTS BROWNISH.

the leaf is the organ in which the starch is formed, and there is no apparent important difference in these results as to the conditions under which it is formed. From this first formed carbo-hydrate all the others found in a plant are formed. What we want from a Potato is this starch in the form in which we can use it as food.

In the case of timber trees the rapid transference of carbo-hydrates to growing branches is a gain to the stateliness of the tree. So, too, we appreciate a wealth of carbo-hydrates in leaves on plants cultivated for luxuriant foliage. But we do not grow Potatoes for stateliness, or for handsome foliage, or for bright-hued flowers. We want the plants to put as much of their starch into their tubers as they can.

What is the ratio between the rate of decomposition of CO_2 and H_2O (carbonic acid and water), with its change to starch, $\text{C}_6\text{H}_{10}\text{O}_5$, and the rate of tuber formation, is a subject no one seems to have worked at. In other words, we do not know, for the formation of, say, a pound of starch in so many weeks, what leaf area and what duration of the wave lengths is wanted. If much is used up in the leaves and stems there is less to go to the tubers, but the amount at any time in the leaves and stem relative to that in the tubers is so disproportionate it is perhaps of little importance. A dense foliage, however, makes leaves in the shade inactive as starch formers, and the more the leaves the better chance there is for the fungus.

Now, is it an altogether impracticable suggestion that experiments should be made in growing Potatoes in houses where conditions in accordance with our present knowledge could be under control? The full intensity of light could not in our climate be always secured, but over-intensity could be guarded against. Coloured glass is not now very costly. Cultivation in solutions of salts of different strengths and in different proportions is easily effected, and in pots soils of different and definitely weighed mixtures could be easily arranged.

It seems hardly rash to predict that different results would happen in different cases, and that different "habit" might in a few years be established with some degree of permanency. How long a habit might last when tubers so produced were used for cultivation in the open seems a very doubtful question. How long does any variety last? It has been said, at the outside not more than twenty years. That appears to be in the case of keeping on, year after year, taking from the open. But might not "breeding" keeping up the strain? It would be time to consider what points to breed to when the limits of control have been worked out. Supposing experiments proved that it was possible to lead to a habit of a few large or many small tubers who should decide the standard of a good Potato? A committee of cultivators, or of cooks? For boiling, steaming, baking, roasting, chipping, mashing, and the more mysterious elegant ways of preparing, known only to accomplished chefs, I am told different qualities are preferred. Probably there would be many standards. But the first thing is to learn how far we can control; then how far it is possible to induce habit; then to what extent that habit is permanent, and how conditions in the open change it; then whether any results arise sufficiently good to make breeding or rearing establishments under be control worth keeping up.

A question to which it seems at present possible to get but a very partial reply is, what happens to tubers during the time they are pitted or kept in cellars?

The principal fact that seems to be known is, that they loose weight. But why? What is it they loose? Is it that it is only water that is lost, *i.e.*, H_2O , which is contained as water in the tuber, and which can be driven off by drying?—or is it that the tubers, when first lifted, contain a glucose ($\text{C}_6\text{H}_{12}\text{O}_6$) which gives up from each molecule H_2O , and so becomes an amyloid ($\text{C}_6\text{H}_{10}\text{O}_5$) starch? The question probably has bearings on the difference between the "mealy" and "waxy" condition of a tuber.

As a preliminary step to answering the question, information might be collected in this way.

When a crop is lifted set apart a number of tubers for observation. They should be all from one part of the crop, so that the conditions under which they grow should be similar. They should also be of about the same size and weight. In crops on sloping land, where conditions of soil and drainage are different at the top and at the bottom, a second set might with advantage be kept. Each tuber should be numbered or in some way marked. Weigh and enter the weight of each tuber when first lifted, and at regular intervals weigh and record the weights. This would give the rate of loss of weight. To make the record of value the thermometer readings (highest and lowest, day and night) of the place where the tubers are kept should be registered. This would give loss of weight with regard to temperature. These observations would need regularity, but would give but little trouble. A record of the hygrometric condition of the air would add to the value of the observations.

Another set of observations that would be very helpful, though rather more troublesome, is on whether there is any change in the starch in tubers during keeping. All that is requisite is at fixed intervals to take a tuber, slice it, and treat it with iodine. The blue colour will show the area of starch. A record should be kept either by a pencil sketch, or, better still, by a photograph. The results will show, as in the woodcut from a photograph at p. 91, July 28. Different tubers, even from the same plot of ground, may, of course, somewhat vary at the outset, but the average results of a large number of observations would indicate the nature of the changes taking place. *W. S. M.*

THE APIARY.

WE are having curious weather for the time of year. Rain has been very general, and probably in many cases beneficial, but not pleasant for us or the bees. If neglected before, do not fail to open the entrances to their full width now, otherwise the hives will probably get very damp. If bricks are used to stand hives upon, there ought to be pieces of slate between the bricks and the hives, otherwise the damp will ascend right through the bricks into the hives. We found this out once by painful experience, to the loss of a hive and a colony. Should the rain unfortunately be changed into snow, more care still will be required. The entrance must then be shaded, and the snow brushed off the covers every day.

The honey harvest in America seems to have been as bad, or worse than here, and from the United States we hear that they have never had such a bad year for a very long time. Let us hope that things are now on the turn. The present is a good time to be making preparations for another season, especially as regards frames and sections. It seems that in the near future wooden sections are to be more or less replaced by glass. For some time this has exercised the minds of beekeepers, but a totally satisfactory section seems to be a thing of the future. Our Scotch friends think it is not advisable to have glass sections too small, as the honeycomb looks so beautiful in them that they meet with a very ready sale. In Scotland for a long time past they have used a kind of glass frame bar holding 4 or 5 lb., and, filled with heather honey, have found a ready sale.

These are days when the study of antiquities receives a large amount of attention. Bees have in all ages received a large amount of attention, but it is astonishing what mistakes were made by our forefathers about them. The Rev. John Thorley years ago said the princesses were not only "proclaimed queen, but crowned as well." While we read the following curious medical recipe in the *British Bee Journal* of this week, taken from a work printed in 1607:—"The hart of an ape, sod and dried, where of the weight of a groat drunk in a draught of stale hunny sod (see the) in water called *mellicraton*, strengtheneth the heart, emboldeneth and driveth

away the pulse and pusillanimity thereof, sharpeneth one's understanding, and is souveraine against the falling euill." What would the modern physicians say to this? Echo answers, what? *Bee.*

FICUS ROXBURGHII.

[SEE SUPPLEMENTARY SHEET.]

THE genus *Ficus* has been the occasion of late of considerable correspondence in the pages of our own and other periodicals by various writers, including Dr. King, the eminent Director of the Calcutta Botanic Gardens, and who has recently written an elaborate monograph of the *Species of Ficus of the Indo-Malayan and Chinese Countries*, published by L. Reeve & Co., London. Our illustration (see Supplement) is copied from the frontispiece to this work, and the tree, of which it is a picture, is now growing in the Botanic Garden at Calcutta.

This species of *Ficus* was named by the late Dr. Wallich in honour of the illustrious Roxburgh, for many years the Superintendent, and to a large extent the founder of the Botanic Garden at Calcutta, and the father of Indian botany. *Ficus Roxburghii* is a native of the lower and outer Himalayas from Nepal to Bhotan, being found at elevations of from 1000 to 3000 feet. It is a tree from 15 to 25 feet in height, and with a wide spreading head. The leaves are large, measuring from 1 to 1½ foot in length, and from 12 to 15 inches in breadth. The most striking feature in the tree is, however, the great abundance of its handsome russet-red Figs. These Figs in shape and size much resemble Dutch Turnips. They are carried in enormous bunches on the stem, especially near its base, and smaller bunches on the main branches. The mass of Figs borne at the collar of the stem on this singular tree at the time when it was photographed, weighed, as Dr. King informs us, about a hundredweight. It must, when in full perfection, have presented a remarkable spectacle, and one which would have produced a sensation at a fruit show in this country. The fruit, however, although eaten by the unfastidious Indian labourer, is quite unpalatable to a European being insipid and sloppy.

PLANTS AND THEIR CULTURE.

ARALIA AND PANAX.—This is a group of plants chiefly characterised by their elegance, particularly as small plants; but when they attain larger size than can be accommodated in a 48-sized pot, they are not nearly so captivating; in fact, their general appearance becomes altogether changed. To give an example: the well known *Aralis reticulata*, when young, has long, narrow, almost linear leaves; but planted out in a cool greenhouse it soon begins to assume its adult habit of growth, and at 12 or more feet high the leaves will be from 4 to 6 inches in width, and a yard or more in length, and all other parts of the plant developed in the same proportion. The plant in this condition is very effective, altogether different from the same plant growing in a 48-pot. The same sort of metamorphosis takes place when *Aralia Veitchii* is planted out under like conditions, the individual leaflets soon measure an inch across, and other parts become correspondingly developed. This is merely a sample of what generally takes place, when these plants are allowed to develop, and shows the desirability of having them in a young state for most indoor purposes. Therefore batches of cuttings should be put in periodically. These plants are not nearly so difficult to propagate, as was at one time believed, indeed, many of them strike almost as freely as Willows. A frequent cause of failure results from the cuttings being kept too close and moist, such as would take place in a close propagating case, especially where much bottom-heat was applied. In such a position, unless the greatest care is taken in airing, shading and other details, damping off is liable to occur, but this

is due more to the cuttings being exposed to too much heat than to damping, in the ordinary sense of the term. That which I have found to answer best is a propagating case or frame, stood on some moisture-holding material, such as sand, sawdust, or cocoanut fibre refuse, in a position where the greatest amount of light may be had without the sun's rays falling directly on it. By so doing the evil of shading is altogether avoided; more air may be given, and watering is greatly lessened. A pit facing north, and a temperature of 60° to 65°, answers very well. If bottom-heat be employed it should be of a very gentle kind, not much exceeding the temperature of the house. But excellent results may be obtained by merely using a hand-light or bell-glass to cover the cuttings, not forgetting to arrange for a moderate circulation of air about the cuttings. I have always found it best to insert the cuttings singly in small pots (thumbs) filled with a sandy compost, and it is a good practice to place a pinch of sharp sand at the base, and around the cutting. As to the size of the cuttings, that will depend on the variety—free-rooting sorts like *A. reticulata*, *filicifolia*, *Guilfoylei*, and *leptophylla*, may be taken of large size, remembering that 1 to 2 inches of stem above the soil is quite enough; if, however, cuttings are scarce, the stem may be cut into lengths of two or three joints, which, if they have leaves, will root as readily as tops; those without leaves should be planted thickly together in shallow pans; and this is also the method to pursue with root cuttings, but stems are to be preferred. In the case of *A. Veitchii* elegantissima and *A. V. gracillima* grafting is the readiest mode of propagation. Take rooted cuttings of *A. reticulata*, which makes the best stock, although *Guilfoylei* is often used; cut them over an inch above the surface of the soil, and graft by any method that is preferred. That which gives the least trouble is cleft-grafting, which is done by splitting the stem with a thin-bladed knife down the centre to the surface of the soil; cut the scion like a wedge, and insert it in the cleft, being careful that the bark (cambium) of both stock and scion exactly coincide, at least at one side; tie with a piece of bast, and stand the grafted stocks where water cannot touch them. A little grafting wax is useful for them, but it is not absolutely necessary. A slightly drier frame than that recommended for cuttings would suit, but care should be taken that they do not damp off. In all cases tie up the leaves, otherwise they are apt to get broken. If well watered when put in, gentle dewings should, with judicious airing, suffice until the cuttings or grafts are well established. If *A. Veitchii* is grown in a greenhouse with a minimum temperature of 45°, it will stand much more hard usage, as well as remain of a suitable size for a longer period than when the plant is grown in a stove. *A. leptophylla*, *A. ternata*, *Pseudopanax crassifolia*, and *Panax Victorix*, are all useful, and the last-named is a beautiful variegated plant, which likes an intermediate temperature. *Panax laciniatum*, *P. plumatum*, and *Elæodendron Chabrieri*, are desirable species and varieties, and they are easily increased from cuttings. For furnishing cold or exposed positions, *Aralia japonica* is very useful, for, being nearly hardy, it can be placed where other plants would succumb. There is also a variegated form of it, but it is reputed tender. Both are easily raised from cuttings, but seeds of the green ones are sometimes obtainable. The Rice-paper plant, *Aralia papyrifera*, is a bold, effective plant, but it is a coarse grower, with leaves darker green on the upper surface, and whitish underneath. Tall specimens with good heads of foliage make fine conservatory plants. There are several half-hardy species well worth growing. *F. Ross*, *Pendell Court*, *Bletchingley*.

THE HARDY FRUIT GARDEN.

MANURING.—A general survey should now be taken to ascertain which are those fruit trees that stand in need of manure, as by so doing matters will be greatly facilitated; and then, on the first frosty morning, the manure may be wheeled to the different trees. Any Apple and Pear trees that are in the habit of carrying heavy crops yearly must be well looked after, for as the majority of these trees are grown on the dwarfing stock, they are soon exhausted unless well manured every year or two. It can generally be seen at a glance when trees are getting into a starved condition by the deterioration of the crop in point of size and quality; the fruits sometimes crack, and the trees make little or

no growth. Any trees which are in this condition should have the surface-soil removed to the depth of 5 or 6 inches, and then apply a good coating of manure equally all over the roots, after which 2 inches of the soil should be returned to the top of the manure, both to hold it down and to prevent birds from scratching it about. All bush fruit quarters are greatly improved by heavy dressings of manure, and for digging-in round the roots of red and white Currants and Gooseberries—well rotted farmyard manure is the best. Black Currant borders should have the surface-soil lightly pointed over, and then a good dressing of stable-manure, applied such as has been laying in the manure-yard for a few weeks, while for Raspberries old hot-bed material is without doubt the best stimulant they can have. Old-established Apple trees in orchards are greatly benefited by a surface-mulch of manure. This, if only placed on the turf, will do a great amount of good as the rains will wash the manurial properties down to the roots. The finest Blenheim Orange Apples grown in this neighbourhood are gathered from trees mulched with farmyard manure in this manner. Failing manure the turf on the surface should be dug in round about the trees with beneficial results.

The top-dressing and renovating of wall tree borders when required should receive attention, and the soil prepared so as to be in readiness. Sound loam well chopped, and the parings from the sides of roads and drives, to which may be added burnt earth, and wood ashes, all well mixed together, and placed in a heap for a short time before use, will form an excellent compost for the purpose. A small quantity of manure may be added for cordon trees.

Bush Fruits.—The pruning of these should now be done, but in districts where birds are troublesome, it is there best deferred till the spring. With regard to the pruning of Gooseberries, the purposes for which the fruits are required should be taken into consideration. A good general rule to follow is to leave rather more wood in those trees which are expected to furnish fruit for gathering in a green state, and for bottling purposes, than in those trees on which the fruit will be left to hang and ripen for dessert. Spur-in closely all cross shoots, and those not required for furnishing the tree; and remove a few of the oldest and under branches yearly, and leave a corresponding number of young growths to supply their places. These remarks apply also to red and white Currants, which should always be closely spurred in, and the branches kept well regulated and clear of each other. Black Currants do not require any spurring, but a good general thinning of the wood instead, removing as much of the old wood as is possible. A very good plan is to thin every other bush rather severely; this will induce them to break away, and make plenty of stout growths, which will bear exceptionally fine fruit the year after.

If cuttings of any of the above are required, select medium-sized, straight, well-ripened shoots to the required number, tie them in bundles, label them, and heel them in under a north wall, until such time as they can be properly made. *A. Ward*, *Stoke Edith Park*.

FRUITS UNDER GLASS.

PEACHES.—Under the genial influences of the mild weather, and with the assistance of the bed of fermenting leaves in the house, little or no artificial heat will have been required, and the buds will have made rapid progress. I find that the difficulty has been to keep the temperatures at 50° at night when the apparatus has been resorted to—by day 55° will be quite high enough when the sun is obscured, and in the intervals of sunshine 60° will not do harm. Ventilation must be afforded every day, and at the top of the house if possible, but more or less according to the state of the weather. Maintain a genial state of the atmosphere by turning a portion of the leaf bed and sprinkling it occasionally with tepid water. Allow the buds to get dry before darkness sets in, and as the blossoms expand advance the night temperature to 55°, and allow the flowers to get perfectly dry by the middle of the day; and pass over them a Pampas-grass plume to disperse the pollen.

Succession Houses.—The second house should be got in readiness if not already done; and it may be started about the end of December. Place a bed of

fermenting material in the house, as advised for that started early, and avoid frequent syringings. Let the necessary pruning and dressing be attended to in the later houses, and where red-spider and scale have been prevalent, let the trees be syringed thoroughly with protroleum and rain-water at a temperature of 90°. A 60-pot full of petroleum to 4 gallons of water will speedily loosen the scale from the shoots; and then the usual washing with a spoke-brush will destroy any eggs which may have remained. When using the brush keep the fruit-bearing shoot on the palm of the hand, and be careful to draw the brush up towards the point of the shoot. As each tree is scrubbed give another syringing with the mixture.

Figs.—The early trees, which were placed in a bed of fermenting leaves about the middle of November, will now be unfolding their leaves, and the young Figs making progress. If the temperature of the bed decline below 85° additional material should be employed to raise it to, but not to exceed that figure. At this stage the night temperature may be 55°, and the day temperature 60° if cloudy, and 65° with sun-heat. Syringe the tree with tepid-water on the mornings of fine days. Air the house daily when the weather is mild. Keep the roots in a medium state as regards moisture; and where the trees are not potted in the autumn, give frequent waterings with clear manure-water, and soot alternately.

Succession Houses.—The Fig trees may be put in readiness in the manner previously advised, cleaning, training, top-dressing as may be required. The trees will then be in a thorough state of readiness for the start at any period after the New Year. *W. M. Baillie*, *Luton Hoo*.

THE KITCHEN GARDEN.

PEAS.—Seeds of these now germinating should be protected as soon as they appear by means of Spruce Fir boughs, about 18 inches long, placed on each side of the rows. When Spruce Fir cannot be obtained, Box, or Laurel, or Yew, may be used instead. A sharp look-out should be kept for mice, which do a great deal of mischief to Peas in a short time. Where cats could not be employed to reduce their number, Collin & Pullinger's patent traps have been employed with success. They should be kept clean and baited occasionally; one trap will often catch four or five in one night without any attention. Slugs are also troublesome in mild, showery weather, and it is well to put a few fresh-sifted coal-ashes on each side of the rows of Peas. The above remarks apply to Broad Beans also.

Cauliflowers in handlights and frames should have plenty of air at all times when the weather is mild, as any encouragement of growth at this season results usually in buttoning in the spring. Lettuces in frames should also have abundance of air in mild weather, and the larger plants be kept clear of decaying leaves, &c.; these and Cauliflowers also should have the surface of the soil stirred occasionally, and an occasional dusting with lime if slugs prove troublesome.

Seakale and Rhubarb.—A sufficient quantity of these roots should be prepared for forcing, and the earlier successions gradually brought on by keeping up a steady temperature of 65°—70°. Rhubarb is improved in flavour if the pit or house in which it is being forwarded is ventilated for a few days before gathering the stalks.

Globe Artichokes.—The stems and crowns of these plants should be protected before severe frost comes, by pulling away some of the older leaves and placing a heap of coal ashes, dry litter, or short straw around them. On the first indications of hard weather setting in, a plentiful supply of Celery, Brussels Sprouts, Savoys, Horse Radish, &c., should be got into the sheds, so as to be ready for use; and any roots of Parsnips or Jerusalem Artichokes remaining in the ground should be stored. Celery in rows outside should be covered with straw or bracken; Parsley protected by frames if possible, or by straw burlies. Chicory roots should be dug up and laid in closely, ready for forcing as soon as the supply of Endive is exhausted, and any of the latter remaining outside should be protected from severe frost. *W. H. Divers*, *Ketton Hall, Stamford*.

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APPOINTMENTS FOR THE ENSUING WEEK.

MEETING.

THURSDAY, DEC. 20.—Linnean Society.

SALES.

MONDAY, DEC. 17.—Dutch Bulbs, at Stevens' Rooms.

TUESDAY, DEC. 18.—Nursery Stock and Greenhouse Plants, at Protheroe & Morris' Rooms.

WEDNESDAY, DEC. 19.—15,000 Liliun auratum and other Bulbs, Greenhouse Plants, &c., at Protheroe & Morris' Rooms.
Roses, Fruit Trees, Shrubs, Border Plants, Dutch Bulbs, &c., at Stevens' Rooms.

THURSDAY, DEC. 20.—Large quantity of Dutch Bulbs and English-grown Lilies, at Protheroe & Morris' Rooms.
Liliun auratum from Japan, at Stevens' Rooms.

FRIDAY, DEC. 21.—Sale by order of Messrs. F. Sander & Co., of Cypripedium Elliottianum, Cattleya amethystoglossa, and numerous other choice Orchids; also many Orchids in bloom, at Protheroe & Morris' Rooms.

SATURDAY, DEC. 22.—Roses, Fruit Trees, Shrubs, Border Plants, Dutch Bulbs, &c., at Stevens' Rooms.

* * **OUR ALMANAC.**—Secretaries of societies and others would greatly oblige by forwarding immediately, or as early as possible, to the Editor, notices of fixtures for the ensuing year, for insertion in the Almanac to be published in the first number of the new year. Communications should reach us not later than the 20th inst.

Horticultural Shows in bygone days. MR. JOHN DAWSON, the Secretary of the Royal Horticultural Society of Perthshire, has done good service by publishing his address on the history of the Society, which dates from 1808, and which, therefore, may claim to be the oldest existing horticultural society in Scotland. It appears that the minutes and other proceedings of the Society are still in existence, and from them Mr. Dawson has compiled a very amusing and interesting history. The first show of which any detailed account remains was held on July 13, 1813, and consisted of Pinks and Lettuces, Melons and Strawberries, with three judges for each of these two groups. In order to prevent disputes and altercations the exhibits were locked up after the decision of the judges and not restored to their owners till after dinner. Harmony then prevailed and the members joined in the chorus "We'll rival the lads about Lunan wi' Flora, Pomona, and a'." A second show was held a month later, comprising Carnations and Cauliflowers only. In 1816 three shows were held, the first in April, for Seakale or Colewort, Broccoli, and Cucumbers, Polyanthuses and Auriculas; the second

in June, for Tulips, Ranunculuses, and Anemones; and the third in August, for Melons and Carnations. At this meeting the first mention of Roses is made; they were not, however, shown in competition on that occasion, though the specimens of seedling Roses then shown by Messrs. DICKSON & BROWN were declared to be worthy of the highest praise. Discontented exhibitors were not unknown in those days; indeed, they were proportionately more numerous then than now; and the Perth Society seems to have had no little trouble with one cantankerous exhibitor, who, year after year, made himself foolish, and proved a source of vexation to the Committee, till at length things came to such a pass that the President declined to receive any apology from him, or to remain a member of the Society with him; and we find the committee, with characteristic Scottish use of the future tense, expressing their regret that "one or two of the brethren are still determined that they shall not be pleased"—(the italics are ours); after which nothing more is heard of the discontented one for some time. In 1821 Turnips, Dahlias, and Hollyhocks were shown. In 1824 Carnations were distinguished at these shows into flakes, bizarres, and Picotees. In 1825 Lettuces were in like manner distinguished as Cos and Cabbage, while the Pansies of our days were foreshadowed by the Violets of that time. In 1831 the cantankerous exhibitor again appeared, but was disqualified, according to the record before us, because his collection of herbaceous plants included Gladiolus cardinalis, "which was held to be Liliaceous, and by the rule all bulbous roots were excluded." This seems to show that the botanical knowledge of the judges was somewhat at fault; at any rate, according to our present knowledge, there are three distinct misstatements in the rule we have quoted. Pelargoniums and Irises appeared for the first time in 1833, and in the summer show of that year Messrs. JACKSON & TURNBULL exhibited upwards of 300 named Roses and "a numerous assortment of Ayrshire and China Roses." In 1840 seedling Pansies and Larkspurs were shown, Campanula pyramidalis in 1844, and in 1848 an extra prize for Ferns—their first appearance at these shows. These extracts must suffice to illustrate what was done in the way of business. Refreshment was, of course, needed after work, and "the evening was spent in as friendly and entertaining a manner as the circumstances of the times would permit of." Some of the entertainment consisted of snuff, for which 2s. 6d. was paid. At this time the expenses of feasting were only 32s. 4d. less than the whole amount awarded as prize money. At present the more reasonable course of each member paying for his dinner is adopted, exceptions being made in favour of the judges, officials, and distinguished strangers. It would not be fair to Mr. Dawson to reprint more of his pamphlet, which may be had from the Secretary to the Society, but we commend it to the notice of our readers, and hope the Society may long continue to "tend their flowers."

"Roses and Lilies and a',
Daisies and Violets and a';
See what a profusion of beauty
And sweetness a garden can shaw."

THE ROYAL HORTICULTURAL SOCIETY.

Much needless alarm has been felt at the official statement made last week to the effect that as many as six members of the Council propose to resign their seats at the next annual meeting, the number comprising some of the most active and energetic of the Council. These resignations are taken in

some quarters as an indication of a divided policy, and a sign that the ship is really at last sinking. In point of fact, thanks to the gentlemen mentioned and their colleagues, the Society exhibits far more buoyancy than has been the case for years. Greatly as we regret the approaching resignations, and earnestly as we hope that some of them, at least, will be withdrawn, we deprecate any ill omen being deduced from what is a natural occurrence. Those who know what exertions have been made to place the Society on a better basis, and who are aware of the labour and time that have been expended in so doing, will feel no surprise that these gentlemen feel it incumbent on them to retire, at the end of a year of reconstruction, now happily largely effected. The marvel has been that men, so eminent, so heavily weighted with other duties, and so disinterested, could be induced to sacrifice so much for the benefit of horticulturists. It will be the duty of the Fellows at large to fill the vacancies; and though the task will be difficult, we have no doubt that it can be accomplished, but success will only be arrived at by unity of purpose and co-operation. Disintegration and dismemberment would simply ruin the Society, to the great detriment of horticulture. This tendency should, in the best interests of horticulture, be instantly checked, and one way of effecting this is by refraining from attaching a significance to the retirements from the Council, which is not justified by the facts of the case.

MR. G. F. WILSON.—The meeting of the Floral Committee on the 11th inst., was not only the last of the year, but was the last occasion on which Mr. G. F. WILSON will preside as Chairman, that gentleman having signified his wish to retire from the Council. Mr. WILSON has presided over the committee for many years with marked impartiality and courtesy, while his extensive knowledge of Lilies and herbaceous plants has always been at the service of the committee. Mr. WILSON has fairly earned the right to retire, as he has given up much time and labour to the service of the Society, and is one of the few amateurs who are sufficiently interested in horticulture to take an active part in the maintenance of the representative Society. The cordial thanks of all who know and appreciate the value of Mr. WILSON's services will be tendered to him, with the hope that he may for many years to come continue to take an active, if less responsible, part in the work of the Society.

GARDENERS' ORPHAN FUND.—We understand that Mr. A. J. BROWN, Honorary Local Secretary to the Fund for the county of Sussex, is, in co-operation with Mr. HALL, Lord BOLTON's gardener, making arrangements for an entertainment in aid of the funds of the above charity.

DEVON ROSERY GARDENERS' RELIEF FUND.

—We are requested by Messrs. CURTIS, SANDFORD & Co., Torquay—who, it will be remembered, were the originators of the Fund—to call attention to the fact that there is one bed vacant at the convalescent home there for gardeners from the North. The home is free, but the committee think that the gardeners' employers should be asked, and would, no doubt, be willing to contribute to the Fund; but this is not a *sine qua non*.

PARIS INDUSTRIAL EXHIBITION.

—We have received from M. Charles Baltet, the President of the Jury, a list of awards made at the Paris Industrial Exhibition to English exhibitors in the section of perry and cider. For collections of fruits, a Gold Medal to Messrs. R. Veitch & Sons, Exeter; Silver-gilt, to Mr. J. Watkins, Hereford; Silver, to Mr. Jones, Ledbury; and a Bronze Medal to Mr. Ham, Exeter. Messrs. Bulmer & Co., Credenhill, Hereford, was awarded a Gold Medal for perry; and a Silver-gilt and Silver to Mr. Watkins and Mr. Jones, Hereford, respectively. For cider, Messrs. Bulmer and Mr. Ham each received a Silver-gilt Medal; Mr.



THE PHOTO SPADON & CO. 22 MARK LANE CANON ST. LONDON E.C.

A FEW FIGS (FICUS ROXBURGHII) CALCUTTA BOTANIC GARDENS.

Bosley, of Devonshire, a Silver Medal; and Bronze ones were accorded to Mr. Watkins and Mr. Jones.

BOOKS OF THE SEASON.—Among the many useful manuals issued at this season, two which are greatly valued by gardeners, and which now lay before us, are the *Horticultural Directory and Year Book*, published at the office of the *Journal of Horticulture*, 171, Fleet Street; and the *Garden Annual and Almanac*, published at the office of the *Garden*, 37, Southampton Street, Strand, W.C. A handy strong pocket-book and diary is issued by J. WEEKS & Co., the horticultural builders, of King's Road, Chelsea.

DISA LACERA VAR. MULTIFIDA.—It having been stated in Mr. Brown's note on this plant in our last issue that the engraving was taken from a plant grown by Mr. F. W. BURBIDGE, Trinity College Gardens, Dublin, that gentleman writes to disclaim the honour of having done so, stating that this is due to Mr. BEDFORD, gardener at Straffan House, Co. Kildare.

PHYLLOXERA LAWS IN RUSSIA.—In order to protect Vines in Russia against the introduction of the Phylloxera, the Minister of the Interior, in conjunction with the Minister of Finance, has found it necessary to modify as follows the law relative to the importation, to Russia, of living plants, fruits, and vegetables:—

Article 1.—The importation, into Russia, of living plants (except Vines) coming from Germany, Belgium, Holland, Denmark, England, Sweden, and Norway, is permitted at the following frontier stations of Wiertzbolov (Wirballen), Alexandrovo, and Mlava; at all the White Sea ports, and also three of the Baltic, at Libau, Riga, and St. Petersburg; and at the Black Sea ports of Odessa and Batoum.

Article 2.—Consignments of living plants should be accompanied with certificates from the local authorities of the countries from whence they come testifying: *a*, that the packages do not contain Vine plants; *b*, that the individual or business-firm sending the plants is not engaged in Vine culture.

Remark 1.—Consignments of living plants will be delivered by the customs-house authorities to the consignees, if these packages be proved by written attestation not to contain Vine plants.

Remark 2.—The Imperial Botanic Garden of St. Petersburg and the Imperial Universities have the right of importing living plants from all countries without producing the aforementioned affirmations. These importations must be authorised by the Finance Minister for the Botanic Garden on the requisition of the "Minister of Domains," and for the universities by the mutual consent of the Finance Minister and the Minister of Domains, provided that the universities fulfil the obligations imposed by Article 1277 of the Custom-house rules.

Article 3.—The introduction of foreign Grapes of all descriptions, and *marc* of Grapes, is authorised through all custom-houses through which living plants can be imported, with the exception of the port of Batoum.

Remark 3.—Grapes sent from abroad must not be packed in Vine leaves.

Article 4.—The importation of fruits and vegetables of all species from foreign sources is authorised at all the custom-houses with the exception of those on the south-west frontier of the country, as far as, and including the custom-house of, Volotchisk.

Article 5.—The present law shall be in operation two months after its publication; that is to say, on November 24 (December 6).

TULIPS AT THE PARIS EXHIBITION, 1889.—In the last week of November the firm of E. H. KRELAGE & Son, Haarlem, Holland, planted in the Horticultural part of the Paris Exhibition six beds, each having an area of about 225 square feet, with late Tulips selected from their new collection of breeders. A large number of the tulips are of the most diverse

and splendid colours, and in more than 700 varieties. Messrs. KRELAGE are the first foreign exhibitors whose exhibit is already installed. The Tulip beds have received a place of honour in the large grass plot which surrounds the fountain in front of the Palace of the Trocadero. These bulbs, flowering usually about the middle of May, may be expected to be in bloom at about the time fixed for the opening of the Exhibition.

THE SEASON.—At one of the towns on the Kentish coast this week we noticed as still in bloom Roses of several kinds, Daisies, Pansies, Hollyhocks, African Marigolds, French Marigolds, common Marigolds, Marguerites, Godetias, Fuchsias, Clarkia, Silene pendula, Saponaria ocymoides, Chrysanthemums carinatum, in several forms, Convolvulus minor, Iberis amara, Wallflower, Rockets, Veronica Andersoni, and others; Antirrhinums, Mig-nonette, Centaurea Cyanus (Corn-flower), Poppies (P. somniferum), Larkspurs, Eschscholtzias, Coreopsis, Collinsia bicolor, Nigella, blue Nemophila, blue Passion-flowers, Pelargoniums, Tamarisk, Ligustrum ovalifolium, Primroses, Auriculas, Tritonias, Hydrangeas, and, of course, ordinary Chrysanthemums—these latter vigorous, full of bloom, and with a richness of colour which is conferred by sea air only. From Cornwall, on the other side of the kingdom, Mr. BOSCAWEN sends us blooms of the Lemon-scented Verbena (Aloysia), of JACKMAN'S Clematis, Solanum jasminoides, Rhynchospermum jasminoides, while a turkey hatched a brood of nine beneath an Abies Nordmanniana—certainly a very unusual occurrence at this season. From Mr. H. HARDY, Bures, Suffolk, come flowers of many various kinds of plants gathered in the open air, and which were mostly fresh and quite unblemished. We remark in the collection before us, Indian Pink, Rudbeckia, Sweet William, Hollyhock, varieties of Calendula, Carnations, Pansy, Stocks, and others more or less tender.

COSMOS BIPINNATUS.—Although introduced in 1799, this pretty half-hardy annual is very seldom grown in this country, and is but little known. The seed may be sown in the open border in April, and it will eventually grow to about 3 feet high, bearing a quantity of claret-coloured flowers similar to single Dahlias in form and size, the finely cut foliage adding greatly to the distinct and pleasing character of the plant.

SMITHFIELD CLUB SHOW.—This annual event opened on Monday, December 10, at the Agricultural Hall, Islington, and the usual complement to the show of live stock—which, by the way, was larger than in the previous year—was made by the seed trade which had large displays of Mangels, Swedes, Kohl Rabi, grass seeds, seed corn, Potatos, &c. We remarked in the galleries stands of these farm products set up by Messrs. Gibbs & Co., whose specimens of Robinson's Ox-heart Cabbage were very fine; and the various fodder grass plants shown in the dried state. A small stand of roots, seeds, &c., was exhibited by Messrs. Oakshot & Millard, of Reading; that of Messrs. Webb & Sons, Kinver, Stourbridge, was of great extent, and was arranged as a bank rising from the floor to a height of 15 feet—roots of various kinds were the most important items on this stand; although farm seeds were likewise largely shown, including fine samples of Kinver Chevalier Barley and Challenger Wheat. Messrs. Raynbird, Caldecott, Bawtre, Dowling & Co., Basingstoke, showed an excellent lot of cereal and other seeds, roots, &c. The exhibit of Messrs. Carter & Co., Holborn, of roots and seeds was very extensive, especially the sections of grass seeds and Potatos. Carter's Imperial Globe Turnips were remarkable for size and fine form. A smaller stand was set up by Mr. John King, Coggeshall, Essex, consisting of Potatos, Kohl Rabi, and other field roots. Messrs. Sutton & Sons, Reading, had their usual large stand well filled with fine specimens of all the kinds of roots grown on the farm;

large quantities of seeds of all kinds, with special grass mixtures for certain kinds of soil. Their Intermediate Carrot is a very superior strain. Messrs. Harrison & Son, Leicester, showed a stand of farm seeds and roots, and a very fine strain of Leek. Forest trees, grasses, and the new hedge plant, the Cherry Plum—Myrobella is the trade name—were exhibited by Dicksons (Limited), Chester, and, lastly, the Agricultural and Horticultural Association made an interesting exhibit of roots of all kinds, seeds, manures, feeding stuffs, &c.

THE NEW VEGETABLE.—A name is wanted for the tubers of Stachys tuberifera. The name used in the Paris markets is Crones, from the locality whence they were introduced into the market, and which would be pronounced as if written Crones in English. Old Crones is not a complimentary epithet for a new vegetable of such merit. Messrs. CARTER, we see, adopt the name Chinese Artichoke, which would be appropriate but for the fact that they are neither of Chinese origin, nor are they Artichokes. Why not call them Stachys?—not a very difficult word to pronounce.

LYCIUM BARBARUM AS A SEASIDE PLANT.—For holding up slipping banks there are few plants to surpass this. It forms a profusion of long, thin, underground runners, which interlace, and from which are sent up a profusion of leaf-buds, which form new plants. This is another instance of a plant, native of a warm temperate, or even subtropical country, which is nevertheless hardy here, like the blue Passion-flower of Brazil or the Tritomas of South Africa.

NEW USES FOR MEXICAN FIBRE.—It is stated in the October number of the *Brushmaker*, that Mexican fibre, or Ixle (Agave heteracantha), which has of late been so largely used for scrubbing and nail-brushes, has, for many years past, been also used in the manufacture of corsets, principally in Norfolk, Suffolk, and Essex, especially in the very large factory at Haverhill in Essex. It is also said to be woven into cloth suitable for window-blinds, screens, &c., and in hot climates, when it is used to keep the doors and windows open at night, these blinds would be very useful. Quite recently the fibre has found favour in unexpected quarters, as it is now being very largely used in the manufacture of artificial flowers. Notwithstanding these uses, and others which may yet be found for it, the great demand for it is still for brushmaking—a demand that is increasing both in this country and in every part of Europe.

THE NATIONAL AURICULA AND CARNATION AND PICOTEE SOCIETIES.—A largely attended meeting of the committee of the London Societies took place, by the permission of the Horticultural Club, in their rooms at the Hotel Windsor, on Tuesday, the 11th inst., the Rev. H. H. D'OMMRAIN in the chair. The minutes of the last meeting having been read, it was resolved that the offer of the Council of the Royal Horticultural Society, to give the sum of £10 to each of the Societies, be accepted; and it was arranged that the exhibition of the National Auricula Society should take place in the Drill Hall, Westminster, on Tuesday, April 23, in connection with the meeting of the Royal Horticultural Society on that date; and that of the National Carnation and Picotee Society on Tuesday, July 23, also in conjunction with a meeting of the Society. The Council having expressed a desire that something in the form of a conference should take place at each of the shows, having reference to the particular flowers exhibited, by way of imparting additional interest to the Society's meetings, a sub-committee, consisting of the Rev. H. H. D'OMMRAIN, H. SECRE LEONARD, R. DEAN, and J. DOUGLAS was appointed to make the necessary arrangements, and report at a future meeting of the committee. The schedule of prizes offered at the exhibition of the National Auricula Society was passed in the form in which it appeared at the last

show, and a few alterations were made in that of the Carnation and Picotee Society. It was decided that yellow-ground flowers be no longer shown with selfs and fancies, as there is a class for them; that for twelve blooms was reinforced by one for six blooms, it being understood that yellow selfs can also be shown as yellow-ground flowers. Mr. DOUGLAS having drawn attention to the fact that there is in the hands of the Treasurer a balance from the two Societies amounting to £40, suggested that a portion of this should be invested as a reserve fund, and eventually it was agreed that £25 should be set apart for the purpose of forming a reserve fund, it being left to the Rev. H. H. D'OMBRAIN, H. S. LEONARD, and J. DOUGLAS, to make the best investment they could. The proceedings closed with votes of thanks the Horticultural Club, and also to the Chairman for presiding.

THE PRODUCE OF CORK IN SPAIN.—The Cork trade in Spain seems to be in a flourishing state. The exportation to other parts of the Continent, as well as to England and America, was greater last year than it has been for several years past. It is stated that there has been the greatest demand for the superior kinds of corks, such as those for champagne bottles. Gerona is the most important centre in Spain for the production of cork, hundreds of cork manufactories being scattered over the province. In the town of Palamos alone there are forty, and the exportation thence is considerable. From St. Felin de Guixols (Gerona), it is reported that the Cork trees have been suffering from the attacks of a pest which threatened to destroy them. A voracious caterpillar or worm has, it is reported, been attacking the Cork forests in millions during the past year or two. In a very short space of time it stripped the trees of all their leaves from the tips of the branches to the trunks. These worms are now in their turn said to be attacked and devoured "by another insect, a species of beetle of a dark green colour, and armed with a horn, with which it cuts the worms up. Another insect, in the form of a crab (*cancrejo*), pursues the worms, and destroys them; and thirdly, when the caterpillar has passed through its metamorphosis, and the butterflies have deposited their eggs, another insect, until now unknown, attacks and pierces the bags containing the new genus, and destroys them; all of which will contribute, no doubt, to the complete extinction of these destructive caterpillars."

MILDNESS OF THE SEASON.—Mr. TOMKINS, writing December 10 from St. Mary, Scilly Isles, says:—"In consequence of the mildness of the season Narcissus are in a very forward state, from Early Paper White to the late-flowering varieties. Here and there may be seen a stray bloom of Early Paper White and Soleil d'Or; should the weather continue fine Covent Garden will in all probability receive consignments during the first week in January. I am cutting from the open ground Christmas Roses, white Arums, and Freesias."

THE EDINBURGH CHRYSANTHEMUM SHOW.—Notwithstanding the inclement weather which prevailed on both days of the above show of the Scottish Horticultural Association, it is gratifying to find from an informal report to the Council by Mr. McKENZIE, the Treasurer, that the receipts cover the expenditure, and leave a few pounds of a balance in favour of the show.

ROYAL CALEDONIAN HORTICULTURAL SOCIETY.—The annual meeting of this Society was held in a side room of the Music Hall, Edinburgh, on the 6th inst., H. H. NORRIE, Esq., Coltbridge Hall, in the chair. The attendance of members was larger than usual in recent years. The minutes of the last annual meeting having been read and adopted the Treasurer—Mr. NEILL FRASER—gave an abstract of the accounts for the year ending November 30 last. The total receipts for the year

were shown to have been £1258 3s. 10d., and the payments £1002 18s. 6d., leaving a balance in favour of receipts of £255 5s. 4d. The funds on hand on November 30 last were £1117 12s., being an increase on the previous year of £238 13s. The report was approved. The Marquis of Lothian was unanimously re-elected President of the Society for the year. Sir JAMES GIBSON CRAIG, on the recommendation of the Council, was elected Vice-President in the room of the Earl of Stair, retiring from the office. To fill the vacancies on the Council created by the retiring members—Mr. JAMES ALEXANDER, nurseryman; and Mr. McLEOD, gardener—the names of Mr. JOHN METHVEN and Mr. JOHN LAMONT were put up for the former, and those of Mr. MALCOLM DUNN, Dalkeith, and Mr. GORDON, of Niddrie, for the latter vacancy; but as both Mr. LAMONT and Mr. DUNN declined to have their names put to the vote, Mr. METHVEN and Mr. GORDON were duly elected. The meeting terminated with a hearty vote of thanks to the Chairman.

SEEDLINGS OF SUGAR-CANE.—The Sugar-cane has been cultivated for so long a period that its native country is unknown. BENTHAM states that "we have no authentic record of any really wild station for the common Sugar-cane." Further, according to the *Kew Bulletin* for December, the Sugar-cane so rarely produces mature seeds that no one appears to have ever seen them. In botanical works the subject is often mentioned, but apparently only to restate the fact that observers in all countries "have never seen the seed of the Sugar-cane." The authorities at Kew have been working at this subject for several years. It was felt that if a Sugar-cane producing ripe seeds could be found, a most interesting and important line of inquiry would be opened for improving the saccharine qualities of the Sugar-cane in the same way as that so successfully adopted with regard to the Beet. Hitherto the Sugar-cane has been reproduced under cultivation solely by means of buds and suckers. The improvement of the cane has therefore been restricted to chance variations occurring at wide intervals, and probably escaping altogether the observation of the planter. Now all this is likely to be changed. It appears that at Barbados seedlings of Sugar-canes have been successfully raised by Professor HARRISON, and among these seedlings are several different kinds indicating hybridity of a definite sort, such as would be expected to arise from the crossing of different varieties. It is to be hoped this subject will be fully and clearly followed up as a definite field of investigation. In any case the possibility of improving so important and valuable a plant as the Sugar-cane possess general interest.

THE SCOTTISH PRIMULA AND AURICULA SOCIETY.—This Society held its second annual meeting in 5, St. Andrew Square, Edinburgh, on the 6th inst., Mr. MALCOLM DUNN occupied the chair. The Secretary and Treasurer, Mr. WILLIAM STRATON, Dundee, submitted his report for the year, which was in every way satisfactory, there being a balance in the Treasurer's hands of £10 4s. 6d. to the Society's credit. The question whether in the light of the experience of the past two shows, in which the classes were open to all comers, a reconstruction of the schedule should not be determined upon, so that growers in late and unfavourable localities may not find themselves pitted against those from the southern and favourable districts, was discussed, and the feeling of the meeting being in favour of some such alteration, it was remitted to the Council to fully consider and give effect to the matter in next year's schedule. The date of the show for next year was fixed for May 9, and the meeting closed with a cordial vote of thanks to the Secretary and the Chairman.

CLERODENDRON NUTANS.—This is a white-flowering kind, not generally catalogued in gardening books, but it should be grown in all stove collections. It is much admired, and coming into flower during the months of November and December makes it all the more appreciable.

NOTICES OF BOOKS.

THE PRINCIPLES OF AGRICULTURAL PRACTICE AS AN INSTRUCTIONAL SUBJECT. By John Wrightson, &c. (Chapman & Hall.)

This work embodies the substance of a course of lectures given to science-teachers with a view to show them that the principles of agriculture are capable of being taught in the lecture-hall or the school-room, although agriculture, as the author tells us, is an occupation requiring experience for its successful prosecution. This is, of course, quite true, but the value of the experience, and the power of applying it to useful ends, depend very materially upon the training that the farmer has had in the principles of his art as well as in the practice. The book before us is peculiar in its object. It is not professedly concerned with the teaching of agricultural principles, though in point of fact it does teach a great deal of them. It is rather designed to instruct other people how and what to teach. For this purpose the experience of a teacher, a farmer, and an examiner, must needs be of value, and Professor Wrightson combines all the requisites; for instance, he is in an excellent position to show in what degree chemical analysis is valuable to the farmer or gardener, and in what respects it is worse than useless. The analysis of the ash of plants, upon which so much stress is laid by chemists, is really of very secondary importance to the cultivator, inasmuch as it shows rather the results of cremation than the composition, still less the action, of the living plant. An ordinary science-teacher, fresh from the chemical laboratory, is not likely to recognise this, and he might, from his point of view, recommend silica as a manure for Wheat, or nitrogenous fertilisers for Clover, though, from a practical point of view, very unnecessarily so. So, too, a teacher, fresh from the lecture-room, might easily fall into the prevalent notion that weeds are wholly objectionable, when, in point of fact, they are valuable as indicating a highly fertile soil: weeds will not grow luxuriantly on a poor soil, and the farmer may judge by their presence and condition of the quality of his soil. It is his business either to substitute some other plant for the weed, or, if he can, to turn the weed itself to account, and thus avail himself of the richness of the soil to useful instead of useless purpose. With reference to this point Professor Wrightson tells us that the presence of Bracken is a good sign while that of Heath is a very bad one, but it may be pointed out that the two often grow together, and, moreover, the presence of the Heath does not necessarily indicate a bad soil, but only a soil ill-adapted for plants which are not provided with the very fine fibrous roots which are characteristic of Heaths. Incidentally we may mention with reference to the suitability of particular soils, for particular plants a remark made by Mr. Wrightson that *Trifolium incarnatum* "will not grow at all upon white chalky soil." We will not presume to question the general accuracy of the Professor's dictum, but it is certainly within our knowledge that the plant is sometimes grown on the chalky hillsides in Kent, both near to and at a distance from the sea, and that, to all appearance, it thrives as well as its near ally, the Sainfoin.

In dealing with the subject of grassland Professor Wrightson points out that it often happens that the seeds swept up from the hayloft often produce more satisfactory results than more expensive purchased seed. This may well be, for the seed is probably all new and good, it is native of the soil, and it is mixed with other seeds, producing an association of herbage, if we may so speak, which is but imperfectly imitated by the seedsman. There is, we are convinced, much in the association of particular plants in pasture, and particularly in meadow-land, which is not yet appreciated either by the botanist or the farmer. From this point of view the weeds found in pasture-lands may not be all evil. In certain seasons and under certain circumstances they may protect and shelter young seedling grasses and

Clovers at critical times; they may afford food for slugs and insects that would otherwise prey on the grasses, and in a variety of ways they may prove beneficial rather than the reverse. These things are matters requiring observation. The great value of scientific training for cultivators of the soil seems to be that it affords a broader and more varied basis for the experience of the practical man to work upon.

Routine practice has, of course, much in its favour as the outcome of experience; but that experience is much too limited in its range, and while it is not calculated to further progress, still less is it adapted to new conditions and altered circumstances. Professor Wrightson's work reads like a series of essays rather than a continuous treatise; but, in any case, it is one which we can most cordially recommend to the attention of the thoughtful cultivator.

THE BOOK OF THE FARM. By Henry Stephens. Fourth edition, by James Macdonald. (Blackwood & Sons.)

The fact that this standard work now reappears in a fourth edition is a sufficient guarantee that it is adapted for the purpose it was intended to fulfil. Moreover, the editor tells us that he has carefully revised the greater portion, while some part of the book has been entirely re-written. The eminently practical spirit in which the work is conceived will commend itself to many. It is divided into three heads—Initiation, or instruction in first principles; Practice, detailing the entire series of operations on the farm, whatever be its nature; and Realisation, under which are included the details concerning the stocking of the farm and the various financial transactions connected with it, comprising, we presume, the art of marketing. The volume before us opens with a statement as to the different kinds of farms, and the duties of the several persons who conduct its business. Then follows a section on the sciences applicable to agriculture, occupying some twenty pages, and therefore, as may readily be surmised, meagre in the extreme, the section relating to botany occupying about three columns! while the subject of germs is dismissed in a dozen lines, and under the heading, "Productions of Nitrates in Soils," not one word is said as to the action of the aforesaid germs. Such cursory treatment of the general principles upon which all cultivation, whether of animals or plants, depends, is, it must be admitted, unsatisfactory; but it must not induce the reader to suppose that the other portions of the volume are treated with equal inadequacy. On the contrary, the explanations are full and clear, and the precepts excellent.

TREES AND SHRUBS.

ESCALLONIA MACRANTHA.

This beautiful, flowering shrub is frequently met with as a wall plant, and in that form it has no chance of showing its floriferousness, such as is the case when growing unrestrained. The other day, when passing Battle station, we noticed a specimen which had been planted against a low wall, but owing, I suppose, to want of time or knowledge, the plant had long since been allowed to outgrow its original boundary, and had risen much higher, as well as taken possession of a part of the opposite side of the wall. The plant was flowering very profusely. Its long racemes of red flowers, backed by the bright green foliage, had a peculiarly graceful effect. We thus had an opportunity of seeing this fine old shrub in finer condition than usual. *F. R.* [The shrub in question is twenty years old. For sea-side planting it is highly to be recommended. Ed.]

ATHROTAXIS (THE JOINTED YEW).

This is a very interesting genus of small trees or shrubs, natives of New Zealand, and as they occupy but small space, and are very distinct in character and appearance from other ornamental plants, on

this account they are well worthy of the attention of amateurs and others who possess places of small extent.

A. cupressoides I have found to be the hardiest and the easiest grown of any of the group; and although all of them are improved by shelter, yet this species in particular should never be confined, as it is apt to get drawn up, and then presents a slender lanky appearance. When properly grown it is a very ornamental plant, and is well furnished with branches, which are often divided into threes, and occasionally forked. The leaves are of a glossy-green colour, without footstalks, imbricated, and lie close to the twig or branch. It seldom requires pruning, with the exception of cutting back or pinching out the terminal bud, or cutting off a rival leader at the top when it occurs. All the species like a rich free open soil, thoroughly drained, well trenched, broken up and pulverised to a depth of about 20 inches. Strong adhesive clay soil is inimical to their proper growth; therefore, when it is desirable to plant a specimen on such soil, the site should be prepared for it by adding to and mixing a quantity of bog-earth or other loose material with the staple, so as to render it more genial. On the other hand, light sandy soil should have a quantity of clayey loam incorporated with it. When planting the trees the roots should be carefully spread out in all directions from the base of the stem, covered with fine soil, and finished in the ordinary way. I need hardly say that the plants should be protected from rabbits and vermin of every kind, and I have found it an advantage to stick a few Spruce Fir branches into the ground around the plant, to afford additional shelter until such time as the roots become established.

A. laxifolia (the loose-leaved Jointed Yew).—This is not such a free grower as the former, but where it thrives it forms a pretty little specimen bush, whose proper place is the lawn. The leaves are rather thick and fleshy, sharp-pointed, and of a yellowish-colour, and stand out from the branch or twig. The lateral branches often assume a pendent habit, rendering the plant still more interesting. It may be planted with success in closer and more shady places than *A. cupressoides* will endure, as it is not so apt to be drawn up under such-like conditions.

A. selaginoides (the Cypress-like Jointed Yew).—This pretty little tree is said to attain a height of about 30 feet in its native habitat, but in this country it is of very slow growth, and even under the most favourable circumstances as regards soil, site, and shelter, it only attains the size of a small bush. Its habit of growth and general contour are quite distinct, and those who have a partiality for variety and have but limited space, should give it a trial in a sheltered situation. Under favourable conditions it has an upright habit of growth, and is generally well furnished with flexible twigs and branches of a lively green colour. These plants are seldom to be seen even in first-class collections, which may be partly accounted for from the fact that their hardiness cannot be depended upon when planted on exposed places or at high elevations above the sea-level. I have been enabled to grow by far the finest specimens of these trees in Ireland, where the climate is milder, frosts less intense, and of shorter duration than in this country; notwithstanding which, there are many parts of this country where its successful cultivation would be a certainty. *J. B. Webster.* [We have ventured to alter the names given by the writer, in conformity with the results of our investigations into the botany of the genus. See Nov. 10, 1888, p. 545. Ed.]

SAMBUCUS RACEMOSA.

Whether it be owing to climate, or whether this species is more commonly planted in the North than it is in the South, its bright scarlet fruits are very rarely seen in South-country gardens. Whatever the reason for this, there can be no doubt about its ornamental value as a bright-coloured autumn-berried shrub; and of this I was reminded recently when visiting the gardens at Crathes Castle, Kincardineshire, where in a recently formed shrubbery it was observed in fine condition. The plants had been well cut back the previous year, and the sturdy growths which they had made this year bore

clusters of brilliant red fruits, which were all the more conspicuous as the early frosts had nearly stripped the plants of their foliage. *F. Ross.*

FLORISTS' FLOWERS.

NEW CHRYSANTHEMUMS.

It is high time the English growers of Chrysanthemums, and especially those who cultivate for exhibition, should enter a protest against nearly, if not quite, all, the so-called new and incurved varieties being sent to this country from France and America. The one exception to the general condemnation is Delaux's *Perle Précieuse*, sent out in 1887, and considered to be good enough to be included in the last edition of the National Society's Catalogue. It is there described as rose-purple, with a silvery back to the florets, which are broad, and of medium size, and a mid-season variety. It is a very pretty variety, with a broad solid petal, of good form, but does not come large enough to be included among the exhibition flowers. The French raisers appear to be coming round to the conviction that the long lists of Japanese varieties they have been announcing for years past—so many of them being of only second-rate quality—are no longer bought up so eagerly as they once were by our growers, and they seem to be turning their attention to the incurved section; but as yet with indifferent results. Another danger threatens the grower, that of some exhibitors renaming imported flowers. A strong protest was entered against the practice at the meeting of the Floral Committee of the National Chrysanthemum Society on the 21st ult. This is, indeed, a misleading and unjust proceeding, which cannot be too strongly condemned.

The recently-published Catalogue of the National Chrysanthemum Society contains a list of eighty incurved varieties, more than one-fourth of which have originated as sports. Indeed so sportive is the Chrysanthemum, that of recent years we have obtained finer incurved forms from sports than from seedlings. Three new forms in this section are announced for distribution in the spring of next year—all sports; they are Miss M. A. Haggas, which gives exhibitors what they have desired to obtain—a golden Princess of Wales. This sport came from Mrs. Heale, which is itself a very fine pure white sport from the delicate rose-tinted Princess of Wales. The second is H. Shoesmith, a bronze-coloured sport from the well-known golden Mr. Bunn, which in its turn is a sport from Golden Beverley, being much deeper in colour, and a favourite early variety. Lastly is Miss Violet Tomlin, which gives us a companion to the purple-coloured Refulgens, but a much more reliable flower for exhibition purposes. Refulgens, though of a fine tint of purple-maroon, is invariably small, and frequently comes with an open centre. The new form is a sport from Princess of Wales, and is of a bright purple-violet shade, and quite as fine.

Exhibitors of Chrysanthemums now possess three valuable groups of incurved Chrysanthemums most useful for show purposes. They are the "Queens," under which heading may be placed Alfred Salter, Bronze Queen of England, Emily Dale, Empress of India, Golden Empress of India, Golden Queen of England, Lord Alcester, and Queen of England—a group which gives the largest and finest back-row flowers of the incurved section. Then Princess of Teck gives a smaller but scarcely less useful set; they are—Charles Gibson, Hero of Stoke Newington, Lord Eversley, and Mrs. Norman Davis. Now we have a third series, of which Princess of Wales is the original type. They are the new varieties described above, viz., Miss M. A. Haggas, and Miss Violet Tomlin, Mrs. Cobay, and Mrs. Heale; while another fine sport is promised for next season.

It has been suggested that it would add a new interest to our Chrysanthemum exhibitions if prizes were offered for the members of these different

groups. The National Chrysanthemum Society might fitly comprise such classes in its schedule of prizes for 1889, only that the schedule appears to be already sufficiently bulky. *R. D.*

THE YELLOW PICOTEE AND CARNATION.

A notion prevails that these choice plants are more difficult to cultivate than other varieties of the Carnation and Picotee. Probably years ago this might have been the case; and even in recent years some varieties have been found with a delicate constitution, while others are more robust. My own experience extends to something like thirty years, and within those years the earliest known to me, which I was also able to cultivate, were Prince of Orange (Perkins) and Ascot Yellow (Standish). These two varieties I obtained at one time, and the first named was an illustration of a vigorous growing variety, and one which kept up its vigour until now; whereas the Ascot Yellow, though vigorous at first, speedily declined, and I believe it has now gone out of cultivation.

Some fifteen years ago Mr. Charles Turner, of Slough, raised about 250 seedlings from Perkins' Prince of Orange. It was a sight not soon to be forgotten to see that lot of seedlings in flower, and a selection of them was sent out, after being exhibited in capital form at the various London exhibitions. I allude to them because we obtained a number of the best varieties when they were sent out, and had a good opportunity to study their character as regards constitution. Most of them were vigorous, but a few were not so, and very difficult to increase.

Seedlings have been raised from the vigorous growing varieties, and an advance has again been made, both in quality of the flowers and vigour of constitution. The point for raisers to attend to is to raise plants that will grow well out-of-doors, and make useful border plants. The varieties of fifty years ago were weakly constitutioned, as we learn from Hogg, who writes, in his *Practical Treatise*, that "The yellow Picotee is at all times a difficult flower to grow in this country, on account of our moist atmosphere and long winters. The Dutch florists have had success with it for the same reason." Hogg gives a coloured plate of a yellow Picotee in his treatise; but it is a fringed edged thing, flaked with crimson, and well marked with red lines. An earlier plate of a true yellow Picotee, raised by Hogg, is figured in the *Floricultural Cabinet* for the year 1835. It is named *Publicola*; the ground colour is deep yellow, with a heavy scarlet edge, but those early plates are not very truthful. Many varieties were grown by Hogg, all of which are now lost to cultivation.

A grower in the Midlands, of the name of Smith, greatly improved the yellow Picotee after the death of Hogg. Mr. Simonite and the Rev. F. D. Horner, who saw the flowers when in the raiser's hands, have told me that they possessed the best qualities of the white ground varieties, but in some instances were of a paler yellow than Hogg's strain is represented to be, owing to his crossing with the best white ground forms to obtain quality of bloom. My own batch of seedlings of the Prince of Orange type I need not say anything about, because they have been exhibited so frequently, and have been grown in our own garden, and also in Mr. Turner's nursery at Slough. Mr. Dodwell is sending out no fewer than fifty-one varieties this season. I have not seen any of them, but as far as I can make out they are neither flaked Carnations nor edged Picotees. They will doubtless be grown somewhere else next year, and we shall be able to criticise them. I merely mention them because they are in existence, but it is surprising if such a large number are sufficiently distinct from each other.

Out of many hundreds of yellow ground varieties, I have raised several that are decidedly flaked Carnations; but a flaked Carnation on a yellow ground is a poor thing of decidedly sickly aspect when compared with the lovely bizzarres and flakes on white grounds already in existence. I cannot say what yellow ground flaked Carnations may be capable of

in the future, but at present I am not much taken with them; and yet, if we may trust to the veracity of a coloured plate of one in the old *Horticultural Register*, vol. v., for the year 1835, the contrast of colours in crimson and gold is very beautiful. What we want is the rich yellow ground and decided crimson flakes. The variety is named Rodger's Unique Golden-crimson Bizarre. It was raised in Kent, from seeds obtained from Brussels, and was evidently of weak constitution, slow to increase, and was soon lost to cultivation. They expected good prices for choice flowers at that time, as this one was sold at a guinea per pair.

The yellow selfs are greatly valued as border plants, and amongst a numerous family of them I still think highly of King of Yellows, raised by Dr. Abercrombie, and sent out many years ago from Slough. The market growers tell me it is the best to grow for cut blooms, as the petals do not curl up in the rather impure London atmosphere, whereas Pride of Penshurst has this serious fault. I find a large number of yellow selfs amongst the seedling Picotees; but one yellow is very like another, and it is only when we obtain one with persistent flowers of the character of King of Yellows, or one of a richer, deeper yellow, like Ernest Benary, that it is worth while propagating them. Of course a raiser of seedlings must be careful not to save too many of them; and unless he has a perfect knowledge of the varieties already in existence, he is apt to think rather too much of his own productions.

Raisers of seedling plants of any kind are well aware that it is not difficult to raise varieties as good as the parents; the difficulty is to surpass the parents and be also distinct in colour. There is ample room for improvement in all the sections of the yellow Carnation and Picotee, and whatever diverse opinions may be held as to the decorative qualities of the Picotee in preference to the Carnation, or *vice versa*, there can only be one mind as to the necessity of maintaining constitutional vigour in the plants, so that they may grow freely out-of-doors. One of the members of the Carnation Society has told me that he has some yellow Picotees which have a perpetual flowering habit. If we can get them to produce flowers all the year round it will be an unquestionable boon. As far as regards the cultural requirements of yellow Carnations and Picotees, I do not find them more difficult to manage than others. There are weakly constitutioned varieties in every section, but as a rule they pass out of existence within the next decade after they have been raised, whether they are yellow or white ground varieties; indeed, I have found far more difficult subjects amongst the white ground than in the other section; in fact, Ascot Yellow was the only one that I could not keep life in, and it did not lack for coddling in pots. It was a true perpetual bloomer. The late Mr. Standish, of Ascot, brought it to one of the winter meetings of the Royal Horticultural Society, where it obtained a First-class Certificate for its perpetual blooming habit.

In regard to the general treatment and propagation of yellow Carnations and Picotees, I recommend that they be propagated by layering if they are intended to flower at the usual Carnation time, in July and August. They also ought to be layered at that date, and treated in the way recommended in previous numbers. Those of a perpetual flowering habit—or if they are not of that character, but are intended to be forced—I recommend raising the plants from cuttings in the spring months. They may be propagated, as the cuttings can be obtained from January to the end of April. They will strike freely in a mild hotbed, or in a forcing-house. If the atmosphere of the house is likely to be dry, the cuttings may flag a little, and in that case they ought to be covered by a bell-glass; because they will not be likely to make strong healthy specimens if the cuttings are not kept in a plump condition until roots are formed. The young plants should also be potted off as soon as they are fairly rooted, and be grown on while the weather is cold in a light airy position in the greenhouse, to be inured to the

open air while the weather is warm during summer. *J. Douglas.*

WINTER-FLOWERING CARNATIONS.

I think we may now safely get rid of the designation Tree Carnations as a kind of floral anachronism, and employ instead the happier and more fitting term, winter-flowering. The fact is that the long, lank, drawn habit of growth that characterised the Tree Carnations twenty-five years ago has quite disappeared, and the new varieties constantly being introduced are of a dwarf and free growth, and in many cases do not exceed 2 feet in height, and are even dwarfer. The tall habit of growth seen in past varieties was caused to a large extent by improper treatment: they were wintered in a warm greenhouse, and summered in glass-covered frames, and so induced to assume a lanky growth until it was assumed to be a natural characteristic. I can remember winter-flowering Carnations 4 feet in height, that produced three or four flowers only at the tips, and the stems were naked, and quite devoid of any-think like grass.

The new varieties being sent out from Slough and elsewhere show quite a new type. We have now many fine varieties of dwarf, free bushy growth, that put up several flower-stems, and that carry a number of blooms undreamt of by those who knew the winter-flowering Carnation in its early stages of development. This is a decided gain; any one has only to visit the Royal Nursery, Slough during the winter to see how marvellously free of bloom many of the new varieties are; and Mr. Turner states he can cut bushels of flowers during the autumn, winter, and early spring seasons.

The system adopted of planting out the seedlings during summer is a good one; and as compared with the old plan of keeping them in pots, saves a good deal of time and labour. The seed is sown in February, or about that time; it germinates in a gentle bottom-heat, the plants, as soon as they are large enough to handle, are pricked off, and finally placed singly in pots, and then planted out in a well-prepared bed in the open ground. Here the plants grow freely and strongly, and throw up many flower-stems; in October the plants are lifted, potted, and when somewhat established, carried into a house where some artificial heat can be employed to assist them in getting into bloom.

It must not be supposed that anything like forcing takes place. Air is given freely, except where it might be hazardous to do so, and the artificial heat applied is simply for the purpose of keeping the atmosphere dry, and assist the flowers to expand. Hundreds of flowers are cut from the airy, roomy Carnation-house at Slough during the winter.

The best thing to do with the plants after they have gone out of bloom is to again plant them out in the open, so that they can make young growths from which to procure cuttings. By August there should be plenty of these, and the best thing to do is to pipe them as one would Pinks—strike them in a bottom-heat, and by November have them rooted and potted singly in pots to stand the winter. This is much better than leaving it until spring before cuttings are struck, as the plants are so much stronger, and bloom earlier, and much more freely in consequence. There is, I think, another advantage about planting out for the summer. A little seed may be obtained from the later blooms. The summer flowering Carnations will sometimes show a tendency to assume the winter flowering character. I have an instructive illustration of that tendency just now in the case of the fine yellow self-coloured Germania. A strong plant threw up five vigorous flower-stems, which bloomed in the summer, and towards the end of the summer threw up a third which has now developed three fine buds. The grass was duly layered, rooted, and potted off, and the old plant is now breaking out into growth at almost every point. The plant is now under glass, but whether I shall succeed in getting the flowers to expand in an unheated house remains to be seen. But this plant will give me a good supply of pipings

by spring, and I can either root them in heat, or place the plants out in the open to bloom through the summer.

Some seedlings from summer blooming Carnations show the winter blooming habit; they failed to flower during the summer, but they threw up flower-stems late, and I lifted the plants and potted them, and they are now coming on to flower in my cold house. But whether I shall succeed in flowering them with only such solar heat as may be vouchsafed during the winter, remains to be seen. *R. D.*

for twelve plants of *Primula sinensis* and some truly marvellous plants were staged by Mr. Hall, gardener to C. N. May, Esq., Elm Lodge, Devizes, in 8-inch pots, the foliage showing a diameter of from 2 to 2½ feet; and having many flower-stems crowned with fine blossoms. Some fine plants were brought from Birmingham by one of the leading *Primula* cultivators there, but they fell decidedly short of the home-grown specimens. There was nothing of a drawn character about the foliage; it was short, stout, and robust.

advances a little more heat is given, with weak liquid manure about twice a week. That such huge plants could be obtained in eleven months is really surprising, and it appeared to be a new revelation in regard to *Primula* culture; but the fact illustrates what can be done with the Chinese Primrose under high-class cultivation. *R. D.*

CULTURAL MEMORANDA.

TILLANDSIA LINDENIANA.

This is a pretty compact growing inmate of the stove, and produces, from the crown, which is surrounded by upright recurved leaves, erect flattened spikes of lovely blue flowers. The species is increased by potting up the suckers which spring from the base of the plants, in small pots, using peaty soil. These should then be given water, to settle the soil about the roots, and be placed in a moist warm house or pit to develop themselves.

THE ALOASIA.

Of these plants there are now many handsome species and hybrids in cultivation. The leaves of many of these are large, with rich markings, and all of them possess more or less beauty and stateliness. They are increased by potting divisions of the crowns, suckers, and offsets in a mixture of peat and loam, growing them on in a warm stove, and keeping them moist at the roots.

RONDELETIA SPECIOSA.

If cuttings of this somewhat slender-growing subject of the stove are put in now in small pots filled with peaty soil, and be treated as indicated above, stopping them once or twice when growth has commenced, after each shift into larger pots, they will attain to useful dimensions by next summer, when they will produce bright red trusses of Verbena-like flowers from the points of the young shoots.

BULBS—HYACINTHS, &c.

Hyacinths, Narcissus, Tulips, and Jonquils, which are now showing flower, will now be assisted by giving them frequent waterings of tepid liquid manure until the last pip and flower has been opened, when applications of clear water will suffice. From the time the flower-spike appears, until the plants have done flowering, the soil in which they are growing should not be allowed to get dry. *H. W. Ward.*

FRUIT REGISTER.

PEARS IN 1888 AT BELVOIR.

THE late season, although ungenial and unfavourable, has not been without its lessons to those who cultivate Pears, as well as to others who desire information to assist them in selecting suitable kinds likely to repay the trouble of growing under all circumstances of weather. Deriving many of our Pears from countries enjoying a higher summer temperature than our own, it is not surprising that a dull, cold season such as that of 1888 should affect unfavourably the quality of fruit. As to what extent this has been the case, and what kinds have proved most capable of elaborating the saccharine juices that help to give Pears the qualities we seek in them, it is important that information should be obtained, and that from different parts of the United Kingdom. As a rule, English-raised Pears and Apples do best in our climate, and this fact should stimulate those who have the opportunity to pursue the practice of crossing and raising seedling fruits—Pears especially. When we have a National Horticultural Society supported as Kew is, I hope fruit tree improvement will be one of the works taken in hand.

I add a few notes descriptive of the influences of the late season on the Pears grown at Belvoir. I may mention that we are in the North Midland district, 110 miles north of London; the altitude of the



FIG. 99.—PINUS LARICIO, CORSICAN PINE. (SEE P. 692.)

PRIMULA SINENSIS IMBRIATA AS AN EXHIBITION PLANT.

It is a frequent custom for compilers of schedules of prizes to make classes for plants of *Primula sinensis* at Chrysanthemum shows held during November, but those who are accustomed to visit Chrysanthemum shows have to admit that Chinese Primroses are one of the poorest of features generally. I think it is because little or no effort is put forth to grow the plants to anything like perfection. The invariable rule seems to be to cultivate Primulas simply as a part of the routine of winter decoration, and not to put forth any attempt to draw out the possibilities of development lying within the plants. But when it is attempted as at Birmingham and other places, it is surprising what results follow. At the recent Chrysanthemum show held at Devizes, handsome prizes were offered

Mr. May states that the seed from which these plants were grown was sown the first week in December, in a stove in which the day temperature was about 65°; when the plants were large enough to handle, they were potted singly in small pots, the compost used being made up of one-third leaf-mould and two-thirds loam, to which was added enough silver-sand to keep it nicely open, and a little charcoal to keep it sweet. The young plants are kept growing on in the same temperature, repotting them when necessary, till they are placed in the blooming pots, which should be well filled with roots by the end of May. Then the plants are placed in a cold frame until the end of July, as a kind of summer rest; then they are placed in a gentle heat, to excite them into growth and bloom. As the autumn

garden is 237 feet above sea-level; our rainfall averages 24 inches, and our soil is modified lias clay.

Jargonelle was fairly good in quality, and less affected than many others, and this applies to both wall and standard trees. Williams' Bon Chrétien (wall).—This fruit was small, very unequal in quality, many more softened, but shrivelled. Fertility (wall) was good, but the tree too small to produce a fair sample, but it is a promising fruit. Dunmore (standard) was juicy, and of good quality. Bergamotte d'Automne (east wall) failed to develop ordinary good qualities, and did not keep. Beurré d'Amanlis (wall) was inferior in quality, and did not properly ripen. Beurré superfin (south wall), though not so large as usual, was good in quality, melting, and the skin clear and bright yellow; undoubtedly one of our best Pears. Marie Louise (wall), although small, and irregular in ripening, still maintained its character as a high-class Pear. Some failed to soften, but even then were good. British Queen (west) is a seedling from the foregoing, and showing very much the character and qualities of its parent. Huyshe's Victoria (west)—an English Pear—was juicy, piquant, and fairly good. It is growing in favour with me. Maréchal de la Cour bore abundantly; was melting, juicy, but had less flavour than in good seasons. Beurré Suprême (east).—A rather small Pear, but one that never fails in quality or productiveness. In spite of the bad season, and an eastern exposure, it is one of the best November Pears this year. It seems little known. Pit-maston Duchess (west), although large and handsome, is of only second-rate quality in this latitude. It proved a melting Pear this season. La France (west).—A rather promising Pear, sent me by my old friend, Ferdinand Jamin, of Bourg la Reine. It proved juicy and agreeable. Beurré Diel is not usually a melting Pear, but this season it has proved so. Beurré Duboisson.—Small this year, but true to its character, a constant cropper. It is sweet and melting, but less high in flavour than usual. Beurré Hardy.—This useful Pear lacks its usual juicy sweetness this season, but it is still passable. The above represents the early and late autumn Pears. The result of the season on the winter Pears has yet to be noticed. *William Ingram, Belvoir, Nov. 27.*

HOME CORRESPONDENCE.

Correspondents will greatly oblige by sending early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

Photographs or drawings of gardens, or of remarkable plants, trees, &c., are also solicited.

ANEMONES.—In "November in the Garden," *Gardeners' Chronicle* for December 8, "L. A. L." has given us a very interesting account of the plants still blooming in his garden, but the frost of the early part of October was much less destructive with him than with us, for not only did it leave all the Dahlias a mass of rotteness, but every flower and bud on the Japanese Anemones was destroyed, showing them to be much less hardy than the varieties of *A. coronaria* which are still in full bloom with us. I would like to draw the attention of your readers to a great success we have this year achieved with the last-named flower as an autumn blooming plant. Early in August, 1887, I obtained a packet of new seed, which was sown at once in boxes; the seed grew readily and stood in the open air until late in the autumn, and during the winter had only the protection afforded by an unheated orchard-house. Early in the following spring they were planted out, part on a sunny border, and the remainder between fruit trees, where they would obtain partial shade. As they had grown so well all the winter, being at the time of planting 3 or 4 inches high, I expected they would have gone on with renewed vigour when transferred to the open ground; but in this I was disappointed, as they made very little progress above the surface all the summer; but I am inclined to the idea that they were not dormant beneath the surface, for by the end of September they began to grow

with amazing vigour, sending up stout leaf-stalks, that bore no resemblance to those made before they were planted out, and which they still retained; these leaves were soon followed by flowers, so that they made a good show by the end of October, and all through November we have been gathering three or four dozen blooms a week. I need not say how very useful we have found them for the decoration of the rooms, being so very distinct from other flowers blooming at this season of the year. *G. B.* [It will make matters clearer to our correspondent when we tell him that "L. A. L." writes from Ireland, whose climate is milder than ours. *Ed.*]

THE REDUCTION OF THE VARIETIES OF PEARS.—My idea anent this question was brought so prominently before your readers a few weeks since that I thought it unnecessary to take any part in the discussion now going on until I read the notice at p. 675 of last Saturday's issue. A single paragraph in a note on that page, signed "N. H. P." seems to me to settle the whole matter. It reads thus:—"It appears to me that the requirements of the family for whom the gardener has to provide as to quantity required, and the fertility of Pears in the neighbourhood must settle very largely the question of varieties a gardener grows." With this opinion I entirely coincide. The demand for the fruit here is not what I consider excessive; still, we are expected to have a supply good in quality and tidy to look at from August to March; and I say advisedly, and after many years' experience, that not twelve kinds, nor double that number, in some years, will ensure a constant supply of dessert fruit the season through. I note that Mr. Sheppard, at p. 641, does not say plainly that he has accomplished the feat with twelve varieties, and also fails to say in what manner "greater satisfaction" would be given to our employers if we grew but twelve kinds. I can only surmise that he means there are not more than twelve or fifteen varieties of first-rate qualities. I certainly could name half a hundred to which that designation would apply. Of course, it does not follow that I would grow them all, or advise others to do so; I would rather say, Lose no opportunity of learning, both by your own experience and from the practice of others, as to what varieties do best in your neighbourhood, and having settled that point, then, if needs be, reduce the number of kinds. No fruits differ so much as Pears do in different soils, aspects, and climates, and it is a part (and, to me, a very interesting part) of the gardener's duty to make right selection of kinds from practical observation. I will quote a case in point from Mr. Sheppard's list of twelve varieties at p. 535.—Beurré Rance—named in that list. No matter in what form or position it is grown, it is here in no season fit for dessert, but is one of the best we have for stewing; on the other hand, Doyenné Boussoch, which is not good with Mr. Sheppard, is invariably good here. It is these erratic freaks that Pears alone, of all fruits, seem to have licence to take, which make it desirable—not imperative, to grow a goodly number of varieties, and only by doing so is it possible to avoid a break in the regular supply of good fruit. *W. Wildsmith.*

I am very glad that Mr. Markham (p. 675) has put a black mark against Beurré d'Rance—not Beurré Rance. Never in my life did I but once taste this Pear good, and that was when there had been a very hot, dry autumn, when it was really excellent, from a south wall. I do not say that it might not be better from an orchard-house, but certainly it cannot be recommended for planting generally, and I am very sorry to say the same of Easter Beurré. Once I saw and tasted some fruit of this Pear from the Royal Horticultural Society's Garden truly magnificent, and the flavour most excellent, but very few places can grow this kind well. Yet another Pear I must scratch, it is Easter or March Bergamot. I have never seen this fit for anything but stewing. I should like to plead for a good old Pear called Bezi Vact, discovered about 100 years ago at the Abbey of St. Waust. It requires an east or west wall to grow on, and it is then excellent at Christmas. I mention this kind because I do not remember once seeing it at the Chiswick Conference, and it would be a great pity to see it go out of cultivation. *J. Rust, Eridge Castle.*

I think Mr. Rust entirely mistaken in stating the spurious variety of this Pear to be Althorpe Crassane, as one glance at the coloured plate of it in the *Herefordshire Pomona* is sufficient to convince any one that it is not that variety. I grow several trees of Althorpe Crassane here, and I find on comparing specimens of the fruit with the coloured plate of this variety in the *Pomona* that I have the true

one. There is a very wide difference between Althorpe Crassane and the spurious of Knight's Monarch, both in shape and the colour of the skin, as well as in flavour. *A. Ward.*

THE ROYAL HORTICULTURAL SOCIETY.—On Tuesday I paid a visit to the Drill Hall, St. James's, to see the last of this season's Royal Society's shows. The menu served was principally composed of Turnips and Sprouts from Chiswick, a nice lot of red-berried evergreens, two or three pots of Primulas and Cyclamens, three Orchids, and a few miscellaneous things; a more miserable display could not very well be conceived, and I deeply regretted having been at the expense and trouble to wend my way to such an exhibition. What I cannot understand is the excessive modesty displayed by the executive. The public know nothing whatever of these shows. Short crisp paragraphs are never inserted in the London morning and evening papers (?). They are not advertised, nor do they ever appear in the free list devoted to announcing lectures, meetings, exhibitions, &c., which are scanned daily by the general public. Where lies the fault? Surely the executive should know that the only way to make our exhibitions a success, a good display is essential, and the power of the Press utilised in every possible way. My sincere advice is, Advertise, advertise, advertise! *A Fellow.* [The meeting in question was one of committees only. "A Fellow" clearly does not read the papers very closely. *Ed.*]

STACHYS TUBERIFERA.—It has had a place in the menu here for some years as Stachys, and I think this name more sensible than "Croques du Japon" of the French, or "Choro Gi" of the Japanese, from whom it was introduced by M. Paillieux. The cook here obligingly gives one good recipe for second course:—"Soak in cold water five minutes, rub well with Lemon, throw into boiling water with a pinch of salt for ten minutes. Strain and shake up with cream, or maitre d'hôtel butter—must be served up at once." It is almost in daily demand here, and in various ways. The housekeeper says, from her experience, that it is an excellent ingredient in mixed pickles, but not so good as a pickle by itself. Our yield this year is at the rate of about 5 tons per acre. I believe it capable of doing much more. *P. M., Wynnstay Gardens, Ruabon.*

CARNATIONS.—I find that several of my layered plants are failing in the centre, the leader dying off. The plants are quite healthy at the base, and vigorous in growth, but they fail in this important particular. I attribute it to the effects of frost—the sharp frost which destroyed so many tender things in October, affecting the plants when the growth was soft and young. In nearly every case it has attacked plants that I received somewhat late in the spring, and which did not start into growth until beyond the usual time. All that are affected in this way are potted off, and placed in a close frame to induce side-growths, and so secure another leader. On the whole, the young plants—except any such as are affected as I have just mentioned—look remarkably well, and appear as if they will be well forward when the time comes round for the spring potting. *R. D.* [This looks like the effect of Nematoid worms. *Ed.*]

INTERNATIONAL EXHIBITIONS.—There has been a lull this season in the excitement connected with international horticultural exhibitions, which, however, may soon pass away, as we frequently hear that it has been mooted by some enterprising horticulturists that an international exhibition may take place with a class of exhibits such as have not been represented in an international sense; but leaving that matter for the present, we are very desirous to learn when the first international horticultural exhibition was held in Britain or Ireland? Most of these grand shows have been for exhibiting the productions of fruit gardens, and only one which we visited fairly represented foreign horticulture. It was the first we had the pleasure of witnessing, and was held during October, 1862, in the Royal Horticultural Societies Garden at South Kensington. Well do I remember the display of Pears in the centre of the large conservatory—most of them foreign—which represented the strength of the fruit salesmen of Covent Garden; and to add more fully to the international character of the exhibition, immense displays of Grapes from the Continent were tabled. These fruits were carefully labelled, and this aspect afforded much instruction, and created a deal of interest. There was a good display of home-grown produce, and the Grapes of Mr. Drummond (Black Hamburgs and Muscats)

will never be forgotten by me. This was the only exhibition which we could really call "international" in character. We have visited ten since that time, all good, but would be specially obliged by information as to when the first was held. *Hortus*. [Does our correspondent forget the International of 1866? Ed.]

DISA LACERA.—I quite agree with Mr. N. E. Brown in placing all the varieties of blue *Disa* which have recently flowered under this species, and I can give confirmatory evidence to his theory that it is impossible to call one set *D. purpurascens* and the other *D. lacera*. The whole of the specimens noted as having flowered (I do not know about the Kew one), and also others, among which I may record one which flowered with Messrs. James Veitch & Sons last summer, and which I immediately pronounced to be *D. lacera*, were imported by me from one spot in South Africa, where they all grew together, and, according to my correspondent, there displayed that variability of colour which Mr. Brown suspects, as well as the differences in the fringing of the lip, of which we have evidence. So unreliable does this feature appear, and so common is the apparently uncut labellum that men with good botanical knowledge on the spot who have the means of seeing thousands in flower regard them all as *D. graminifolia*; indeed, a passage in a recent letter from a correspondent there, from whom I had asked information, deals with it as admitting of no doubt, simply saying, "Your *Disa lacera* is *D. graminifolia*." This conclusion is probably arrived at by the general appearance of the flowers, and not by comparative analysis. The last one which flowered with Mr. A. H. Smea, I must confess, deceived me, for the lip exhibited an apparently smooth edge. Examination since, however, reveals the barest trace of a rudimentary fringe, and this feature will always be more or less developed in *D. lacera*. *James O'Brien*.

LARGE AND SHOWY APPLES.—The double and horizontal trained cordons generally occupy a position at no great distance from walks, and are used in a great many gardens for the purpose of forming an edging to them. When this is the object, it seems to me that, the trees being immediately under the eye, and as the cordon, when in a healthy condition, generally produces fine fruit according to the variety, it is well to plant a selection of large, and those having an attractive appearance. Trees neatly trained, and when well cropped with fine specimen fruit, it is needless to say, are viewed by one and all with a wonderful amount of interest, and when planted close to the sides of walks as an edging they take up very little room, and the little trees are easily managed. For my own part, I do not care to see the horizontal-trained cordon too close to the ground, as is very often the case. Fourteen inches high is, in my opinion, none too much to look well, and about 8 to 10 inches away from the sides of the walks. It is by no means a difficult task to form good rows of trees, neither does it take a long period of time to bring them into bearing. All that is required is to stretch out horizontally a good stout single iron wire (not galvanised), fixing it firmly at each end at the height required, stout wood or iron posts being used at intervals as supports. It is, however, necessary to have one end fitted with the handy French invention—a *raidisseur*—so that the wire may be readily tightened. In commencing with maiden trees, and which are probably the best in the end, I would plant double cordons at 10 feet, and single at 6 to 8 feet apart. For the double cordon it will be necessary to cut the tree down to the height of the wire, and subsequently to train two shoots, resulting from this cutting-back, in opposite directions, endeavouring to obtain an evenly balanced tree. Such a cordon should, with attention as regards summer pruning, soon come into bearing. Trees after having been planted a few years, often make strong and unfruitful growth, and it is well to check this kind of growth without delay by digging around the trees in the autumn and pruning them, or replanting—the latter being really the best method. A list of large and good varieties of Apples suitable for all save the least favoured parts of Britain can be selected from the fruit catalogues of most of the important nurserymen, so that an enumeration of them here is not wanted. *H. Markham, Mereworth Castle, Maidstone*.

STACHYSTUBERIFERA.—Referring to Mr. Thomas' excellent suggestion, we would state, that as there appears to be some slight obscurity with regard to the actual origin of this plant, we have decided to call it "the Chinese Artichoke," and think it a

favourable name by which it can be recognised in future. *James Carter & Co.*

PRIMULA RUSBYI.—Permit me to state that I was the introducer and first exhibitor of this species. I obtained it from Passaic, New Jersey, U.S.A., early in spring. The plants soon came into flower, and were exhibited at one of the meetings of the Royal Horticultural Society, obtaining a First-class Certificate of Merit. I did not succeed with it afterwards. I think it proved too delicate for our climate, though probably I did not understand the treatment it required. I do not think it has been exhibited at one of the meetings of the Royal Horticultural Society's since probably with the exception of the *Primula* Conference. *R. Dean, Ealing, W.*

FIRM SOIL FOR FRUIT TREES.—We have noticed in many of the best fruit districts throughout England (especially Kent, Oxfordshire, and Worcestershire), that in positions where trees had unlimited space to grow (often on farm buildings and houses in streets) the fruit was of much excellence and little pruning was required. But on examination of the roots we found that in every case the soil was almost firm as a rock—had not been disturbed for many years, and in numerous cases there was a gravel path or cart-road over them. We always believe in allowing a root run in proportion to the dimensions of the branches; but at the same time have many proofs to which we could refer, that large trees can remain healthy for many years and bear excellent crops of fruit, also in limited spaces. The best Jargonelle Pears we ever saw were grown on a tradesman's house, with an aspect to the west and which had only a few feet outwards for the roots to subsist in—and the traffic to the dwelling-house was over them. The finest Apricots we have ever seen are grown in Oxfordshire, and many of the trees have subsisted in the pathways to dwelling-houses; and we know where some are doing remarkably well under the causeway of streets. In the West of England (in Bath district) Figs are to be found, year by year, bearing immense crops of the finest fruit ever seen, where the roots are encased in soil which has never been exposed to the light of day during the memory of the oldest inhabitants, and it is firm like concrete. In Essex and Suffolk (a county in which our friend, Mr. Sheppard, has done a deal of grand gardening), we have seen vineries which have been loaded year after year with bunches of white Grapes outside (chiefly on dwelling-houses), and scarcely a yard of ground in which the roots could extend outwards, and that had been trampled as a path for many years. We have always had strong faith in firm soil for fruit trees. *M. T. N. B.*

CHRYSANTHEMUMS ON WALLS.—I do not think that the many lovers of the Chrysanthemum have yet arrived at what may be termed the real value of these flowers when grown in suitable positions and in favoured localities as wall plants. Chrysanthemums are not climbers certainly, but, if by confining ourselves to a few good free-flowering and comparatively hardy kinds we can have the walls of our dwellings enlivened with their flowers I think that few would say nay, and particularly those who do not possess a greenhouse, and, in short, have not the means at disposal for building one. There are many, doubtless, who would embrace them in the manner here stated, if they had any faith in its efficacy. Of this there need be little doubt in all warm sheltered positions, especially on south walls. Quite recently I have seen some very passable blooms growing on plants which have been planted against the dwelling-house wall, and which have been nailed in position as the growth was made. The varieties which did best were Alfred Salter, Venus, Mrs. Dixon, Julia Lagravere—the two last doing equally well with an eastern aspect; while Madame Desgrange in a similar position flowered during the recent frosts with its wonted freedom, and hardly a petal was injured. I doubt not there are many other kinds which would make a really creditable display if grown as here indicated, selecting some of the semi-early kinds, as James Salter and Lady Selborne, Mdlle. Lacroix, Mrs. Rundle, L'Or du Rhin, Blanche Colomb, and such things. In such positions the wood is almost sure to be well matured—a primary point in connection with their flowering. Annual planting does not appear essential, since plants may remain unremoved for two or more years. This fact enhances their value somewhat, since it enables the grower who may desire to increase the size of the plants and the space they will cover to train in more shoots from the base of the plants than would be possible were they moved yearly. I do not claim that there is

anything original in the above, as many cottagers adopt it in various parts of the country, and I believe it is not altogether unknown in Ireland, and my father also adopted it at least twenty years ago. Autumn flowering wall plants are by no means numerous, and if Chrysanthemums may be added, so much the better. *J.*

ARALIA SIEBOLDII.—A large clump of this handsome Japanese plant which appears to have been with us just about half a century, has been an object of considerable interest in a sunny forecourt garden of a villa residence at Ealing. Two plants were originally planted out, and they have so increased by means of throwing out stems that they form quite a thicket, and they have borne many panicles of their peculiar white flowers during the autumn, and helped by the sunny weather they have been as fine as under glass. The late Mr. Mongredien wrote of this plant twenty years ago—"A splendid addition to our fine-foliaged plants, and, if it should prove hardy, no garden ought to be without it." That it may be regarded as hardy in the South and West of England, and in the more Southern Midland Counties there can be no doubt; and probably farther North than is generally imagined. But what is the nature of the secretion which exudes from the blossoms that proves so attractive to the blow-flies? *R. D.*

YELLOW-BERRIED YEWS.—In your issue of the 17th ult., p. 576, Mr. Watson, of the Clontarf Nursery, gives an account of the fine old yellow-berried Yews at Clontarf Castle, near Dublin, and admits being in doubt as to the existence of any others in Ireland, but should he pay a visit to Powerscourt, I should be happy to show him a fine old specimen. Our best tree is about 40 feet high, with wide-spreading branches, having a clear stem of 5 feet to the nearest boughs, and 20 inches in diameter, now in full berry. There is also another old tree, which was transplanted some eighteen or twenty years ago, and pruned down to about 20 feet from the ground, but it is making very slow growth. The age of the foregoing Yews is not certain, as there are no data as to time of planting, but Lord Powerscourt, who takes especial interest in all matters concerning trees and shrubs, tells me they cannot be less than one hundred years old if not 150 years. There are some nice bushes here raised from seed of the old trees I speak of, 8 feet and 12 feet through, with dense dark green foliage, and studded profusely with these yellow berries, which are much admired at the present time. I send a specimen of some for your inspection. *D. Crombie*.

CHISWICK TRIALS.—Your correspondent from "Over the Sea," after animadverting recently on the fact of one of the committees of the Royal Horticultural Society largely composed of persons interested in commercial horticulture, inquires "What chance has an interesting plant exhibited by an amateur?" As I am an amateur, and have lately been "in touch" with one of the committees, through its secretary, Mr. A. F. Barron, it may be of interest to your readers to hear my experience. The subject of our correspondence was early dwarf Rhubarb, of which I claim to possess a kind differing from any other I have seen or heard of, and which for many years I have studied to cultivate in the best way. I do not force it, but treat it in such a manner as a long and patient experience has led me to adopt, and, as grown by me in the open ground, it seldom fails to supply me with a dish of Rhubarb before February is out, as I have said, without forcing. Having published these facts elsewhere, and having, of course, my statements challenged, I accepted the challenge made in the *Journal of Horticulture* (July 5, 1888, p. 10) to send a root of my Rhubarb to Chiswick for trial. What person who had succeeded in growing a vegetable in the open, a very long month in advance of any grower known, would submit his vegetable for adjudication without supplying cultural directions? With regard to Rhubarb as grown in England for early consumption I have come to the conclusion that the usual mode is unscientific. The plant naturally contains oxalic acid, which from its unwholesomeness leads the best physicians to strike this vegetable off the dietary of many patients. Believing that this oxalic acid is largely developed by any known mode of forcing I have given up forcing altogether, and have printed my mode of treatment. I inquired, therefore, of the Chiswick authorities if, in the event of my sending (as I was willing to do), a root of my early Rhubarb for adjudication, the committee would cause to be followed my printed cultural direc-

tions—forwarding them two copies. I suppose it was considered presumption in an amateur venturing to instruct horticulturists how to grow Rhubarb. Certain it is that the committee would have none of my advice. I was informed that the root I might send would “be planted with the others, and treated in the same manner.” A gracious approval was vouchsafed in a lofty and royal way to my directions, which “are very good, and much to the point,” but the committee would have none of them—they would be ignored; the Rhubarb root “would receive the same attention as others.” Now, an eminent society in the gardening line might with due self-respect have sent me some such answer as the following:—“Being many of us commercial horticulturists, we consider in our official capacity that you as an amateur are *a priori* disqualified from testifying to any fact whatever in the vegetable kingdom; but as we are not tied hand and foot with red tape, we do not disdain to take a light even from a flint; and as you say you have for many years studied the growing of Rhubarb, and have certainly made out a *prima facie* case, we will grow your Rhubarb, and honourably follow your cultural directions.” Perhaps some such answer to me may still be forthcoming, for “Head Gardener” is pretty confident that “a few years will see the management of the Royal Horticultural Society conducted in such a way as to meet with our hearty approval.” *W. H. Sewell, M.A., Yaxley Vicarage, Suffolk, Nov. 28.*

WALNUTS OF 1888.—Referring to J. J. Willis' remarks on the non-value of the Walnut crop, at p. 577, I may say that it is exactly the same cry hereabouts—plenty of nuts, but nothing in them. The same stands good with the Filberts and Cob-nuts, no doubt owing to the want of sun-heat to mature the kernel [or, more probably, from imperfect fertilisation]. *D. C., Powerscourt, Ireland.*

EARLY MARKET PEAS.—Market growers of Peas seem this season to be endowed with considerable meteorological faith, as a mild, or at least an open, winter is looked for. That the weather so far has been exceptionally soft and genial for the time of year there can be no doubt, and a green Yuletide is far from improbable; but the worst winter weather invariably comes after the New Year is in, and there is yet plenty of time for severe frost. However, it seems that faith in a mild winter has been helped by the recent generally excellent condition of the soil, which on gravel has worked admirably. Stimulated by such admirable encouragement, large breadths of Peas have been sown so early that rows are now showing in all directions, whilst other sowings are proceeding. By means of broad drills, which sow three rows at once, several acres of ground are soon got over. Drilling sows Peas, perhaps, rather more thinly than when done by hand, and not quite so deep, so that the rows come through quickly and with great success. The customary width for Sangster's, Eclipse, William I., Sunrise, and similar kinds, is about 27 inches, as that distance enables the horse-hoe, one of the most useful of field-cultivating implements ever made, to be freely employed. It by no means follows that a good Pea plant in December means a good crop in the following summer. Even if the breadths escape the hard frosts of the early part of the year, they often suffer severely from the effects of bitter keen east winds in March and April; whilst, if they escape these, and flower early, they may but find May frosts, severely injuring the treacherous bloom. Again, it has often been found that breadths sown in the month of February in light soil have been quite as early in cropping as those breadths sown in November, thus illustrating the old adage, “More haste, less speed.” *A. D.*

REMARKABLE DISCOVERY IN AGRICULTURE.—This is the heading of an article in a circular now before me; it refers to the discoveries of M. George Ville, of Paris, who affirms that he has made himself acquainted with the process by which Nature converts the seed into the plant, the plant into the flower, the flower into the fruit. His secret lies, it is said, in the exact measurement in the degree of ozone and ammonia supplied by Nature to each plant. We as gardeners have much to learn as regards chemical manures and their application, which few will deny. Vegetables, fruits, and plants have been, and are still grown, which for quality and excellence one would imagine it impossible to surpass; and this simply by growing or planting in suitable soils and by the use of ordinary farmyard and other common manures; but it seems as if cultivators in perspective will use none of these old-fashioned abominations, but will rely principally upon chemical manures for supplying the

crop with that which is necessary for the building-up of its various parts. M. Ville has even gone farther than this, for it is said that he has grown plants which are generally cultivated in the best manured and most laboured soils in the calcine refuse of the porcelain ovens, and which has been, besides, washed in distilled water and recalcined, which, says M. Ville “is simply to display the power of my chemical manure,” and the results are said to prove that the most dry and barren soils may be productive of crops as rich as those planted in the most fertile ground.” “Nature,” says he, “gives to the plant nine-tenths of what is necessary to its nourishment, that is to say, air and water; the tenth part is administered by me in the shape of lime, phosphate, nitrogen, and potash.” The field of experiment is laid out in square patches, each planted with a different species of vegetable produce. For instance, the Beetroot without manure is poor and unhealthy; in the next square it has undergone half manuring, and begins to look stronger and more promising; in the third square it has been submitted to complete treatment, and the produce is superb. The same result is obtained with the Vine, Wheat, and Maize, and all kinds of vegetable and fruit trees as well. M. Ville observes that but one ingredient is necessary for the production of every plant in Nature, and that is lime (!); but every other kind is peculiar to the species of plant under cultivation. A Vine covered with fruit was exhibited early in June, and by its side another on which the buds were just beginning to be seen. Grapes from the fruitful Vine were sent to the Prince of Wales, who, on his visit to Paris, had expressed himself highly interested in M. Ville's experiment. Another instance of the success of the system is quoted. At Arboussier, in the island of Guadeloupe, the crop of Sugar has hitherto been estimated at 40,000,000 of canes. It has increased to 100,000,000 ever since the adoption of M. Ville's system. May I ask if any of M. Ville's experiments have been repeated in England by any of the numerous readers of the *Gardeners' Chronicle*? If so it would be interesting and beneficial to learn with what results. *W. Harrow.*

SOCIETIES.

ROYAL HORTICULTURAL.

TUESDAY, December 11.—The last meeting of the waning year was held in the Drill Hall, James Street, Westminster, on the above date, and may be said to have been remarkable for the fewness of the exhibits.

The plant of greatest interest was *Skimmia Foremanni*, a robust growing hardy plant, raised by Mr. Foreman, Eskbank, Midlothian. The other points of interest were the vegetables from the Society's Garden, consisting of Brussel Sprouts and yellow and white Turnips.

Scientific Committee.

Present: G. F. Wilson, F.R.S., in the chair; Hon. and Rev. J. T. Boscawen, Professor Church, Dr. Scott, Mr. Morris, Mr. O'Brien, and Rev. G. Henslow (Hon. Sec.).

Oak Wood, Defective.—Specimens of Oak wood, forwarded by Mr. Burbidge, which had been used for spokes of wheels, but found to be remarkably brittle, and consequently useless, were submitted to Professor H. Marshall Ward for examination and report. The following communication was received from him:—“I have cut numerous sections of the pieces of Oak, and have made a very thorough examination of the wood, but must say I can find no traces of fungi or pronounced decomposition. Nevertheless, the tracheides of the wood seem to be abnormally short, and have occasionally granular ‘deposits’ in them—also in the medullary ray cells—which I should like to know more about. I cannot explain the matter, but should be glad of further specimens for examination.”

Ivy, Staminy of the Pistil.—Mr. Henslow submitted some specimens of abnormal Ivy blossoms to a microscopical examination, which were exhibited at the last meeting by Dr. Masters, together with drawings by Mr. G. W. Smith. The dried condition of the flowers precluded a very exact determination

of the abnormality; but there appeared to him to be little doubt but that stamens replaced the carpels. The sepals, petals, and stamens were normal, but above the superior disc—which is normally formed by the upper and exposed part of the carpels—was a crown of supernumerary anthers. The vascular cords which normally represent the dorsal ribs of the carpels bore the anthers. In the centre was a depression in lieu of the ovarian cells, and apparently some minute and rudimentary anthers occupying their place. These seemed to be due to staminy of the placental cords, which normally occupy the centre of the inferior ovary.

Stachys tubrifera: Analysis of the Tubers.—Professor Church gave an account of an analysis of the tubers of this new vegetable which he had himself made, and by which he confirmed those of Dr. A. v. Planta, recorded in *Landwirthschaftliche Versuchstationen*, Nos. 5 and 6, 1888. It appears that they contain 78 per cent. of water, 1.5 per cent. of albuminoids, 1.7 per cent. of non-albuminoids or amides, 16.6 per cent. of sugars, 7 per cent. of fibre, 1 per cent. of ash, 2 per cent. of fat, and a trace only of starch. Comparing this analysis with that of Potatoes, it appears that the water is in larger quantity, it being 75 per cent. in them; the flesh-forming albuminoids are rather more than in Potatoes, while the sugars replace the starch, of which there is some 15 per cent. in the average analysis of the Potato.

Satyrium sp. with “Supertuberation.”—Mr. O'Brien exhibited palmate tubers of some South African species, which showed two years' growth, having been plunged in moss only; the tubers, instead of developing a leafy axis, had formed fresh tubers only, the stem and leaves being produced in miniature, being about half an inch in height. Mr. Wilson mentioned the fact that Lilies sometimes behave in the same way, and that the process was identical with “supertuberation” in Potatoes, in which case the “eyes” gave rise to fresh tubers instead of stems, when situated too deep and with too much heat, according to the experience of Mr. Boscawen. Mr. O'Brien remarked that the importance of the knowledge of the above phenomena lay in the fact that it was often supposed that tubers and bulbs were lost or decayed, from the non-appearance of the flowering stems, while they might still be present in the soil, but were for two or three years simply reproducing bulbs at the expense of the old one, without flowering at all.

Lime with Contorted Boughs.—Mr. G. Swales forwarded a young lime tree grown from a layer, the only one of 500 which exhibited the peculiar growth. A graft taken from it in the spring exhibits the same peculiarity. Dr. Hogg remarked, that it appeared to resemble the “contorted” variety of the Hawthorn. The curving and twisting was apparent even in many of the minutest twigs. It was thought by some to be due to mischief or injury by insects; but the above facts seem to point to other causes. It was referred to Chiswick, to be grown, to prove the constancy of the feature or otherwise.

Christia.—This is a new production for antiseptic bandages, invented and patented by Mr. T. Christy, of 25, Lime Street. It is constructed of thin white-brown paper, expressly made of Manila Hemp (*Musa textilis*), which consists purely of remarkably long liber-fibres, which doubtless tend to give it greater tenacity. It is then subjected to a process with glycerine, olive oil, and other substances, which render it translucent, with the appearance of oiled silk. It subsequently is treated with salicylic acid, carbolic acid, or other disinfectant, and rendered antiseptic. Its advantages are—great tenacity, extreme lightness, being not more than one-third of the weight of oiled silk or gutta-percha sheeting, antiseptic, and perfectly impervious to moisture. It was thought that it would prove exceedingly useful in horticulture, e.g., for binding up in budding, sending specimens by post when the exclusion of air is essential, while strips would be serviceable for tying plants to stakes, &c.

Korsambi Nuts.—Mr. Henslow showed specimens, received from Mr. Christy, of the seeds of *Schleichera trijuga*, of the order Sapindaceæ. It was supposed to be the source of Macassar oil, but this was strongly doubted. Mr. Morris observed that it is called the “India Oak tree,” and is abundant in India and Ceylon, and is valuable for its timber.

Juniperus occidentalis.—A specimen, collected in eastern Oregon, U.S.A., by Mr. William Stewart, was forwarded by him from Greenock, N.B. It was first found by Douglas in the Story Islands in the Columbia River. It was also found in the

Klamet Mountains, in the Oregon territory, at 5000 feet. It grows from 40—80 feet high, and, like other species, varies in foliage in passing from the young to the older stages. The specimen sent was spring-leaved, or in the characteristic condition of the young stage. It is remarkable for the strong and disagreeable odour when bruised (*Gordon's Pinetum*, p. 163).

Centenary of the Dahlia.—Mr. Henslow called attention to the fact that the year 1889, besides being the centenary of the Chrysanthemum in Europe, was also that of the Dahlia in England. It was introduced by the Marchioness of Bute in 1789, and figured with single and double forms in *Bot. Mag.*, vol. xlv., t. 1885, and *Bot. Reg.*, vol. i., t. 55.

Floral Committee.

Present: G. F. Wilson, Esq., in the chair; and Messrs. W. Bates, H. Herbst, W. Holmes, B. Wynne, H. Dean, J. Dominy, H. M. Pollett, J. O'Brien, H. Ballantine, W. Wilkes, and E. Hill.

The exhibit of *Skimmia Foremanni* × by Mr. Foreman, of Eskbank Nurseries, Midlothian, was a welcome addition, and it is evidently a valuable shrub for the open ground, window-boxes, &c. It is said to have been raised by crossing *S. oblata* with *S. fragrans*. The habit is dwarf and dense, constitution vigorous, and foliage dark green, and it has the propensity to berry in an extraordinary degree. Another seedling from the same cross was shown, with leaves as large as those of a common Laurel. The fruits of *S. Foremanni* endure for two years, and the plant is of extreme hardiness, having withstood 32° of frost without any protection. Some of the plants shown measured 2 feet in height and as much in diameter, but it will, we were informed by Mr. Foreman, reach much greater dimensions.

Messrs. Heath & Son, Cheltenham, showed two *Masdevallias*, one being the result of crossing *M. Lindeni* and *M. Veitchii*, the flower scarlet, with two lines of a darker hue on the side segments and one in the centre of the apical hood; the other, the result of crossing *M. ignea rubescens* and *M. Veitchii*, had flowers of a rather lighter hue.

A small panful of *Pleione maculata* was furnished by Mr. Rowe, The Gardens, Nunfield, Dumfries. The flowers, not numerous produced, were white, with a primrose-yellow stain on the upper surface of the lip.

Some few *Cyclamen* blooms of the giganteum type, as well as a well-grown plant of the same, named *Rosetta*, a fine large rosy-purple flower with a darker eye, were shown by Mr. Odell, florist, Gold's Green, Hillingdon.

A Tree Carnation, pure white, and with frimbriated edges to the petals, was shown by Messrs. Collins, Brothers, & Gabriel, 39, Waterloo Road. It is named *White Andalusian*, and is a pretty addition to the section.

An excellent pink-flowered *Primula sinensis*, *Swanley Pink*, came from the Home of Flowers, Swanley. It is a regularly-shaped flower, with overlapping segments, of great substance—the colour a soft shade of pink. Many blooms of Mr. Cannell's strains of *Primula sinensis* were likewise shown by him. *Primula sinensis* Great Western, a fine crimson flower of good quality, came from Messrs. James & Son, Farnham Royal, Slough. The mild character of the winter, hitherto, was well shown in Mr. R. Dean's boxful of hardy Primroses gathered from the open ground. He also exhibited a number of flowering plants in pots of *Primula obconica*.

FIRST-CLASS CERTIFICATES.

Skimmia Foremanni × from Mr. Foreman.

Primula Swanley Pink, from H. Cannell & Sons.

Fruit Committee.

Present: Dr. R. Hogg, in the chair; and Messrs. H. Veitch, W. Warren, W. Denning, J. Burnett, P. Crowley, G. T. Miles, Harrison Weir, J. Wright, R. D. Blackmore, S. Ford, C. Howe, C. Ross, W. Marshall, and P. Barr.

Mr. Campbell, Priory Road, Roehampton, received a Cultural Certificate for some very good examples of blanched Batavian Endive.

The Society's Gardens contributed a large assortment of various strains of Brussels Sprouts which have been grown there on trial. The quality was very varied, and ranged from very bad to very good. We specify a few strains which may be classed in the former category, viz., Wroxton, Dalkeith, Burghley, very tall, but with hard small Sprouts; Wrench's King, French Superior Dwarf, sent by Mr. P. Barr;

Rosebery, very good. A collection of Turnips was likewise sent from Chiswick, but in these the quality was not so varied as was the case with the Brussels Sprouts. English strains with one exception—Yellow Finland—were superior to any Continental ones shown. The best as regards appearance were Early Milan, Red Globe (Veitch), Model (Watkins), Snowball (*ibid*), Silver Ball (Rutley & Silverlock), Snowball (Nutting). The Yellow Finland (Vilmorin), was very nice, being quite small (2 inches in diameter), and with a beautifully smooth skin; the English strain of the same (Rutley & Silverlock) was not quite so full in appearance, nor so delicate-looking. Some strains of Golden Ball Turnips were excellent.

Seedling Apples were shown by Mr. W. Blackmore and Messrs. W. J. Brown, but there was nothing which calls for comment.

Mr. J. Willard, Holly Lodge, Highgate, sent *Asparagus Chicory* in the green state; and Mr. R. Gilbert, Burghley, Stamford, showed his *Chou de Burghley* and *Universal Savoy*, each excellent of their kind.

Powdered calcined sea-shells, rich in phosphate of lime, alkali, and other manurial ingredients, were shown by Mr. A. Dean, Bedford. We thought the price—7s. 6d. per cwt.—for what is little more than lime, almost prohibitive except for pot plants, still the stuff should be more valuable as a manure than shells simply crushed.

Cold Storage.—The report of the sub-committee appointed to conduct experiments in the cold storage of fruit was presented, and was not, on the whole, of a favourable character, the keeping properties of some kinds of fruit being materially prolonged, while others, notably Melons and Tomatos, entirely failed. The chamber was not considered suitable, the atmosphere not being sufficiently dry for the purpose, nor so sweet as was desirable. With a dry atmosphere and equable low temperature there is no doubt that the keeping of hardy fruit can be materially prolonged. The report is placed before the Council of the Society for consideration.

FIRST-CLASS CERTIFICATE.

Asparagus Chicory, from Mr. J. Willard.

LINNEAN.

DECEMBER 6.—Mr. W. Carruthers, F.R.S., President, in the chair. The following were elected Fellows:—H. E. D'Alton, of Victoria; P. Goyen, of Otago, New Zealand; G. A. Grierson, Lecturer on Botany, Sheffield School of Pharmacy; Maurice Holtze, Superintendent, Botanic Garden, Port Darwin; R. W. Hullatt, Singapore; J. C. Lisbon, M.D., Fellow, Bombay University; J. H. Lace, Forest Department of India; Professor J. B. L. Mackay, Director, School of Mines, Sandhurst, Australia; E. W. Mayhew, Fremantle, West Australia; Digby S. W. Nicholls, Cowbridge, Glamorganshire; D. T. Playfair, M.D.; D. Prain, M.B.; Clement Reid, F.G.S.; A. B. Rendle, B.A., B.Sc., and Peter Yates, M.D.

Mr. W. H. Beeby exhibited and made some remarks on specimens of *Valeriana Mikanii* and *sambucifolia*, and a series of *Potamogeton fluitans*. Mr. F. W. Oliver described the nature and growth of leaf emergences in *Erioseperum folioliferum*. Mr. E. M. Holmes exhibited specimens of a new *Asafoetida* plant, *Ferula foetidissima*, and a monstrosity of *Zea Mays*. Mr. J. G. Baker, exhibited a curious variety of *Vicia sepium* found in North Yorkshire. Mr. T. Christy exhibited specimens of an undetermined species of *Echium* received from Persia, and employed medicinally as a good alternative.

The first paper read was one by Dr. Costerus, on "Malformation in *Fuchsia globosa*," upon which Professor Bower offered some critical remarks.

The next paper was by Mr. B. T. Lowne, who gave an admirable demonstration of the mode of development of the egg of the blow-fly. His conclusions were criticised by Professor Stewart, Professor Howes, and Mr. A. R. Hammond. In continuation of the reports on the collections made by Mr. Ridley in Fernando Noronha, a paper was read on behalf of Mr. Boulenger, enumerating the fishes and reptiles which had been identified by him.

An evening meeting will be held on December 20, at 8 p.m., when the following papers will be read:—1. "The Natural History of the Kangaroo Island Grass Tree." By J. O. G. Tepper, F.L.S. 2. "Apyocistis a Volvocineae." By Spencer Moore, F.L.S.; 3. "On some New Species of Shells." By G. B. Sowerby, F.L.S.

COLONIAL AND FOREIGN.

A FEW ALPINE CRUCIFERS.

The family of Crucifers does not contain many ornamental species, and with the exception of Stocks and Wallflowers, horticulture is only indebted to it for good and useful vegetables. But amongst alpine and rock plants we have now more than one species of this order valuable either on account of its flowers or its foliage. *Dentaria*, *Alyssum*, *Ethionema*, *Draba*, *Arabis*, &c., are all of them beautiful, free-blooming, and interesting.

ALYSSUM.

As an instance we will take *Alyssum*. This genus (I mean the true *Alyssums*, and not *A. spinosum*, L.; *A. maritimum*, Lamark, which are now included in the genus *Lobularia*) contains only species with yellow flowers, this yellow varying from a deep to a clear shade. The plants are usually vigorous, robust in habit, with foliage more or less silver or whitish, the flower-stems strong and well covered with blooms. The one longest known in gardens is the charming *Alyssum saxatile*, which grows on dry slopes in South Austria, by the Mediterranean, and on the isles of Cyprus and Candia. The plants are covered with golden-yellow flowers; during the months of May, June, and July they form one of the best edgings known. It is a bright variety, and widely distributed in gardens. There is also a variety with variegated foliage. *A. gemmonense* (*A. medium* Host., *A. petreum*, And.), of Transylvania, is a species nearly allied to the preceding; the foliage, however, is narrower and more crowded, and the racemes of flowers elongated instead of being disposed in umbels. It is found only on calcareous soil. *A. orientale* is found in Crete, Greece, and Turkey; the foliage is downy, the flower of a golden-yellow colour. This plant requires a dry, sunny situation. *A. leucadeum* grows in Italy, forms tufts with many offsets, produces but few flowers, and rarely seeds. *A. montanum* is a plant common in the Alps, in Northern Italy, on the Pyrenees, and in Germany. Its yellow flowers form dense, elegant, much-divided panicles, and it is one of the best ornaments on the rockery from May to August: it likes to grow in crevices of the rocks, in a sunny situation, and also does well on old walls. *A. atlanticum*; found in diffusus, from the Abruzzi (*A. sibiricum*, Willd.) are Crete and North Africa; *A. altaicum*, from Siberia; *A. species*, much resembling *A. montanum*. *A. alpestre* is a very rare plant in the Valais; the flowers are small, clear, yellow, and the foliage is greyish-green; it prefers a dry, sunny situation. *A. Lapeyrousiense* and *A. pyrenaicum*, from the Pyrenees, are very similar to the above, as also is *A. tortuosum* (found in Hungary), which seems to be only variety of it. *A. alpestre* (*A. argenteum*, Gaudin) must not be confused with *A. argenteum*, Witm. The plant of Gaudin is very rare being scarcely ever seen out of Piedmont. *A. argenteum*, Witm., is from Germany, Verviers, and Southern Europe; there is also a Hungarian variety. *A. murale*, and *A. argenteum*, Witm., are both pretty plants, with silvery foliage, with masses of small flowers in elegant panicles, which cover the rocks during the great part of summer. *A. cuneifolium* is found on the Apennines and Pyrenees; it is dwarf and compact in habit. Flowers small, arranged in small, compact, clusters. They are golden-yellow in colour. *A. Wulfenium* (from Carinthia and Carniola) is, according to A. Kerner, the same species as *Rocheli*. I have both in my alpine garden, and am quite of the same opinion as is the Austrian botanist. This plant is intermediate between *A. montanum* and *A. alpestre*; the flowers are relatively large, and of a brilliant yellow colour. The plant grows on gravel soil by the borders of streams among the Alps of Carinthia and Carniola. *Alyssum ovirens* is found on the limestone rocks amongst the Ovir Mountains in the Venetian Alps. This plant is a very interesting one, and is always found to-

gether with *Linaria alpina*, *Thlaspi rotundifolium* and *Saxifraga biflora*, at altitudes of from 6500 to 7150 feet. The flowers are large and of a vivid and brilliant orange-yellow. The foliage is thick and handsome. The plant has only recently been cultivated. *A. Wierzbickii*, from Southern and Eastern Europe, is an excellent plant for decorating rockeries and borders. The flowers are of a vivid and bright yellow colour, erect and arranged in clusters; they open in succession, from April and May until July and August. This species is little known now, but it will probably become very useful as a decorative plant for gardens. I have received, under the name of *Alyssum Mollendorffianum*, from Austria, a little gem which has not yet flowered in the alpine garden, because the seedlings are only those of last winter, but which, as regards the foliage, is certainly the best species of the genus. The leaves are comparatively large, rounded, and shining, of an ash-grey colour, with bright silverish-white spots. The stems are trailing, thick, short, and spreading over the soil. This is an excellent plant for rockeries, not only for its flowers (with which I am not yet acquainted), but it will be sought for on account of its ornamental foliage. I have also received from the same source a very free-blooming variety of *A. Wulfenianum*, by which the Austrian botanists make a species under the name of *A. Heinzii*, and which is much to be recommended on account of its golden flowers and silver foliage.

All the *Alyssums* require sun, and do best when growing between rocks or on gravel soil. Some of them are excellent perennials.

DRABA.

The genus *Draba* is quite different—first, because there are some species with white and some with yellow flowers; also the form of the plants is in clusters or small rosettes, not very spreading. Like *Alyssums*, *Drabas* are rock plants, but the latter grow as well in the North as in the South, while *Alyssums* are species native of the sunny slopes of the mountains of Southern Europe. *Drabas*, on the contrary, are nearly all included in the Northern flora, and in that of the high altitudes. *Draba aizoides* is a native of the Alps and Pyrenees, and with its varieties *affinis* and *elongata*, is beyond doubt to be highly recommended for its hardness, its faculty of adapting itself to our climate, and for its early blooming qualities. With *Saxifraga Burseriana*, and *Androsace Laggeri*, it is among the first spring blossoms, and its bright yellow corolla enlivens the rockeries on the first fine days of February and March. *Draba brachycarpa*, from the Alps of Eastern and Southern Europe, is synonymous with *D. Aizoon*. It is a finer and larger species than *D. aizoides*, is more decorative, but also more liable to damp off. When under cultivation it is generally attacked by a little winged insect which attacks and rapidly destroys *Crucifers*. In these two species the foliage grows in rosettes, the leaves are bordered with hairs more or less long; and the flowers are yellow, growing in little clusters on the tops of the stems. The plant prefers to grow on limestone rocks. *D. bruniifolia*, from the Caucasus, is a similar species, but one of which the foliage is shorter, spreading over the soil. The leaves are almost destitute of hairs, and the plant forms a sort of low turf, that is to say, the tufts of leaves are quite inconspicuous. The flowers are of a bright yellow-ochre colour and not numerous, but there is a succession of them on the plant during all the summer. *D. alpina*, from Lapland and Scandinavia, synonym, *D. pauciflora*—a species with downy, hairy leaves. The flowers are pale yellow. *D. cuspidata*, from Tonia and Italy, has small yellow blooms, synonymous with *D. taurica*; *D. Gmelini*, habitat Ural and Siberia; *D. olympica*, from Mount Olympus and Corsica; and *D. rupestris*, of Scotland and Norway, are all species with yellow flowers, more or less similar to each other, and very easily cultivated. A certain number of white-flowered species are interesting, but less ornamental. The principal are *D. tomentosa*, of the higher regions of the Alps and

Pyrenees, with silvery-white foliage, and which requires to grow on rocks and stones; *D. fladnizensis*, from Carniola; *D. incana*, from the Alps; *D. muricella*, of Arctic America; *D. contorta*, from the Pyrenees, &c. *Petrocallis pyrenaica* (*Draba pyrenaica*, L.), from the Alps and Pyrenees, is an excellent species, growing in compact clumps, bearing lilac flowers, growing in cushion-like tufts. It is met with at an altitude of from 6500 to 7150 feet, and almost always on calcareous soil. The cultivation of this species is not easy. It likes a vertical position, that it may not rot, and a semi-shaded situation. It succeeds well on old walls. *Henry Correvon, Directeur du Jardin Alpin, Geneva.*

(To be continued.)

THE HERBACEOUS BORDER.

LIATRIS.

Few hardy border plants are prettier than the *Liatris*, or Button Snake-root. They belong to Compositae, have flower-heads of various shades of purple, and some are white. The species are natives of North America. The former are perfectly hardy in this country, and sufficiently so, in fact, to succeed in bog-gardens if a slight protection during our winter months be given in the case of the latter. The species already introduced, and now in possession of nurserymen, whilst limited in number, are nevertheless an excellent selection, and consist of the following:—

L. pycnostachya, or dense spiked, a tuberous-rooted form, pale purple in colour, growing to an average height of 3 feet, the spikes of bloom being some 14 inches higher, very broad, and enlarging from base to apex with much effect, so as to have received in its native home the name of Kansas Gay Feather. It is best treated as a biennial, sowing the seeds in the spring. *L. elegans* is a robust grower, and in some soils reaches a height of 4 feet. It has spotted glabrous leaves and purplish blossoms. *L. spicata* is not so tall as the above, and rarely exceeds 2 feet in height. The flower-heads measure from 6 inches to 1½ foot in length, and are covered with sessile purple flowers. *L. punctata* is a recent desirable introduction, exhibiting some variety in the colour of its flowers, as the name indicates. *L. odoratissima* (*Trillisa odoratissima*), which seems never to have received recognition at the hands of English botanists, is a species desirable enough to be imported from America, where it is known as the Vanilla plant, owing to its Vanilla-like scent. Although an inhabitant of the Southern States, and consequently tender, it would be an interesting introduction. *William Earley, Rifeed.*

THE FERNERY.

DOODIAS.

The *Doodias* are not quite so showy as many Ferns, yet they are very desirable on account of their having a symmetrical habit of growth, forming neat compact little plants; and some of the varieties are rendered additionally attractive when growing by the young fronds being brightly tinted with red. *P. aspera* and its variety, *D. a. multifida*, are both very pretty, especially the latter, which grows only a few inches high, the fronds being prettily recurved, and terminating in a branching crest; the type grows a little larger, and is not quite so dense in habit; in both the young fronds are brightly tinted with red. *D. media* is sometimes confused with *D. aspera*, but may be distinguished by being of more erect growth; the fronds also have a more even surface, and are rather larger. *D. Kunthiana* has larger and more spreading fronds, otherwise it closely resembles *D. media*, of which, I believe, it is a variety. *D. blechnoides* is another very pretty species, with rather long narrow fronds. *D. caudata* is a distinct little Fern, and very pretty when

properly cared for, but as its appearance as a weed in all sorts of odd corners, it does not often get the attention which is accorded to those more difficult to obtain.

The *Doodias* are generally regarded as greenhouse Ferns, but, with the exception of *D. blechnoides* and *D. caudata*, all the above succeed better in rather a higher temperature. They should have a light open position, but do not like a dry atmosphere; they require more water than most Ferns, and if allowed to become a little too dry the fronds shrivel up very quickly. To have the *Doodias* in good condition the plants must be grown on freely without receiving a check in any way, for when once they get a little stunted, they will rarely start afresh, and make pretty plants, and, like many other Ferns, they lose their beauty after they get a certain age; therefore, young plants, which may easily be obtained from spores, should be grown. *D. blechnoides* and *D. caudata* are very useful for small fancy pots; the other sorts named above may also be used for the same purpose, but do not stand well enough to be of any great service. In the Fernery, however, they are all well worthy of a place, and when proper attention is bestowed upon them, they have a very different appearance to the stunted specimens often seen in collections. *Pteris.*

SCOTLAND.

ROYAL HORTICULTURAL SOCIETY OF ABERDEEN.

A MEETING of the acting Directors of this Society was held on the 6th inst. in the Secretary's office, Bridge Street, Aberdeen. Mr. Alex. Robson, Vice-Chairman, presiding. A list of donations and special prizes was submitted, and considered eminently satisfactory. The best thanks of the Society were ordered to be conveyed to the Town Council of Aberdeen, the Earl of Aberdeen, Sir William Cunliffe Brooks, Bart., M.P., Lord Provost Henderson, Dr. Campbell, M.P., Councillor Lyon, James Murray Gordon, Thomas Ogilvie, Andrew Murray Jun., and others, who have so liberally contributed to the prize fund. The following gentlemen were elected Honorary Directors:—Sir Arthur Grant, Bart.; Dr. Campbell, M.P.; J. D. Milne, Thomas Ogilvie, Andrew Murray, Jun., John Leith, A. R. Gray, John Fyfe, Charles Smith, F. B. Kelly, and Wm. Falconer, Baillie Gordon, Baillie Crombie, Councillor Lyon, A. O. Gill, of Fairfield, and A. M. Ogston, of Ardoe, were elected Honorary Vice-Presidents.

On the motion of the Secretary, Mr. A. M. Byres, a cordial vote of thanks was accorded to Mr. Alex. Robson for his efforts in connection with the prize fund. The prizes were then allocated over the different classes in the schedule, and the schedule ordered to be printed. The annual dinner was fixed for Friday evening, 21st inst., James Murray Gordon, Chairman of Acting Directors, in the chair. Ex-Dean of Guild Walker, and Mr. Thomas Ogilvie will act as croupiers. The usual votes of thanks terminated the proceedings.

NORTH OF SCOTLAND HORTICULTURAL SOCIETY.

The members of this Association held their monthly meeting on the 7th inst., in the hall of the Christian Institute, Aberdeen. There was a good attendance, and Mr. D. M. Smith, Vice-President of the Association occupied the chair. Mr. Wyllie (of Messrs. Smith & Sons, Aberdeen) read a number of papers on "New Plants, Fruit, Flowers, and Vegetables of the Season." The papers, which were contributed by Mr. Fraser, Kew Green, Surrey; Mr. R. Lindsay, Royal Botanical Gardens, Edinburgh; and several local gardeners, treated the subjects they dealt with in a most interesting and exhaustive manner, and an entertaining and lengthy discussion followed, at the close of which Mr. Wyllie was heartily thanked for reading the papers. A special vote of thanks was awarded the contributors.

THE WEATHER.

[Accumulated temperature indicates the combined amount and duration of the excess or defect of temperature above or below 32° F. for the period named, and is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.			
	Above or below the Mean for the week ending Dec. 10.	ACCUMULATED.		
		Above 42° for the Week.	Below 42° for the Week.	Above 42° difference from Mean since Jan. 3, 1888.
Principal Wheat-producing Districts.		Day-deg.	Day-deg.	Day-deg.
0. SCOTLAND, N. ...	5 above	23	1	-211 + 152
1. SCOTLAND, E. ...	8 above	25	3	-400 + 58
2. ENGLAND, N.W. ...	7 above	28	12	-441 + 31
3. ENGLAND, E. ...	6 above	30	7	-311 + 94
4. MIDLAND COS. ...	6 above	30	3	-398 + 72
5. ENGLAND, S. ...	6 above	36	0	-373 + 131
Principal Grazing, &c., Districts.		Day-deg.	Day-deg.	Day-deg.
6. SCOTLAND, W. ...	7 above	31	0	-303 + 5
7. ENGLAND, N.W. ...	6 above	34	0	-302 + 12
8. ENGLAND, S.W. ...	5 above	41	0	-416 + 210
9. IRELAND, N. ...	4 above	31	6	-219 + 32
10. IRELAND, S. ...	4 above	31	1	-192 + 45
— CHANNEL ISLANDS	4 above	35	0	-219 + 141

DISTRICTS.	RAINFALL.		BRIGHT SUNSHINE.	
	More or less than the Mean for the Week.	No. of Rainy Days since Jan. 3, 1888.	Total Fall since Jan. 3, 1888.	Percentage of possible Duration since Jan. 3, 1888.
Principal Wheat-producing Districts.	Tenths of Inch.		Inch.	
0. SCOTLAND, N. ...	5 less	226	41.7	11
1. SCOTLAND, E. ...	5 less	198	29.5	13
2. ENGLAND, N.E. ...	6 less	177	25.0	27
3. ENGLAND, E. ...	3 less	179	23.9	28
4. MIDLAND COS. ...	1 less	167	25.2	27
5. ENGLAND, S. ...	3 less	171	27.1	26
Principal Grazing, &c., Districts.				
6. SCOTLAND, W. ...	3 less	187	43.4	15
7. ENGLAND, N.W. ...	4 less	188	29.8	22
8. ENGLAND, S.W. ...	4 less	195	36.3	24
9. IRELAND, N. ...	0 (aver.)	202	34.7	28
10. IRELAND, S. ...	8 more	183	36.8	30
— CHANNEL ISLANDS	3 less	214	29.6	28

MEAN TEMPERATURE OBSERVED AT CHISWICK DURING THE WEEK ENDING DEC. 22. (AVERAGE OF FORTY-FOUR YEARS.)

Dec. 16 ...	40°·4	Dec. 20 ...	39°·7
" 17 ...	40°·2	" 21 ...	39°·4
" 18 ...	40°·0	" 22 ...	39°·0
" 19 ...	39°·8	Mean for the week ...	39°·3

THE PAST WEEK.

The following summary record of the weather for the week ending Dec. 10, is furnished from the Meteorological Office:—

"The weather has been fairer than of late over our islands generally, but in Ireland considerable quantities of rain have again fallen. In the metropolis and some other parts of England thick fogs prevailed at the close of the period.

"The temperature continued much above the mean

until the 8th, when it fell very decidedly. The average for the week has been 4° above the mean for the time of year in Ireland, from 5° to 7° above in England, and 5° to 8° in Scotland. The highest of the maxima were generally recorded on the 5th, when they varied from 55° in 'Scotland, W.,' to 60° in 'Ireland, S.' On the 10th the maxima in some of the south-eastern and central parts of England were very low; at Loughborough and Cambridge the thermometer did not rise above 31°, and in the south of London 33°. The lowest of the minima, which were registered on the 10th, varied from 22° in 'Ireland, N.,' to 31° in 'Scotland, N.,' and to 41° in the 'Channel Islands.' During the greater part of the time the maxima over the kingdom generally were about 50°.

"Rainfall has been less than the mean over Great Britain, and about equal to it in 'Ireland, N.,' but in 'Ireland, S.,' a decided excess is shown.

"Bright sunshine has been more prevalent generally than for some time past, but the percentage of the possible amount of duration has continued rather low; in Scotland it ranged from 13 to 15, in Ireland from 28 to 30, and in England from 22 to 28."

Obituary.

MR. ROBERT CASTLE, of Merton, Surrey, died suddenly on Monday last, at the age of seventy years. He had been engaged in private and commercial gardening for over fifty years, having commenced with his father who had charge of Mr. Swainson's then noted garden at Twickenham, in 1830, and his last charge was at Orsett Hall, Romford, which he left on the death of the owner four years ago. He had a wide practical knowledge of horticulture, and his kindliness of manner gained him many friends, amongst whom, in his youth, he counted Loudon, who, with other leading horticulturists of the time, frequently visited his father at Twickenham.

VARIORUM.

THE ANNUAL RING IN TREES.—In the course of his last report, the chief of the forestry section of the Agricultural Department of the United States, referring to the annual rings in trees, asserts that these exist as such in all timber grown in the temperate zone. Their structure is so different in different groups of timber that from their appearance alone the quality of the timber may be judged to some extent. For this purpose the absolute width of the rings, the regularity in width from year to year, and the proportion of spring wood to autumn wood, must be taken into account. Spring wood is characterised by less substantial elements, the vessels of thin-walled cells being in greater abundance, while autumn wood is formed of cells with thicker walls, which appear darker in colour. In Conifers and deciduous trees the annual rings are very distinct, while in trees like the Birch, Linden, and Maple, the distinction is not so marked, because the vessels are more evenly distributed. Sometimes the gradual change in appearance of the annual ring from spring to autumn wood, which is due to the difference in its component elements, is interrupted in such a manner that a more or less pronounced layer of autumn wood can apparently be recognised, which again gradually changes to spring or summer wood, and then finishes with the regular autumn wood. This irregularity may occur even more than once in the same ring, and this has led to the notion that the annual rings are not a true indication of age; but the double or counterfeit rings can be distinguished by a practised eye with the aid of a magnifying glass. These irregularities are due to some interruptions of the functions of the tree, caused by defoliation, extreme climatic condition, or sudden changes of temperature. The breadth of the ring depends on the length of the period of vegetation; also when the soil is deep and rich, and light has much influence on the tree, the rings will be broader. The amount of light, and the consequent development of foliage, is perhaps the most powerful factor

in wood formation, and it is upon the proper use of this that the forester depends for his means of regulating the development and quantity of his crop.

MARKETS.

COVENT GARDEN, December 13.

[We cannot accept any editorial responsibility for the subjoined reports, which, however, are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list, and who are responsible for the quotations. It must be remembered that these quotations represent averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the supply in the market, and they fluctuate, not only from day to day, but often several times in one day, and therefore the prices quoted as averages for the past week must not be taken as indicating the particular prices at any particular date, and still less can they be taken as guides to the prices in the coming week. Ed.]

BUSINESS quiet. All classes of goods well supplied, with no alteration in prices. *James Webber, Wholesale Apple Market.*

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Apples, half-sieve ...	2 0 - 4 6	Lemons, per case ...	12 0 - 21 0
— Canada and Nova Scotia, per barrel ...	10 0 - 18 0	Peaches, dozen ...	2 0 - 6 0
Cobs, 100 lb. ...	10 0 - 110 0	Pine-apples, Eng., lb. ...	1 6 - 2 0
Grapes, per lb. ...	0 6 - 3 0	— St. Michael, each ...	2 0 - 8 0

VEGETABLES.—AVERAGE RETAIL PRICES.

	s. d. s. d.		s. d. s. d.
Beet, red, per dozen ...	1 0 - 2 0	Mustard and Cress, punnet ...	0 4 - ...
Carrots, per bunch ...	0 6 - ...	Onions, per bunch ...	0 5 - ...
Cauliflowers, each ...	0 3 - ...	Parsley, per bunch ...	0 4 - ...
Celery, per bundle ...	1 6 - 2 0	Potatoes, per cwt. ...	4 0 - 5 0
Cucumbers, each ...	0 9 - ...	— kidney, per cwt. ...	4 0 - 5 0
Endive, per dozen ...	3 0 - ...	Shallots, per lb. ...	0 6 - ...
Green Mint, bunch ...	1 0 - ...	Spinach, per bushel ...	4 0 - ...
Herbs, per bunch ...	0 6 - ...	Tomatoes, per lb. ...	1 6 - ...
Leeks, per bunch ...	0 4 - ...	Turnips, per bunch, new ...	0 5 - ...
Lettuce, per dozen ...	1 6 - ...		
Mushrooms, punnet ...	1 6 - ...		

POTATOS.—Beauty of Hebron, 70s. to 80s.; Imperators, 65s. to 75s.; and Magnums, 80s. to 90s. per ton. Trade very bad.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Aralia Sieboldi, doz. ...	6 0 - 18 0	Ferns, in var., doz. ...	4 0 - 18 0
Chrysanthemums, doz. ...	4 0 - 9 0	Foliage plants, various, each ...	2 0 - 10 0
— large plants, each ...	2 0 - 4 0	Ficus elastica, each ...	1 6 - 7 0
Coleus, dozen ...	2 0 - 4 0	Fuchsias, doz. ...	3 0 - 6 0
Cyperus, per dozen ...	4 0 - 12 0	Hyacinths, Roman, dozen pots ...	10 0 - 12 0
Dracena terminalis, per dozen ...	30 0 - 40 0	Liliums, var., doz. ...	10 0 - 30 0
— viridis, per doz. ...	10 0 - 34 0	Marguerites, doz. ...	6 0 - 12 0
Epiphyllums, doz. ...	18 0 - 30 0	Palms in var., each ...	2 6 - 21 0
Erica hymalis, doz. ...	18 0 - 21 0	Pelargoniums, scar., per dozen ...	1 0 - 9 0
— caefra, dozen ...	6 0 - 12 0	Poinsettias, dozen ...	9 0 - 15 0
— gracilis, dozen ...	5 0 - 12 0	Primulas, per dozen ...	4 0 - 6 0
Euonymus, in var., per dozen ...	6 0 - 18 0	Solanums, dozen ...	9 0 - 15 0
Evergreens, in var., per dozen ...	6 0 - 24 0	Tulips, dozen pots ...	8 0 - 10 0

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Abutilons, 12 bun. ...	3 0 - 6 0	Mignonette, 12 bun. ...	2 0 - 1 0
Azaleas, 12 sprays ...	0 9 - 1 0	Narciss, paper-white, (French), 12 bun. ...	3 0 - 6 0
Bouvardias, per bun. ...	0 6 - 1 0	Pelargoniums, 12 spr. ...	1 0 - 1 6
Camellias, 12 blms. ...	3 0 - 4 0	— scarlet, 12 spr. ...	1 0 - 8 0
Carnations, 12 blms. ...	2 0 - 3 0	Poinsettias, doz. ...	4 0 - 6 0
Chrysanthemums, 12 blooms ...	0 6 - 3 0	Primulas, dbl., 12 sp. ...	1 0 - 1 6
— dozen bunches ...	4 0 - 12 0	Roses, Tea, per doz. ...	1 0 - 3 0
Eucharis, per dozen ...	3 0 - 6 0	— coloured, dozen ...	2 0 - 4 0
Gardenias, 12 blooms ...	4 0 - 6 0	— red, per dozen ...	1 0 - 2 0
Heliotropes, 12 spr. ...	0 6 - 1 0	— Safrano, dozen ...	1 0 - 2 0
Hyacinths, Roman, 12 sprays ...	1 0 - 1 6	Stephanotis, 12 spr. ...	6 0 - 8 0
Lapageria, 12 blooms ...	10 0 - 2 0	Tuberose, 12 blms. ...	0 9 - 1 6
Lilac, white Fr., bun. ...	5 0 - 7 0	Violets, 12 bun. ...	1 0 - 1 6
Marguerites, 12 bun. ...	3 0 - 6 0	— dark, Fr., bunch ...	1 6 - 2 0
		— Parme, Fr., bun. ...	3 6 - 4 0

SEEDS.

LONDON: Dec. 12.—Messrs. John Shaw & Sons, seed merchants, of 37, Mark Lane, E.C., write that the seed market has this week been largely attended owing to the presence in London of agriculturists who are up for the Cattle Show. For re! Clover seed there is an improved feeling, and a few quiet purchases, more particularly of French red, are taking place at the low quotations now current. Alsike, white, and Trefoil are all steady. In Ryegrasses there is scarcely anything doing. Bird seeds are at present low in price and fine in quality. Blue Pens and Haricot Beans realise former terms.

CORN.

Averages.—Official statement showing the average price of British corn, imperial measure, in the week ended December 8:—Wheat, 31s. 3d.; Barley, 27s. 4d.; Oats, 16s. 9d. For the corresponding week in 1887:—Wheat, 31s. 2d.; Barley, 29s.; Oats, 15s. 11d.

FRUIT AND VEGETABLES.

SPITALFIELDS: Dec. 12.—Good supplies of all kinds of fresh vegetables, Apples, Pears, &c. Trade still very heavy. Quotations:—Pears, 3s. to 6s. per bushel; English Apples, 2s. 6d. to 6s. do.; do., 1s. 3d. to 3s. per half-bushel; American do., 10s. 6d. to 21s. per barrel; Guernsey Broccoli, 5s. to 7s. per tally; Cauliflowers, 4s. to 6s. do.; Cabbages, 1s. 6d. to 2s. do.; Savoys, 1s. 9d. to 2s. 6d. do.; Spinach, 1s. 6d. to 1s. 9d. per bushel; Brussels Sprouts, 1s. to 1s. 3d. per half-sieve; Parsnips, 6d. to 8d. per score of 22; Seakale, 1s. 3d. to 1s. 6d. per punnet; Greens, 1s. to 1s. 3d. per dozen bunches; Turnips, 1s. 6d. to 1s. 9d. do.; Carrots, 1s. 3d. to 1s. 9d. do.; Horseradish, 11d. to 1s. 2d. per bundle; Celery, 8s. to 12s. per dozen bundles; English Onions, 4s. to 5s. per cwt.; Belgian do., 2s. 9d. to 3s. per bag; Dutch do., 3s. to 3s. 6d. do.; pickling do., 4s. 6d. to 5s. 6d. do.; Endive, 1s. 6d. to 2s. per dozen; Carrots, 24s. to 30s. per ton; Mistletoe, 20s. to 30s. per large crate; do., 6s. 6d. to 10s. per small crate; Parsley, 1s. 6d. per dozen bunches.

STRATFORD, Dec. 11.—Both trade and supply have been good during the past week:—Cabbages, 2s. to 3s. per tally; Savoys, 1s. 6d. to 3s. 10.; Cauliflowers, 1s. to 1s. 6d. dozen; Turnips, 25s. to 45s. per ton; Carrots, household, 26s. to 32s. do.; do., cattle feeding, 22s. to 26s. do.; Mangels, 16s. to 18s. do.; Swedes, 17s. to 20s. do.; Onions, Dutch, 3s. to 3s. 6d. per bag; Watercress, 6d. per dozen; Apples, English, 3s. to 3s. 6d. per bushel; Chestnuts, 8s. to 9s. per bag; Lemons, 5s. 6d. to 7s. per box; Beet-root, 2s. per dozen bunches; Parsnips, 8d. to 10d. per score; Celery, per roll, 1s.; Carrots, 2s. to 2s. 6d. per dozen bunches; Parsley, 2s. do.; Holly, 6d. to 1s. per bundle; Horseradish, 1s. to 1s. 2d. do.

POTATOS.

BOROUGH AND SPITALFIELDS: Dec. 11.—For best qualities the market is firm, but other sorts are dull of sale.—Regents, Scotch, 80s. to 115s.; English, 60s. to 85s.; Hebrons, 65s. to 110s.; Magnum Bonums, 60s. to 100s. per ton.

SPITALFIELDS: Dec. 12.—Quotations:—Beauty of Hebron, 90s. to 100s.; Magnums, 65s. to 85s.; Imperators, 75s. to 85s.; Champions, 60s. to 65s.; and Regents, 85s. to 100s. per ton.

STRATFORD: Dec. 11.—Quotations:—Regents, 80s. to 110s.; Bats, light soil, 60s. to 90s.; do., dark soil, 55s. to 70s.; Beauty of Hebron, 65s. to 70s.; Scotch Magnums, 80s. to 100s. per ton.

Imports.—The imports into London last week consisted of 11,606 bags from Hamburg, 151 from Rotterdam, 576 from Stettin, 4 from Ostend, and 55 boxes from Malta.

HAY.

Averages.—The following are the averages of the prices obtained at the various metropolitan markets during the past week:—Clover, old, prime, 120s. to 147s. new, 80s. to 110s.; inferior, 90s. to 75s.; prime meadow hay, 115s. to 135s.; good new hay, 60s. to 100s.; inferior, 30s. to 75s.; old straw, 40s. to 48s.; new, 28s. to 42s. per load.

NOTICES TO CORRESPONDENTS.

AGRICULTURAL CHEMISTRY AND VEGETABLE PHYSIOLOGY: A. N. J. W. Either at the Birkbeck Institution, Chancery Lane, W.C.; or at the Polytechnic, Regent Street, W.

BRITISH PLANTS: H. L. We do not know of any one who grows complete collections of these plants for sale. You might find many at Mr. Ware's nursery, Tottenham, N.

CARNATIONS DISEASED: T. D. The Carnations are infested with microscopic eel-worms, called nematodes. The disease is almost identical with one of the worst forms of Cucumber-disease. For description and illustration of Carnation-disease see *Gardeners' Chronicle* of December 3, 1881, p. 721.

EFFECTS OF FROST: A. B. The Cherry Laurel (not Bay Laurel) leaves sent have been injured by frost.

ERRATUM.—At p. 678, col. a, for "sample of Solomon," read Temple of Solomon.

NAMES OF PLANTS: J. E. 1, *Thuopsis borealis* variegata; 2, *Cupressus Lawsoniana erecta viridis*;

3, *C. lutea*; 4, *Abies Pinsapo*; 5, *Tsuga Mertensiana*; 6, *Pinus Strobus*.—R. B. 1, *Cupressus sempervirens*; 2, *Juniperus*; 3, *Thuopsis dolabrata*; 4, *Cupressus Lawsoniana*; 5, perhaps *Picea Alcockiana*, but impossible to say from the specimen sent; 6, *Juniperus*; 7, *Retinospora filifera*; 8 and 9, *Juniperus*; 10, *Sciadopitys verticillata*, variegated form; 11, *Tsuga japonica*, probably; 12, *Juniperus*; 13, a variety of *Thuia orientalis*; 14, *Cryptomeria japonica*; 15, *Thuopsis borealis*; 16, *Retinospora pisifera*. Another time do not send more than six. The Junipers we cannot name.—R. L. *Pittosporum tenuifolium*.—Hy. Corder. *Odontoglossum Inseleyi*, probably.—N. N. E. Next week.—W. P. J. *Odontoglossum crispum*, yellow tinted; it may not be constant.—J. P. 1, *Zygopetalum Mackayi*; 2, *Maxillaria gracilis*.—H. J. R. *Nerine humilis*.—J. M. L. Pretty, but nothing remarkable.—W. H. K. *Epidendrum cochleatum*.—S. Taylor. *Canavalia ensiformis*.

NAMES OF FRUITS: J. H. I. 53, Warner's King; others so much bruised that they cannot be identified.—J. E. P. 1, King of the Pippins; 2, Ecklinville Seedling.

ORCHIDS: J. P. *Dendrobium luteolum* does best in a basket in the warm house. If you would make a good show of the plants, place them together. *Zygopetalum Mackayi* should be kept tolerably dry in a cool house whilst flowering. We advise you to buy a manual on Orchid growing.

PETROLEUM STOVES: Correspondent. There is Rippling's hot-water apparatus, as advertised in our columns. Apply to the Albion Lamp Co., Aston Brook Works, Birmingham.

VINES: Grapes. It is usual to build a wall round a Vine border, to prevent the roots straying into the adjoining land; but it is of questionable use, except in the case of the neighbouring soil being of bad quality. The conditions of a small walled-in area are not so healthy as those of an unconfined one. Numerous cases can be cited of Vines which have borne excellent crops, and the gardener has not been able to say where their roots were, and contrariwise, the whereabouts of every root almost is known, and the crop is of miserable quality. Foster's Seedling, Black Hamburg, and Lady Downe's, will do very well together in the same house, but Madresfield Court would be better by itself—or at any rate where it could be afforded more heat than is necessary for the others.—Enquirer. The roots have been long dead, and are covered with small insects; but these are not the cause, but the result of decay. Examine the border. The state of the soil and drainage may be at fault.

CATALOGUES RECEIVED.

EWING & Co., Sea View Nurseries, Havant—Cheap Collections of Roses.

R. GILBERT, Barleigh Gardens, Stamford—Strawberries and Novelties.

CURTIS, SANDFORD & Co., Devon Rosery, Torquay—Trees, Shrubs, Alpines, &c.

SAMUEL FOX ARMITAGE, High Street, Nottingham—Fruit Trees, Roses, &c.

DICKSONS & Co., 1, Waterloo Place, Edinburgh, N.B.—Fruit Trees.

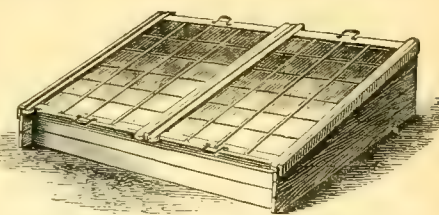
LAING & MATHER, Kelso, N.B.—Carnations and Picotees, &c.

COMMUNICATIONS RECEIVED.—M. Dunn.—N. E. B.—P. L. S. E. J.—F. A.—H. M.—F. & P.—Hauge & Schmidt.—H. Burry (next week).—W. Fisher.—F. S.—J. A. H.—W. R.—F. H.—G. M.—Ed. Nicoll.—Messrs. Buckhorn.—E. F. & Co.—C. C.—P. N. M.—D.—R. A.—R. J. B.—H. G. Rcht. f. (four).—Lucien Linden, Brussels.—J. C. E.—R. D.—W. R.—F. S. & Co.—T. C.—J. T. B.—Dicksons.—Baron V. Mueller.—H. C. N. V.—W. C. & Sons.—A. N.—G. P.

ENQUIRIES.

"He that questioneth much shall learn much."—Bacon.

SCARLET WALLFLOWER.—About three or four months since there appeared an account of such a plant being exhibited at the Royal Horticultural Society, and afterwards advertised in this paper, seed of the above, by a firm of seedsmen. Being desirous of procuring seed, I should deem it a great favour if any of our readers could give me the address. I should also be glad to hear of any novelties in Wallflowers, and where seed or plants can be obtained. Arthur. [The term scarlet must be taken relatively.]



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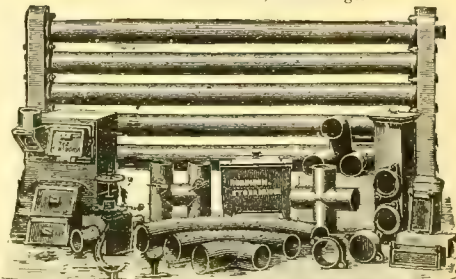
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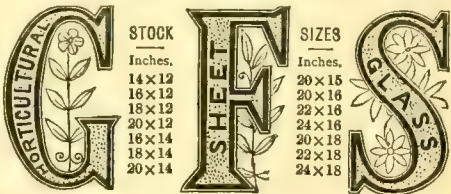
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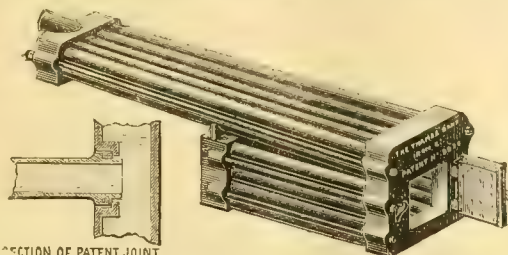
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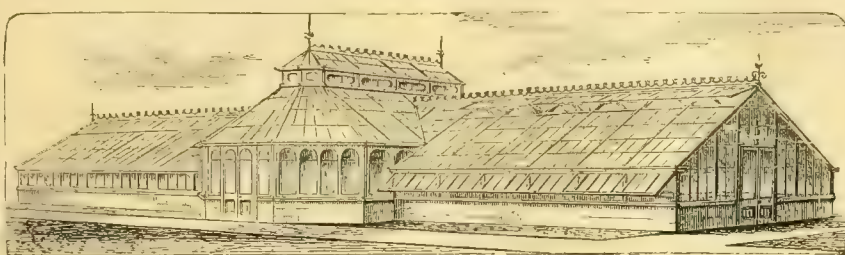
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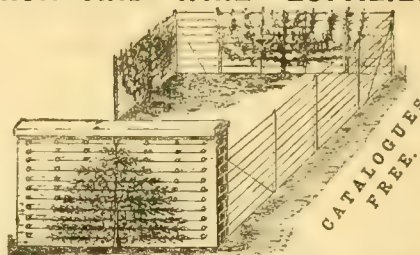
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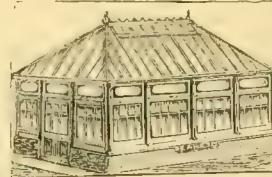
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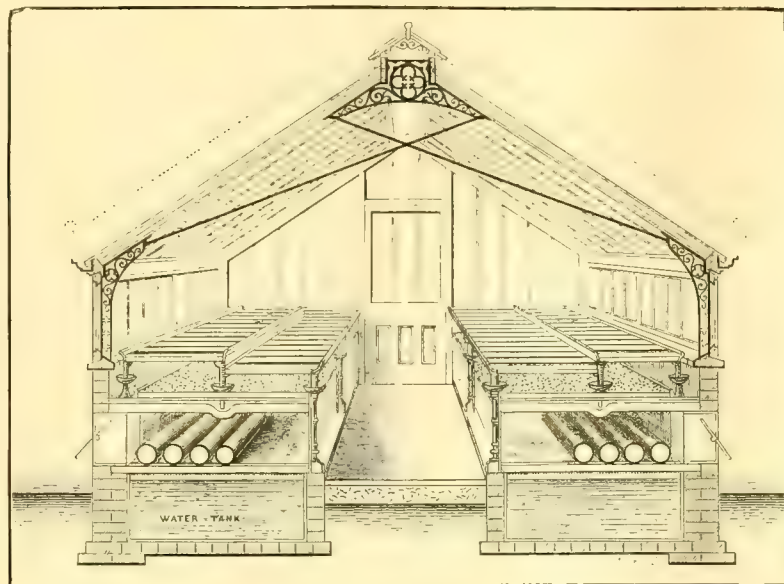
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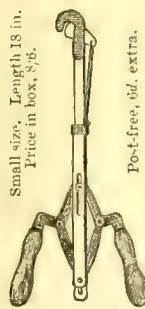
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Palms, Foliage Plants, Heaths, &c.

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Christmas Holidays.—Notice.

MESSRS. PROTHEROE AND MORRIS beg to announce that, in consequence of the CHRISTMAS HOLIDAYS, there will be NO SALE at their Rooms during NEXT WEEK.

Sample Sale.—January 1st, 1889.

MESSRS. PROTHEROE AND MORRIS beg to announce that their NEXT SALE of NURSERY STOCK and GREENHOUSE PLANTS from Sample, will take place at their Auction Rooms as above, for which they will be glad to RECEIVE NOTICE OF ENTRIES as soon as possible.

Preliminary Notice.—Friday, January 11, 1889.
ODONTOGLOSSUM ALEXANDRE, fine established Plants, all unfowered in this country, specially selected.
NAMED CYPRIPEDIUMS.

For Sale, without reserve.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY, January 11, 1889, by order of Messrs. Shuttleworth, Carder & Co. On view morning of Sale, and Catalogues had.

Preliminary Notice.

THE BARVINS PARK COLLECTION OF ORCHIDS.—Unreserved Sale of the whole of this extensive Collection of Established ORCHIDS, by order of the Proprietor, in consequence of his leaving the neighbourhood and selling the Estate. The collection includes a large number of Odontoglossum Alexandre, all unfowered, principally selected from Messrs. Shuttleworth, Carder & Co.'s importation of the broad-petal PACHO varieties. Seven days' Sale.

MESSRS. PROTHEROE AND MORRIS beg to announce that they have been favoured with instructions to SELL by PUBLIC AUCTION, at their Rooms, in JANUARY and FEBRUARY NEXT, the whole of this extensive COLLECTION OF ORCHIDS.

Full particulars will appear in due course.

Thursday Next.—(Sale No. 7833.)

10,000 GRAND BULBS of LILIUM AURATUM (some in cases as received), L. Kramerii, L. longiflorum, and other LILIES just received from Japan, in the finest possible condition; 5000 splendid Berlin LILY of the VALLEY, Crowns; several hundred LILY of the VALLEY Clumps; Home-grown LILIES, Hardy Japanese IRIS, First-class Double South African TUBEROSES and AMARYLLIS, fine Clumps of HELLEBORUS NIGER, LILIUM HARRISII, &c.

MR. J. C. STEVENS will SELL the above by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, December 27, at half-past 12 o'clock precisely.

On view morning of Sale, and Catalogues had.

Saturday, December 29.—(Sale No. 7835.)

CHOICE NAMEY, STANDARD AND DWARF ROSES. Pyramid and Dwarf-trained FRUIT TREES, consisting of APPLES, PEARS, PLUMS, CHERRIES, &c.; Hardy Ornamental SHRUBS and CONIFERS in great variety; BORDER PLANTS in variety. Also several hundred Lots of First-class BULBS, comprising Hyacinths, Tulips, Crocuses, Narcissus, Scillas, Snowdrops, Iris, Anemones, Ranunculi, Lilliums, Gladioli, Ixias, Sparaxis, &c.; Spirea japonica; Lily of the Valley in Crowns and Climbers, &c.

MR. J. C. STEVENS will SELL the above by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on SATURDAY, December 29, at half-past 12 o'clock precisely.

On view morning of Sale, and Catalogues had.

Special Sale of Orchids in Flower and Bud.

MR. J. C. STEVENS begs to announce that his NEXT SPECIAL SALE OF ORCHIDS in FLOWER and BUD, will take place at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, January 17, at half-past 12 o'clock precisely, and he will be glad if Gentlemen desirous of Entering Plants for this Sale, will SEND LIST AS SOON AS POSSIBLE.

Preliminary Notice.

MESSRS. PINKERTON AND CO. have been favoured with instructions by James L. Boyson, Esq., Caen, France, to SELL by AUCTION, at an EARLY DATE, his large and very valuable Stock of CHOICE ROSES, &c.

Many Prizes have been taken for Rose Growing by Mr. Boyson, including Paris, May, 1887, and May, 1888. The Auctioneers recommend intending Planters to wait this Sale. Catalogues on application.

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WANTED TO RENT, RANGE of GLASS, suitable for Growing Cut Flowers, Fruit, Tomatoes, &c., extensively for Market. Full particulars, G. H., 41, Wellington Street, Strand, W.C.

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Expect to receive in the course of the next few days a fine importation of

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JOHN LAING AND SONS have great pleasure in offering plants of this, the finest species of the genus. (See *Gardeners' Chronicle*, page 6710.) Price 5s. and 7s. 6d. each. The Nurseries, Forest Hill, S.E.

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OUR CATALOGUE of Select Vegetable Seeds, Flower Seeds, Seed Potatoes, &c., is now ready, and may be had post-free on application. DICKSONS (Limited), The Royal Seed Warehouse, CHESTER.

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To the Trade.

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To the Trade.

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LILIUM AURATUM, Imported Bulbs, 6d., 9d., 1s., 1s. 6d.
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Yews, bushy, and with a profusion of fibrous roots,
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CLEARANCE SALE (at sacrifice) of
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LATANIA BORBONICA and **PHOENIX RECLINATA**, 12
inches high, 4s. per dozen, 30s. per 100. Package and
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Twelve assorted **PALMS** and **DRACÆNAS**, averaging, with
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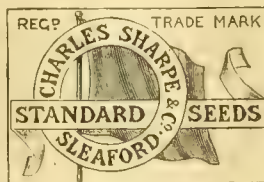
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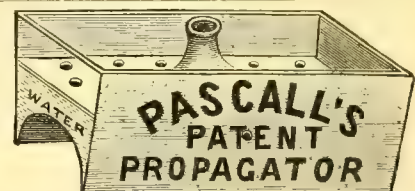
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CORNU, Prof. Max, Paris.
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ELWES, H. J., (Lilies). [fers].
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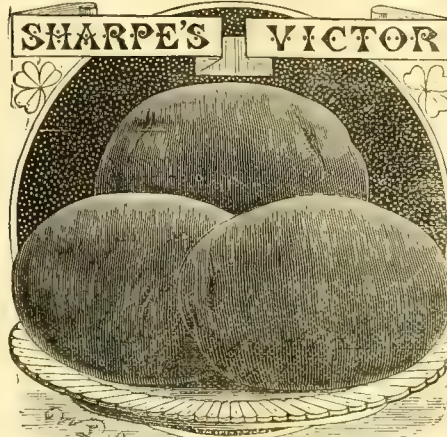
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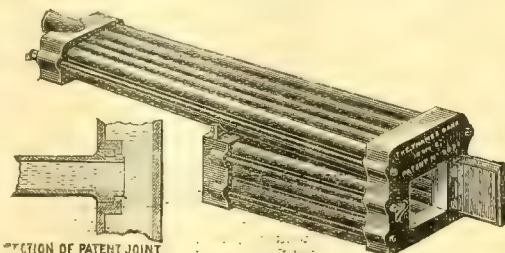
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FOR

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THE

Gardeners' Chronicle.

SATURDAY, DECEMBER 22, 1888.

KNIGHTSHAYES,

THE Devonshire seat of Sir John H. Heathcote-Amory, Bart., is charmingly situated within sight of Tiverton, but not too near it, in the narrow valley of the Exe, and high up on the bank, from which it looks across a fertile, sloping park, full of large timber, down to the river, across the country southwards—a beautifully wooded, rich and pastoral country—and down the little valley to the half-hidden town whose several shafts and towers are seen among the trees.

We are here in the pleasant county of Devon, in the latitude of Apple orchards and of good cider and perry. Sir John's home-farm, which I came down here to visit for the sake of its Devon cattle and prize-winning Devonshire breed of sheep, has not less than 30 acres in Apple orchards, which produce in good seasons no fewer than 400 to 500 hogsheads of cider, though this year, unfortunately, not more than 50 hogsheads are expected; and the haymakers, thinking of sunshine and heat next year—though they have been very sparingly vouchsafed in the present season—are beginning to fear that the customary four quarts per head per diem may fail them; and that the seasoned barrels they bear about for the holding of all this liquor, and of considerably more sometimes in long days, it is said, may have to be filled with something inferior to their usual beverage.

There is no better test of climate than the character of the vegetation. We are not only in a pastoral district here, but in what farmers call a "grassy" country—that is, grasses and weeds spring very freely in the corn stubbles: a proof of a humid atmosphere. Ferns and mosses grow freely in the lanes. Barley is sown a month later than in Essex that it may not be injured by those destructive hoar frosts which cold and

moisture occasion in unsheltered fields. But the winter is far milder than in Essex. A Devonshire gentleman told me that his Peaches and Apricots thrive the worse, he thought, for want of a colder winter, which would ensure the complete rest of the trees. I think he may be right, for a laird in Orkney told me that the Tamarisk, which forms good seaside hedges on the Sussex coast, is not sufficiently put to rest in Orkney, where the Gulf Stream rarely allows of twenty-four hours frost, and where the little lochs, exposed as they are, are seldom covered with ice as thick as a sixpence.

But you may see at a glance that tender shrubs thrive at Knightshayes, and that the winters must be mild. The house, which is a large one, built by the present owners on an old site, is exceedingly well clothed with ornamental shrubs and creepers, which I could not examine with Mr. Peebles, who manages the fine gardens here, and seemed very willing to show me round, till the daylight was almost spent. By dint of straining one's eyes and feeling the foliage, we made out several things, till presently I laid hold of something very prickly, when we both agreed it was time to desist.

But even in the gathering darkness I could see that the front and sides of the great house were beautifully covered to a considerable height—painted, so to speak, in the best possible colours for house walls by the tasteful hand of the planter. I may mention among the wall plants various Magnolias, Myrtles, Escallonia—always a welcome shrub with the most cheerful bright green leaves—Viburnum Sieboldi, Stauntonia latifolia, and Azara macrophylla, only two years planted, but 12 feet high and 5 feet across, with leaves bright and glossy, and small pale berries, which I could not distinguish in the dusk. There were specimens of Berberis, common perhaps, but beautiful, and a number of Roses, some of them with very sharp prickles, I should think! Then another evergreen grows here which is comparatively rare, though I planted it, and had it killed by frost, only forty miles from Middlesex, thirty years ago. I mean that exquisite flowering shrub Desfontainea spinosa, which all should grow who can.

The demand for flowers at the town house and here was suggested, and the skill of the gardener displayed to my eyes by the sight of 500 pots of Chrysanthemums, which were then outdoors, to be flowered in the various houses. All the leading sorts are here, especially those which are particularly suitable for decorative purposes. The plants are all in 14-inch pots, and their size and vigour are so great that each pot has been furnished with about twenty-five canes, to which the stems are tied. One of the greenhouses is beautifully decorated with Palms and foliage plants, Adiantums, and two specimens of that most graceful of all trees—if, in deference to Humboldt's opinion, we except the Tree Ferns—the Araucaria excelsa, in full foliage, the lower branches drooping over the pots. Two trees of this species are here in good foliage, though they stood in the drawing-room two months during last winter.

Mr. Peebles is a great fancier and successful raiser of the Coleus, and has sent out this year two new kinds—C. majesticus and C. Miss Jane Thomson, a light coloured beauty. Last year he brought out Lady Amory, which is now in Mr. B. S. Williams' catalogue, and he has now half-a-dozen unnamed sorts of different strains, which will shortly be consigned to Mr. Williams to be exhibited by him at the meetings of the Royal Horticultural Society. The gorgeous colouring

of these seedlings is far beyond my powers of description. Who shall name the shades of colour which their leaves present?

A plant to arrest the attention, and one which the ancients would have worshipped, stands in one of the houses. It is a three-year-old Allamanda, which I may describe as columnar in shape, growing in a No. 1 pot, 11 feet high, and loaded with hundreds of the well-known pale soft yellow blossoms of this beautiful climber. In order to keep the plant upright and to give it the form of an Azalea on exhibition its branches have been tied to several stakes set in the pot.

The vinery is divided into five houses, and among them is a house of Muscats that was a credit to the gardener who grew them. They were in the highest perfection, ripe and ripening, almost every bunch fit to be cut as a specimen, and the number of bunches so great that the cutting of 40 lb. the other day caused no gap in the crop of many hundredweights. The second house contains White Syrian, Golden Queen, and other sorts, three years planted; and another is remarkable for Muscat canes of this year's growth 20 feet long.

The second crop of Figs was ripening in one of the houses. Peaches abound here. The houses being wide, they are planted on trellises 12 feet apart, and crossing the houses from front to back, so that the sun is always on the fruit. In the case of one tree ten Peaches were touched by the extended fingers in spreading out the hand; two dozen had been taken from that tree in the morning, and a big crop remained of Peaches of good size. The same tree bore a great crop last year.

I omitted to mention before leaving the vinery that Black Alicante is a great favourite here as a late Grape, and is well grown. White Frontignan is grown here as a "tasty" Grape. The sorts of Peaches are Hale's Early, Noblesse, Bellegarde, Dr. Hogg, Grosse Mignonne, Sea Eagle, &c. *H. E.*

SPECIMEN TREES IN KEW GARDENS.

ARBUTUS ANDRACHNE.—The usual height of this ornamental evergreen tree is cited at 10–14 feet, but the specimen which we now figure (fig. 100), and which is growing in the Royal Gardens, Kew, has a height of 20 feet, a spread of branches of 20 feet, and a girth, at 2 feet from the ground, of 3 feet 8 inches, so that it cannot be much inferior in size to the native specimens in Greece. A peculiarity of this tree is that the outer bark peels off in large flakes, leaving the newer bark exposed. The smoothness and rich brown-pink hue of the newly-exposed surface is very beautiful. We have not as yet heard of the occurrence, but we have no doubt that some indignant ratepayer will some day indict the authorities at Kew for their barbarity in removing the bark of this tree, just as it is not uncommon to see protests in the newspapers against the supposed mischievousness of little wanton boys in removing the bark from the Plane trees in the London parks. The present species is a native of the Levant, and was mentioned by old Greek writers. The proper spelling is said to be *adrachne*, or in modern Greek, *adrachla*. The fruit is similar to that of the Irish Arbutus Unedo, and the wood is used for fuel and other purposes in its native country. The leaves are longer than those of the common Arbutus, not so jagged at the edges, and smoother on the surface; the flowers are white and bell-shaped, something like those of the Lily of the Valley in size, form, and colour, and arranged in dense terminal panicles. Arbutus Unedo, the common Strawberry tree of Killarney, *U. hybrida*, and *U. procera*, are all worth growing as

handsome evergreens; while the red berries of *A. Unedo* give it an additional claim to the attention of the planter. The present species rarely fruits in this country, and, indeed, is somewhat tender when young.

NEW OR NOTEWORTHY PLANTS.

CLEISOSTOMA RINGENS, *n. sp.**

THIS very interesting little gem was imported with *Phalanopsis Sanderiana*, no doubt by Mr. F. Sander. I had it from Mr. James O'Brien. It has very few ligulate, emarginate leaves which are equal to those of a small *Phalanopsis grandiflora*, Lindl. (O.Br.) Thus they are 3–4 inches in length, 1½ inch in breadth. The leaf in my herbarium is shorter. Even in the dried state it shows very well the strong and cartilaginous state it had when alive. I believe the leaf had a purple hue above, but I say this from memory only, having made no note about it. The purple peduncle bears very few flowers (I saw two), which I found one-sided, and which are the size of those of *Phalanopsis Parishii*. The stalked ovaries are light ochre-yellow. The sepals are ligulate, blunt acute. The petals much narrower, acute, of the same length. Spur of the lip very large, broad, cylindrical, emarginate at the retuse apex. Side lacinia retuse very short. Mid-lacinia oblong apiculate, or three-lobed, blunt or emarginate, full of very inconspicuous small warts. There is a large callus under the column. It is oblong, like an anchor near the column, having on each side a projecting shank-curved downwards and an emarginate bilobed end towards the extremity of the spurs. There is also a Sarcanthoid septum in the spur. Column slender with a very long rostellar beak. Sepals and petals ochre-yellow, base of the column purple in front. Mid-lacinia of lip purple. There is an orange spot on each side of the side-lacinia. Alas! I had no other. I always waited for fuller materials. Mr. O'Brien, however, who appears to have an unrivalled memory, has regularly praised his pet, I believe every third month since September, 1883; so that finally I do what is wanted. *H. G. Rehb. f.*

CYPRIPEDIUM BURFORDIENSE X, *n. hybr. Angl.*, *orig. dubi.*

This appears to be a totally unknown hybrid, though it is a very difficult task to affirm this. The leaves are said to be like those of *Cypripedium Barteli* X, but to be about one-third broader, one-third shorter, as well as a little thicker. The peduncle is dark reddish-brown, covered with short velvety hairs. The bract is less than half the length of the ovary; it has a very sharp dorsal keel and dark lines of nerves. The ovary is a little lighter than the peduncle. The upper sepal is very large cuneate elliptical acute, of a very light rosy mauve hue, excepting the tip, which is adorned with a white nearly rhombic patch. There are seventeen strong dark purple nerves. The connate sepal is whitish oblong ligulate acute, exceeding the length of the lip. Descending petals light greenish at the base, with superior border of the lightest purple, and brownish-purple on the anterior or exterior somewhat dilated part, its nerves green. There are some purple hairs at the base and cilia around the border. Near the superior margin are two very dark mauve-purple lines, and this is, as far as I know, quite novel. In addition to these there are very few (four in the flower at hand) mauve-purple exceedingly short narrow spots or lines. The lip is of the shape of that of *Cypripedium Argus*, brown-ochre-colored underneath, with a yellow border around the mouth

* *Cleisostoma ringens*, *n. sp.*—Foliis ligulatis apice bilobis brevibus, valde cartilagineis racemo paucifloro, secundifloro; sepalis ligulatis obtusa acutis; tepalis lanceis acutis, labelli calcaris amplo apice retuso nunc emarginato, callo carnosus sub columna basi sub columna utrinque retrorsum unicus, cruribus calcaris apice spectralibus, apice versus calcaris apicem emarginato, septo Sarcanthideo procalcaris; columna gracilis. Ex insulis Philippinis. *H. G. Rehb. f.*

of the spur; the inflexed margins of the stalk ochre coloured, with small red spots. The greatest part of the lip is reddish-brown of the usual tint. The saminode is nearly like that of *Cypripedium Argus*, but the lateral teeth are shorter than in *Cypripedium Argus*. Both the vexillar dorsal sepal and the lines on the petals are very remarkable. It was kindly sent me by Sir Trevor Lawrence, and is a seedling raised at Burford Lodge. It remains in flower a very long time. When I obtained the flower through Mr. F. Sander it had been expanded for four weeks, and then it was kept in good order in a glass for three weeks.

Cypripedium Barteti, of which Mr. Sander kindly sent me fresh leaves, has the light garlic-green colour with darker, but with very light angular markings

all be correct, as I do not doubt, I can never believe in the plant being a variety of *Dendrobium cariniferum*. I had, however, no other materials. On January 17, 1887, Mr. F. Sander sent me a few dried flowers collected in Upper Burmah by his traveller, Mr. Michalitz. If the collector had added a piece of the stem and leaves naming might have been possible. What an immense sum has been lost by the neglect to send sufficient materials! and with what gratitude must we regard such collectors as the two Lobbs, Fortune, Lehmann, Forstermann, and others, who kept in view the interests of their patrons, of their own honour, and of science. Mr. Michalitz, excepting this lack, is, as I learn, a very careful collector, and informed Mr. F. Sander that he had been told by Mr. Boxall that the plant was my *Dendrobium*

indication may be understood from the poor garden plant not displaying the full extent of its black hairy surface, its ornament in its natural state.

The thickness of the stem at hand is that of a large goosequill. Leaf-blades 3 to 4 inches long by 4 lines in breadth at the broadest diameter; linear ligulate, cuneate at the base, and tapering into a narrow, sharply, bidentate apex. The leaf-blades are rather thin, and when dried prominently nerved. The leaves of *Dendrobium cariniferum* have the blades three or four times broader, blunt bilobed at the apex which is very little narrower. The short ligulate acute bracts of *Dendrobium Wattii* are quite covered with black hairs at the period of the development of the flowers—three in one raceme in the specimen kindly given me by Sir Trevor Lawrence. The flowers are



FIG. 100.—*ARBUTUS ANDRACHNE* AT KEW. (SEE P. 724.)

like those found in the group of *Cypripedium venustum*.

It is supposed to be a hybrid between *Cypripedium Argus* and *C. philippinense* (laevigatum). There is much resemblance to *Cypripedium Argus*. The latter species might have given the very thick leaves. *H. G. Rehb. f.*

DENDROBIUM WATTII, *Rehb. f.*: *DENDROBIUM CARINIFERUM* VAR. *WATTII*, *Hook. f., Bot. Mag.*, 1883, t. 6715.

This is regarded as a variety of my *Dendrobium cariniferum*, by Sir Joseph Hooker, who gave a careful description as well as several remarks, and a very good portrait was made by Miss Smith in the magazine above noted.

My knowledge of the plant began with the inspection of the documents published by Sir Joseph. If

virginicum (see *Gardeners' Chronicle*, xxii., n.s., October 5, 1884, p. 520), a plant that has so far proved a monopoly with Messrs. H. Low & Co. This was a mistake. *Dendrobium virginicum* has the broad leaves of *D. cariniferum*, but a short blunt chin, shorter, blunt acute sepals and petals, and two callous lines on the disc of the lip, between the side lacinia, reaching only to the base of the mid-lacinia. And now, after five years' suspense, by the kindness of Sir Trevor Lawrence, Bart., I have nearly fully satisfactory materials at hand! An old stem, the fine leaves, and a three-flowered raceme on the old stem. I lack only the young sheaths, which are said by Sir Joseph to be faintly hairy. The old furrowed stem is more than a foot long, covered with light ochre or sepia coloured sheaths, covered with very small black points. If those are, as I feel inclined to believe, the bases of the fallen hairs, then Sir Joseph's

equal in size to those of a good *Dendrobium cariniferum*. They are of the purest snow white. The thickened median ligulate patch on the disc is of a fine cinnabar colour, running on to the superior part of the anterior lacinia, white at the base only. There are few nerves on the lateral lacinia covered with cinnabar colour. The mentum (chin) is sordid reddish-brown. The stalked ovary is quite white. There is some light brown colour at the base of the column where the lip ceases to be adnate. The whole flower lacks the plump shape of that of *Dendrobium cariniferum*. Its slender chin is quite straight. The dorsal sepal is lanceolate-acute. The lateral sepals are triangular acute without the least vestige of the keels that induced me to give the name of *cariniferum*. Petals oblong apiculate (acute in *Dendrobium cariniferum*). This character has been very well represented by Miss Smith, *l.c.* The

lip is narrower than in *Dendrobium cariniferum*, mid-lacinia protruded, cuneate, obovate, emarginate, apiculate, toothed on the borders without the slightest vestige of hairs, or of the strong asperities which are so abundant on the inner surface of the lip of *Dendrobium cariniferum*. The colour of the flowers of the last-named plant is white with mentum and tips of the sepals, side-lacinia and disc ochre-coloured. My variety, lateritium, kindly sent me by Mr. F. Sander in 1883, has the discs of the lip brick-red.

The Kew plant is stated by Sir Joseph Hooker to have been sent by Dr. Watt, F.L.S., from Manipore.

I may be permitted to suggest the possibility of the plant being a hybrid between *Dendrobium Jamesianum*, Rehb. f., and *D. flexuosum*, Griff. *H. G. Rehb. f.*

DEVONHURST, CHISWICK.

THIS, the pretty suburban residence of E. H. Watts, Esq., will long be a famous spot, it having formed at one time a part of the Arboretum of the Horticultural Society in its early days when its collectors sent home the rare, beautiful, and fine trees, which now enrich our collections, such trees as probably will not be found in a place of its extent (11 acres) elsewhere in the country. I will note some of the more striking specimens observed on the occasion of a recent visit to the place. On the west side of the house stands a Mahaleb Cherry, one of the finest specimens in the country. It has a large spreading head, and its branches sweep the ground; its height is 35 feet, 50 feet through the branches, the principal of which are bound together with iron rods. When in flower, it is entirely covered with its beautifully scented white flowers, and forms a fine object. On the south side of the house are fine specimens of Beeches—purple, and the cut-leaved (*Fagus sylvatica incisa*). The trees have had plenty of room in which to develop, and are now grand specimens, from 60 to 70 feet in height.

A little further south is a fine variety of the Copper Beech, which in the early summer presents a great contrast to the foliage of the surrounding trees. Adjoining the Beech trees on the lawn is a fine symmetrical specimen of the Horse Chestnut, about 70 feet in height. In close company is also found a fine example of *Æsculus rubicunda*, about 45 feet high, with a dense round head. The tree flowers freely, generally producing large quantities of fruit. A little to the south of the last mentioned is a tree of *Ailantus glandulosa*, about 70 feet in height. It is branched out in three main stems close to the ground. Adjoining is a notable group of three trees of *Gleditsia*—*G. triacanthos* is the tallest, being about 60 feet in height. This tree generally produces fruit freely every season, but this year has proved an exception to the rule. When in fruit, it forms a very ornamental tree, its long pods being very conspicuous when the sun is shining; *G. sinensis* is about 30 feet in height—this, when in flower, emits a strong perfume, somewhat resembling that of Mignonette, the stem of the tree is thickly covered with long prickly spines, giving it a distinctive aspect; *G. sinensis inermis*, 35 feet high—the flowers of this are incomplete, therefore producing no fruit.

A fine group of eight *Fraxinus* next attract attention, *F. angustifolia*, being the tallest, about 55 feet in height. Near here is a good specimen of *Pinus Pallasiana*, which, with a good specimen of the Scotch Fir, about 70 feet in height, are nearly all the Conifers which have survived the London fog and smoke. But it may be remembered that *Cedrus Libani* and *C. atlantica* are exceptions, and grow fairly well here—the last named generally coning freely: this year, however, it has not done so.

Near some Ash trees are two Oaks planted close together—*Quercus cerris fulhamensis*, and *Q. c. fulhamensis latifolia*. Curiously enough, the last named retains its leaves in a withered state until spring. Close by here is a specimen of *Pyrus sorbus*, about 55 feet in height, which generally produces fruit freely. Along the south side of the grounds are some large trees of *Pavia rubra*, *P. flava*, and *P. carnea*.

The stocks (common Horse Chestnut) these are worked on have grown much larger than the scions. There are also some Elms which have attained considerable dimensions. *Ulmus campestris foliis variegatis* sends up its variegated suckers freely at a considerable distance from the main stem. On the east side of the ground are fine large Elms, including varieties of *U. montana* and *campestris*, the highest being about 80 feet. Here also are a few fine trees of *Tilia alba*, which, when the wind is blowing, forms a pleasing object in the landscape, the silvery under-side of the leaf looking very pretty as it is turned up by the wind.

In this quarter, too, we find some good specimens of the Oak, there being over two dozen varieties—*Q. cerris*, *Q. peduncularis*, *Q. sessiliflora*, *Q. Ilex*, *Q. suber*, &c., all forming large trees. Towards the lawn tennis ground are some fine Maples, including *Acer Pseudo-platanus*, the golden Acer (or *Corstophine Plane*), remarkably pretty in early spring, with its golden-yellow foliage, showing to great advantage amongst the surrounding sombre foliage. *A. p.-p. variegata*, *A. heterophyllum*, *A. macrophyllum*, a noble example, being 72 feet high, 10 feet in girth, diameter of spread of branches, 60 feet; *A. monspessulanum*, *A. palmatum*, *A. platanoides*, and the Ash-leaved Maple, *A. negundo fraxinifolium*, which has a spread of branches 66 feet though. Here is also a fine specimen of the Butter Nut (*Cary amora*), also two fine clumps of *Quercus Ilex*, and a good specimen of the Hornbeam (*Carpinus betulus*). Close by the house is a very handsome tree of the Sweet Chestnut.

Along the east side of the grounds is a deep belt of evergreen and flowering shrubs, and amongst them are planted standard trees of Apples and Plums, which, when in flower, produce a most pleasing effect, and when in fruit are likewise very ornamental, to say nothing of their use. This idea might advantageously be followed in similar positions in a great many more instances than at present appears to be the fashion.

Regarding Apples, we noted a nice quarter of young pyramids on the Paradise stock, planted about four years, showing flower-buds remarkably well.

The attractions of Devonhurst are not wholly confined to the outdoor department. There is a nice range of glass. Mr. Watts is taking up the cultivation of Orchids. The Cattleyas are looking very healthy, and are showing well for flower. *Cypripedium*, *Odontoglossums*, *Lælias*, &c., give a welcome glow of colour.

Foliage plants are well done. A good table plant is *Aralia Chabrierii*, a charming show species, represented here by an extremely graceful example. It only remains to be added that the place is under the excellent management of Mr. Alexander Wright. *B.*

[We are indebted to Mr. Wright for the following measurements of trees in this garden:—*Quercus suber*, height, 35 feet; girth of stem, 6 feet 6 inches; spread of branches, 40 feet. *Q. sessiliflora*, 60—65 feet; girth, 7 feet 6 inches. *Q. Ilex* var. *latifolia*, 38 feet; spread, 55 feet. *Acer Negundo*, 40 feet; girth, at 4 feet, 6 feet 9 inches; spread, 66 feet. *A. monspessulanum*, 30 feet; girth, 5 feet; spread, 45 feet. *Cedrus Libani*, 50 feet; girth, 5 feet 6 inches; spread, 40 feet. *C. atlantica*, 52 feet; girth, 4 feet. *Pinus Pallasiana*, 60 feet. *Ulmus campestris*, 85 feet; girth, 9 feet. *Pavia flava*, 45 feet; girth, 5½ feet. *Ed.*]

ORCHID NOTES AND GLEANINGS.

LÆLIA AUTUMNALIS.

A REMARKABLE and very handsome monster of *Lælia autumnalis* has been sent me by Mr. John Cowan, manager of the Liverpool Horticultural Co., Garston, near Liverpool, to report upon, with the information that the flower is the only one produced by the plant, which is an imported one, now flowering for the first time in this country. Its peculiarity consists in the fact that the dorsal sepal is wholly united with the back of the column, for the whole length of the latter, and in a very singular manner too; while the lip and remaining segments are quite normally developed. The column is of the usual size, and the anther quite perfect, but there is a dorsal keel-like growth throughout its length, to which the sepal is attached along the central line. The sepal itself is also very peculiar. It can best be described by saying that there is a second super-

numerary sepal, three-fourths as long as the ordinary one, and correspondingly narrower, in front of the ordinary sepal: and, like the column, only adnate to it along its central line. It extends beyond the column half-way to the apex of the ordinary sepal, in this part its margin being quite straight, but from the apex of the column downwards the margin on either side is strongly and regularly crispo-undulate, into about seven folds, like a goffered frill, as it would be termed in the laundry. This supernumerary growth, which is coloured like the sepal, is doubtless analogous to the corona of *Narcissus*. It is probably a case of accidental union of organs, rather than a permanent one.

CATASETUM TABULARE (*Lindl.*) var. *SERRULATA*, Rehb. f.

A flower of this remarkable *Catasetum* has been forwarded to me by Messrs. James Veitch & Sons, of Chelsea, for identification; and proves to be the above-named, of which a figure may be found at t. 1223 of the *Gartenflora*. The expanse of flower is over 2½ inches, the narrow sepals very pallid green, the petals broader, and densely punctulate, with pale purple-brown on a pale green ground. The lip is a highly remarkably organ, in colour somewhat like the petals but paler; with a conical spur underneath, and a very large fleshy crest on the front and centre, to which the name tabulare applies. In this variety the margin of the lip is serrulate, and the crest smooth and of a light cream colour; while in the type the same organ is more rugose and hairy, and the whole flower of a darker colour. The arrangements for effecting fertilization are, in the male (for the female is, I believe, at present unknown) exceedingly remarkable. The great tablet-like crest serves as a landing-stage for the insect; one antenna is curved round at the base of the column, and doubtless functionless as in several others with a similar arrangement; while the other stands forward in the mouth of the spur, ready at the moment that the insect tries to push its head inside, to convey the stimulus to the anther, and precipitate the pollinium on to the shoulders of the insects. Will none of our great importers look out for the females of this singular genus?

LÆLIA CRAWSHAYANA, Rehb. f.

This beautiful plant was described as probably a natural hybrid between *L. alba* and *L. anceps* or *L. autumnalis*. Some time ago I received a flower said to be an authentic one, on which point I am quite satisfied; and I then thought its hybrid character probable, the plant having the general appearance of *L. alba*, with the colour of *L. autumnalis*, though I could not find the slightest trace of *L. anceps* blood in it. I have now received a three-flowered peduncle from Baron Schroder, The Dell, Egham, Surrey, through Messrs. Veitch & Sons, of Chelsea, and I am inclined to think it is only a most beautiful rose-coloured form of *L. alba*. The shape of the segments and lip, and even the yellow crest, appear quite identical, while the approach to *L. autumnalis* is in colour only. Other rose-coloured forms of *L. alba* are known. *R. A. Rolfe.*

MAXILLARIA GRANDIFLORA.

Numerous as the species of *Maxillaria* are, very few of them find a place in collections outside botanic gardens. There are, however, some eight or nine which will well repay cultivation, and of these, with the exception of *M. Sanderiana*, the above is probably the best. It very much resembles *M. venusta* both in habit and shape of flower, but it is superior to that species in not developing its flowers face downwards, so that they cannot be properly seen unless lifted up. The flat, two-edged pseudobulbs bear single, leathery, dark green leaves, 12 to 14 inches long. The flowers are produced singly on erect scapes 6 inches long, and measures 3½ inches long, and measure 3½ inches in diameter. The sepals and petals are pure white, and firm in texture, the latter being smaller than the sepals, and recurved. The side-lobes of the lip are erect, and rosy-purple, the triangular front lobe being of a

beautiful soft yellow. Like the flowers of many other *Maxillarias*, these give off a pleasant fragrance. Coming from the Andes of Paraguay and Peru, this species require a cool, moist atmosphere, and should be grown in pots in a compost of peat and sphagnum. It is flowering now at Kew. *W. B.*

DENDROBIUM PRIMULINUM.

A lovely variety of this Dendrobe is now flowering most profusely, having ninety-seven flowers on nine growths, in Mrs. Arbutnot's collection, Bexley (gardener, Mr. Mitchell). It is growing in a 32-sized pot, with a little peat and moss, and it looks remarkably chaste when hanging beside the *Sophrontitis grandiflora*. *John Carrill.*

PHALENOPSIS INTERMEDIA PORTEL.

In the fine gardens of Mrs. Perrin, Davenham, Malvern, under the care of Mr. A. Bradshaw, a noble specimen of this rare white and rose species bears a five-branched spike of fifty-nine flowers. Each flower is over 2 inches in width, and excellent culture has made the rosy-crimson front lobe of the labellum, and the spotting on the side lobes very bright and showy. A branched spike of *P. amabilis*, 3 feet in length, has twenty-seven flowers, and others are good, a large-flowered rose variety of *P. Esmeralda*, with forty-seven flowers, being especially attractive.

CATTLEYA EXONIENSIS X.

A noble specimen of this handsome and fragrant production of Messrs. Jas. Veitch & Sons, is in flower in Mrs. Perrin's gardens, at Davenham, Malvern, with fourteen flowers. It is the best variety, with very rich crimson and yellow in the labellum, and petals also kept flatly expanded. It is a fine and valuable specimen, and it and the other Orchids here has been skilfully managed by Mr. Bradshaw.

MINIATURE ORCHIDS.

The object of the present note is to point out a few of the smaller Orchids, some of which rarely find a place in collections, but which, requiring little space and attention, are nevertheless objects both of interest and beauty. Many plant-houses might not only serve their present purposes, but also afford room for most of these little gems, and thus greatly add to their attractions. Two yards of copper wire strung about 9 inches from the roof-glass would hold a dozen or twenty of them, and after the plants were obtained, a few shallow pans made for suspending, and some peat fibre and sphagnum, would complete the outlay.

Amongst cool Orchids there are several remarkable little *Masdevallias*, *M. triaristella* and *M. trichostea* are easily grown and free-flowering; *M. muscosa* has the almost unique power of jerking up the column at the slightest touch. The genus *Pleurothallis* has not an enviable reputation amongst Orchid growers but some of its smallest representatives are very pretty. *P. macrolepharis* and *P. Barberiana* are similar in general appearance, but are quite distinct; they have transparent whitish flowers thickly and beautifully spotted with purple, the latter is scarcely ever out of flower. *P. ornatus* is a minute species, with leaves half an inch across and purple flowers, the sepals of which are furnished at the edges with numerous club-shaped appendages that twirl about at the slightest breath of air. *Sophrontitis grandiflora* is a well-known species, with bright scarlet flowers; *S. violacea* is equally beautiful, but is seldom grown. It has purplish-violet flowers, and blooms in February (t. 6880, *Bot. Mag.*) *Sarcocylus Hartmanni* is an Australian species, well worth cultivating for its dense spikes of white flowers, which are produced in spring, and last a long time in beauty. *Odontoglossum* has a charming representative in *O. Cernstedii*, whose white flowers are delightfully fragrant.

In a little higher temperature might be grown *Lælia pumila*, with its beautiful rosy-crimson flowers, and *L. monophylla*, a species found on the mountains of Jamaica; it has slender stems, 5 or 6 inches

high, bearing solitary, bright scarlet flowers, and differs from other *Lælias* in requiring a shady position in summer. *Mystacidium filicorne* is a Cape Orchid, a good idea of whose beauty is given in a figure in the *Gardeners' Chronicle* for July 30, 1887; its flowers are white and fragrant. *Angræcum falcatum* does well in an intermediate-house grown in sphagnum alone; its white, scented flowers and long slender spur are always admired. *Promenæa citrina* has rich yellow flowers, the lip being spotted with crimson; *P. stapelioides* has peculiar looking greenish-yellow flowers, thickly marked with blackish-purple.

In the warm house might be grown various species of *Bolbophyllum* whose hinged labellums are very interesting; the small but lovely *Angræcum* from Madagascar, *Dendrobium Jenkinsii*, and many others. Indeed, the list I have given might easily be trebled. *W. B.*

DRIED FRUITS.

THE winter season brings round an increased trade in dried fruits, which take the place to a large extent of fresh fruits. Raisins, Currants, Figs, and Dates, appear in quantities in the grocers' shops. The preparation and commerce in these give employment to thousands of people in various countries. The dried species of *Prunus* of themselves furnish an extensive trade on the Continent, on which we are dependent for our supplies.

The common Plum, or Prune, is grown in great abundance about Bordeaux. One firm alone exports this article to the value of about £13,000. The dried Plums are the "Pruneau or Prunes séchées" of the French. The best are the large black ones received from Bordeaux. Prunelloes, or Prunes du Brignolles, are received from the neighbourhood of Brignolles (Var), whence their name. They are somewhat larger than the common Prune. Of French Plums and Prunelloes we received 14,388 cwt. in 1885, valued at £51,474, nearly all from France; all of these but 2000 cwt. were taken for consumption here. The duty on all saccharine preserved fruits is 7s. per cwt. Of Prunes we received in the same year 27,504 cwt., valued at £32,122. All but 3000 cwt. came from France, and were for home consumption.

To give an idea of the commerce in fruit in the department of the Gironde, it may be stated that a single confectioner in Bordeaux has been known to purchase as many as 4000 lb. of Reine Claude (Green Gages) every day for a fortnight, besides large quantities of Peaches and Pears; and he has expended as much as £800 in the purchase of Apricots. There is also a species of wild Prune which grows about Labresne and Bouillac which is very prolific. It ripens in the month of July, and as many as 2000 baskets may be gathered in a day.

The preparation of Prunes is a largely developed industry in the central and southern departments of France. At Agen and Tours they collect the fruit as it ripens and falls to the ground. They are then exposed on trays to the sun, after which they are passed successively through an oven three times at different heats. In Provence after the Prunes are collected they are plunged into boiling water, drained, and then dried in the sun.

The Prunelloes are first peeled and then placed in thin bags, wrapped round with straw, and dried in the sun till the principal part of the moisture has evaporated. As Prunes contain much sugar this forms, on those of good quality, an efflorescence on the surface. The best Prunes come from Nancy, Tours, Brignolles, and Agen.

Dried or preserved Plums reached us in 1885 to the amount of 7648 cwt., of the value of £11,146, and they were nearly all consumed in this country. The bulk of these supplies came from Germany and Austria, France and Portugal supplying the remainder.

The Plum crop is the most important of the province of Bosnia, and is chiefly gathered in the north.

The annual produce is about 120,000 cwt., of which half is available for export. They realise on an average £1 per cwt.

There is a preserving factory in Slavonia which turns out annually 240,000 boxes of preserved fruits. Slavonia produces annually about 30 tons of dried fruit and 2000 tons of "compotes" of Prunes, which are found on almost every dinner-table in Germany. From the Plum they also distil a kind of 'brandy,' called "Slivovica," or "Slibowitz," and make large quantities of sweetmeats. Hungary carries on an extensive trade in dried fruits. *P. L. S.*

CULTURAL MEMORANDA.

EURYCLES AUSTRALASICA.

In habit this plant resembles *Eucharis amazonica*, except that the leaves are broader, shorter, rounder, and more deeply channelled. It produces large heads of beautiful white flowers borne on stout stalks. Propagation is by offsets, which should be potted into 3-inch pots, in a mixture of four parts sound loam to one of leaf-soil and sharp sand. Place the plants in a stove, or warm pit near to the glass, to prevent them making a weakly growth, affording water at the roots. After the latter have pushed into the soil, warm liquid manure should be afforded them, alternating it with clear tepid water. *H. W. Ward.* [There are two species in gardens, viz, *amboinensis*, with white flowers on a many-flowered umbel: season of flowering, March: *Australasica* is its synonym; and *Cunninghami*, the Brisbane Lily, also with white flowers, which are less crowded than those of *amboinensis*. *Ed.*]

DIELYTRA SPECTABILIS.

The gracefulness of this plant and its delicate rose-coloured flowers render it a very effective plant for the conservatory or for cutting; when, as in the latter case, it is mixed with its own beautiful leaves, it is very beautiful. Plants which were transplanted in the open during the last or the previous spring are those best adapted for the purpose of being forced. The stools should be taken up if they are still in the border and potted, using ordinary mould and pots no larger than are required to hold the roots without injury, leaving the crowns a little above the surface. Place the potted roots in a Peach-house or vinery or any house in which the temperature is about 50°. Settle the soil by giving the pots a good watering, afterwards covering each crown with an inverted flower-pot until they have made 9 or 10 inches of growth, and the flower-spikes have got well above the foliage. The inverted pots must then be removed by degrees, and tepid liquid manure occasionally given to assist development. When the plants have done flowering they should be hardened off before being again planted in the open ground in spring. *H. W. W.*

ANTIGONON LEPTOPUS.

At first sight the flower of this plant might readily be mistaken for those of a small species of *Bougainvillea*; but on closer inspection it can be easily seen that, instead of the coloured flower-bracts being the most showy part, as in *Bougainvillea*, it is the usual floral envelope—a perianth of five pieces—which is the showy part in this plant, the three outer petals being larger than the two inner. They are all a bright rose colour, the individual flowers being about half-an-inch across. They are produced on axillary and terminal one-sided racemes, which run out into slender, branched, hooked tendrils; and as is often the case in plants belonging to this order, the commencement of the inflorescence soon marks the point on the shoots where leaf-growth ceases, so that the end of the shoots for a foot or more is entirely made up of flowering branchlets which are disposed in a graceful manner. The plant is said to be indigenous to Mexico, but we are told that it is now widely distributed in tropical countries. The plant was introduced to England some twenty years ago, but it is not nearly

so often met with as might be expected. It is a plant easily grown, and is well adapted for training up a rafter or similar position in the stove. To grow it freely it should be planted out in the usual way in well drained rich soil, in a sunny position. A specimen is now flowering freely in the aquatic-house here, which is planted out in the ordinary way, behind the hot-water pipes, and trained on strings along the roof. During the time of growth the growing points should be trained a little to prevent confusion; but as the flowering period approaches the points should be allowed to hang down for the sake of a better effect. Care must be taken not to injure the points of the shoots when the plant is growing early in the year. After flowering it should be pruned. *F. Ross, Pendell Court.*

MONSTERA DELICIOSA.

The large dark green leaves of this plant are rendered very attractive by the way in which they are perforated, and many curious remarks are made by those who see them for the first time. In looking at these perforations one naturally wants to know of what advantage or use they are to the plant? Can it be for the purpose of allowing light to pass through on to the leaf or leaves below? The spathes are very conspicuous; in colour they are of a creamy whiteness, shaped like a boat with the spadix passing up the centre; a spathe we measured a short while ago was from 11 to 12 inches in length and 8 inches in diameter. The fruit, when ripe, gives off an agreeable odour, and its flavour would be very good were it not for the raphides, which are very abundant in the fruit (also the leaves), and these leave a painful stinging sensation in the mouth, especially when one eats without knowing the consequence. It flowers and fruits in a temperature which does not fall lower than 45° in winter. It requires to be grown on a wall, or can be made to cover the stumps or stems of old trees; and these, if covered with the small creeping kinds of Ficus, give it a much more ornamental effect. Wherever planted the places should be syringed occasionally until the plants become attached. *W. H.*

PLANTS IN FLOWER AT KEW.

ALPINIA MUTICA.—Apparently this species flowers more freely than the older *A. nutans*, which it resembles in foliage, size, and habit, but differs in having an erect instead of nodding raceme of flowers. The first-mentioned was introduced from Borneo, by Mr. Bull, in 1882. The Kew specimen is a large one, having many stems, 8 feet high, leafy to the base and evergreen. The racemes attain a length of 8 inches, and bear about a score of flowers, which open in pairs; the calyx is half an inch long, tubular, and toothed; the corolla is composed of three oblong petals, 1½ inch long, and a fourth one, large, and lip-like, folded like the labellum of a Phaius, and coloured yellow, with numerous spots and lines of crimson. The flowers, as well as the leaves, exhale a strong, aromatic odour. These strong growing *Alpinias* are first-rate plants for large, moist stoves, or aquaria.

Phaleria laurifolia is a robust Laurel-like stove shrub, which was introduced from Ceylon many years ago. The genus is related to *Daphne*, the flowers being very similar to those of *D. indica*, but pure white. They are produced in terminal heads on the principal branches, remaining fresh a long while. Like the flowers of *Daphne* too, they are also deliciously fragrant. The leaves are lanceolate, 5 inches long, and shining green. The Kew plant now flowering is in the Palm-house; it is about a yard high. Although not so good a plant as *Daphne indica*, yet this *Phaleria* is worth growing in good collections. It is figured in the *Botanical Magazine*, t. 5787.

Greyia Sutherlandi.—The Kew plant is flowering exceptionally early this season, and it has been exceptional also in not losing its leaves as usual in the autumn. It is a shrub 7 feet high, freely branched,

with shining green kidney-shaped leaves and terminal racemes of crimson flowers, like those of *Melanthus*. The genus is monotypic, and is a native of Natal, where it flowers in February, and makes a brilliant display, but it does not flower freely nor regularly in England.

Agave dasylirioides.—This is one of the handsomest and most distinct of *Agaves*, considered as greenhouse plants. It is more like a *Yucca* than such species as *A. americana*, the leaves being 3 feet long, 1 inch broad, rigid, with a long pungent tip, and very glaucous, almost silvery in colour. A healthy, full-sized plant bears about eighty leaves, and is 3 feet high. The spike is 8 feet long, arching, almost drooping, so that if not supported it would trail on the ground. The flowers are very numerous, tubular, 1 inch long and half as broad, greenish-yellow; they expand in whorls from the base onwards. This species is allied to *A. striata*, and is sometimes cultivated under the name of *A. dealbata*. It is figured in *Botanical Magazine*, t. 5716.

Aloe ciliaris.—Many species of *Aloe* are in flower or bud just now, but the most distinct and noteworthy is that here named, which deserves to be a popular garden plant. It has thin scandent stems, scarcely half an inch in diameter, branching freely, the upper foot or so clothed with lance-shaped leaves 5 inches long, 1 inch broad at the base, gradually narrowing upwards; the margins are clothed with small soft teeth, those at the base being white and almost hair-like. The flowers are developed near the top of the leafy shoots, each raceme being 10 inches long, the upper half bearing many tubular flowers 1 inch long, yellow and pink, pale green at the mouth. These flowers are quite as beautiful as the best of *Lachenalias*, for which they might easily be mistaken; they also remain fresh a long time when cut and placed in water.

Lachenalia pendula.—The first species to bloom this winter, and also one of the handsomest. A group of plants in the Cape-house is a pretty picture in brown-purple and yellow. This has much larger flowers than any of the others, and it is easily grown. The genus might be turned to good account by hybridists; certainly there are both variety and elegance as well as bright colours sufficient to work upon.

Freesias.—A large, well-flowered group of these delightful Cape bulbous plants in the conservatory here, prove their value, if proof be needed, as winter-flowering greenhouse plants. Nothing could be prettier, and certainly nothing is more pleasantly scented than the flowers, and they last a long while. It has already been stated in the *Gardeners' Chronicle* that the best treatment for *Freesias* is not to rest them, but keep them growing on all summer, shifting them into larger pots if necessary, but without disturbing the old ball of soil. Some of the Kew plants were treated in this way, and they are much finer than those which were rested. After what we were told by Professor McOwan in regard to the natural conditions of *Freesias*, it is extraordinary that the no-rest treatment has been more successful than the usual dry-rest treatment for Cape bulbs in general. The large, white-flowered form known as *F. refracta alba*, has proved by far the best garden plant. *W.*

PLANT PORTRAITS.

ACIDANTHERA BICOLOR, *Garden and Forest*, December 5; woodcut.

ALOCASIA CHANTIERI, *Illustration Horticole*, t. 64.

ANDROSACE LANUGINOSA, *Illustrierte Monatshefte*, December.

ANGRECEM SANDERIANUM, *Revue Horticole*, November 16.

APPLE SCHUTTER'S REINETTE, *Bulletin d'Arboriculture*, &c., November.

CHORISIA SPECIOSA, *Le Jardin*, December 5; woodcut.

CYCNOCHES CHLOROCEILON, *Illustration Horticole*, t. 65.

CYPRIPEDIUM MASTERSIANUM, *Lindenia* t. 159.

ECHINOCACTUS TEXENSIS, *Gartenflora*, December, t. 1286.

LELIA CINNABARINA, *Orchidophile*, November.

LEPTOTES BICOLOR, *Lindenia*, t. 157.

ODONTOGLOSSUM CONSTRICTUM, *Illustration Horticole*, t. 66.

ODONTOGLOSSUM HALLI, *Lindenia*, t. 158.

VANDA CŒRULEA, *Lindenia*, t. 160.

ZYGOPETALUM SANDERIANUM, *Gartenflora*, t. 1287.

STAPELIA GIGANTEA.

WHEN I described this grand species in the *Gardeners' Chronicle* for 1877, vol. vii., p. 684 and p. 693, f. 112, it had not then flowered in this country to my knowledge, nor does it appear to have done so since until the present season, when, to my gratification, it flowered last month in the garden of Sir George Macleay, at Pendell Court, and has been drawn for the *Botanical Magazine*. The flower was not as large as that represented in the figure, which is here repeated (fig. 101), but measured about 11 inches in diameter when the lobes are fully spread out. The colour of the flower is pale yellow, marked with pale reddish transverse lines, and thinly covered with erect pale purple hairs, which are scarcely visible, except when the flower is seen sideways. The bars represented on the underside of the petals in the engraving should have been omitted. The odour is disagreeable, as in the other species of the genus, although I have been told of one that is sweet scented—about which I should like to have substantial evidence, as all the species I have seen living, belonging to all the genera of the tribe *Stapelieæ*, have been either disagreeably scented or odourless. Although *S. gigantea* was originally discovered in Zululand by Mr. Plant, and introduced into Europe by Mr. Cooper from the Botanic Garden, at Durban, Natal, it has since been found in Namaqualand, which is quite on the other side of the continent—an interesting fact in the geographical distribution of these plants, which are usually local, and, so far as I can learn, do not exist in any great numbers in any one locality. *N. E. Brown, Herbarium, Kew.*

VIOLAS.

The correspondence in your columns is most seasonable. It is now that people are making up their minds as to what they will have for spring and early summer flowers next year. No doubt in the South, *Violas* must bloom in April, May, and the first week or two in June, to be of any use. After that, in an ordinary year, their season is practically over in all the southern counties. We would advise planting early in March, if plants are sufficiently rooted and the weather favourable. In Scotland, it is difficult to get plants sufficiently well rooted so early as that, and it is always difficult for Scotch nurserymen to execute orders for Pansies and *Violas* as early as growers in the South of England would like, unless they have batches of plants struck in August.

In selecting a piece of ground to grow *Violas*, it ought to be remembered that they cannot endure the full blaze of the noonday sun. Choose, therefore, a slightly shaded position, a border facing west or east rather than due south, is preferable. We do not mean to say *Violas* will not grow facing south; the fact is, many of the most useful varieties will grow almost anywhere; but we are advising planting where the best all-round results are likely to be obtained. In a border slightly shaded from the noonday sun in July, plants after flowering, will grow well and make clumps for the following year, from which it will be possible to gather flowers, literally in baskets.

Regarding manure, we would recommend that old well-decomposed cow manure be dug into the ground now, and that it be left in a rough state until planting time. We quite approve of autumn planting in the South, but it is too late now to attempt this, and it will be much better to defer until March.

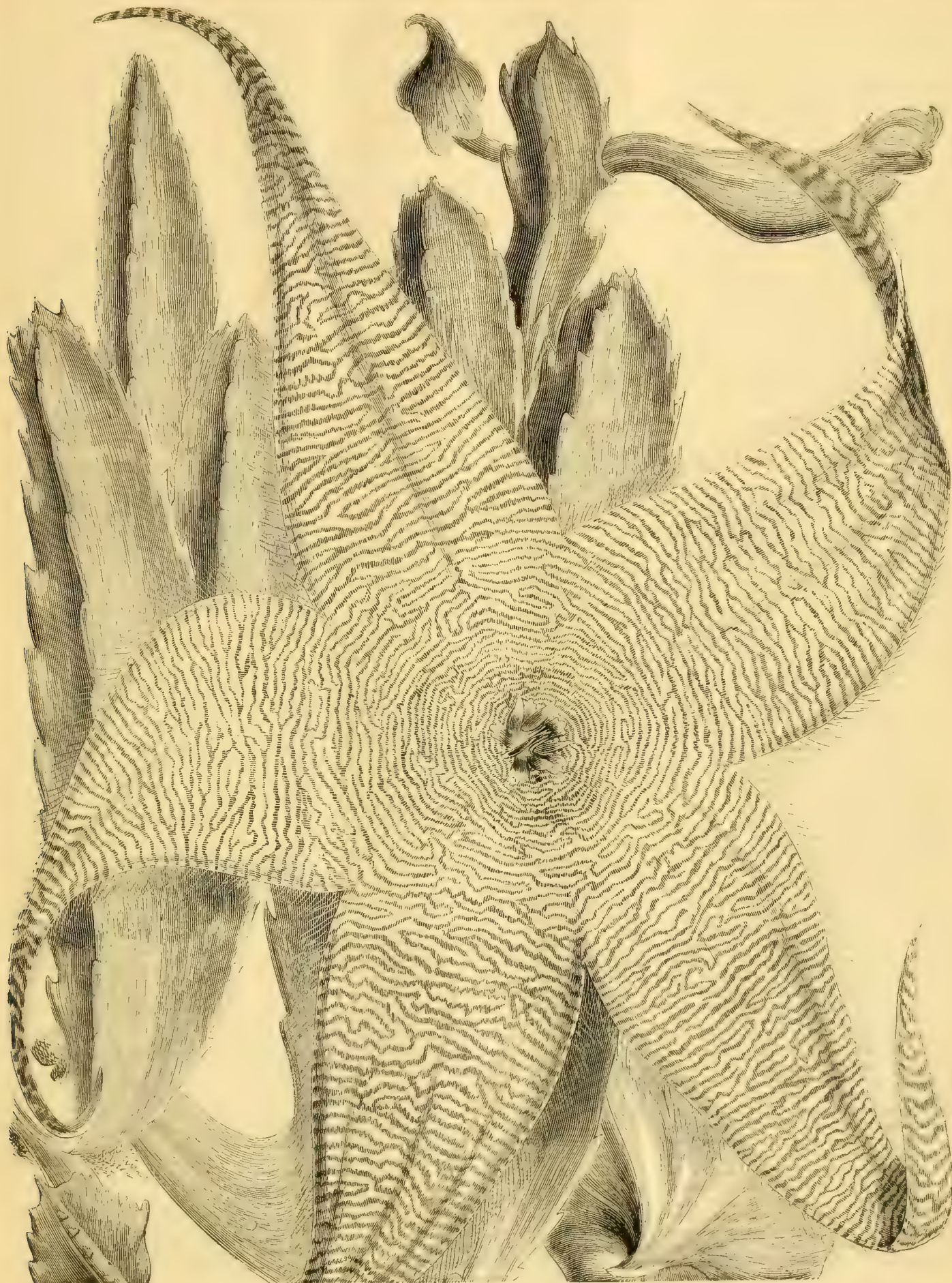


FIG. 101.—STAPELIA GIGANTEA: PALE YELLOW, WITH REDDISH LINES. (SEE P. 728.)

From the catalogue of any nurseryman who makes a specialty of *Violas*, the names of the best varieties can easily be gleaned. There are a few we might mention which ought to be in every collection however small. They are fine free growers, and are beautiful either as bedders or as cut flowers for glasses. These are—Countess of Kintore, bluish-purple and white; Countess of Hopetoun, pure white; Archibald Grant, dark rosy-purple; Bullion, bright golden-yellow; Skylark (or its improved form, Blue Cloud), white, with a band of blue on top petals; Columbine, white, margined with rosy-lilac.

Now there are half-a-dozen sorts which will do well in the hands of either amateur or professional. Of course we could enumerate many more—some, perhaps, prettier, if we went into the new class, which should, strictly speaking, be termed "fancy *Violas*;" but we could not name more useful varieties.

As to exhibiting them, they could either be shown grown in pots or pans, as suggested by Mr. E. Jenkins, or in sprays for cut blooms, or in glasses mixed with *Adiantum* fronds. We conceive that were this properly done, and brought under the notice of the public at the London shows, *Violas* would at once spring into the front rank as flowers suitable for glasses, and for table and other decorations. *Dobbie & Co., Rothessay.*

THE BULB GARDEN.

AUTUMN AND WINTER FLOWERING CROCUS.

DURING November and the early days of December the garden has been gay with *Primroses*, *Polyanthuses* and *Auriculas*, even the laced *Polyanthuses* are in bloom, George IV. being very fine, the flowers of large size and markings good. Many species of *Crocus* have perfect flowers, which in ordinary seasons are crippled by frost. The best amongst them has been *C. longiflorus*, not alone for its lovely lilac colour, veined with purple, but for the number of flowers it has produced. Its corms increase quite as freely as those of the common *C. vernus*, so that there is no wonder that it is common where it grows wild, in Southern Italy, Sicily, and Malta. It has many synonyms, and is described by Herbert under the name of *C. odoratus* var. *longiflorus*, and figured in *Bot. Reg.*, 1844, vol. xxx., t. 3, fig. 5, as *C. odoratus* var. *melitensis*. This is beautifully figured and described by Herbert.

C. Boryanus was opening its flowers slowly on December 10, when the wind changed and frost checked their further development. This species seldom flowers well out-of-doors, owing to its blooming at mid-winter. The flowers are very pretty, white, with a rich purple stripe externally. Mr. Maw figures the normal form, with pure white flowers, and remarks that "an occasional variety is sometimes found with delicate lilac featherings on the outer surface of the outer segments." The plant is dwarf, and not of robust habit. Mr. Maw retains the name of *C. Boryi* (Gay), for this species, and rejects Herbert's name of *C. Boryanus*. *C. lævigatus* has been in flower for a long period; it is a very pretty species, and one of the best for gardens.

We have also in flower the variety *striatus*; the flowers are of a blue-lilac colour, the outer surface of the segments striped purple. The leaves come with or before the flowers. Mr. Maw says it flowers from the end of September to Christmas, and often into the spring. *C. ancyrensis* is now in flower, and is a pretty little thing with prettily formed golden-yellow flowers, very distinct from any other variety, but feeble in growth, and so we grow it under glass. Mr. Maw gives the above as its specific name, while Herbert describes it as a variety of *C. reticulatus* and Baker as a variety of *C. susianus*. *C. asturicus*, though an October flowering species, retained its flowers until December. It reminds one of *C. nudiflorus*, but it is variable in its colouring.

We had also in flower a very pretty free-growing species on the first days of December, under the

name of *C. Tournefortii splendens*. The species *C. Tournefortii*, of Gay, has been described under many different names, and the work of Mr. Maw, in investigating this interesting genus of plants, and bringing those that are not of specific rank under their true names, must have been laborious, had it not been a labour of love. This species has been figured in *Bot. Mag.*, t. 5776, as *C. Orphanides*. It had been sent from Greece to Kew by Professor Orphanides, of Athens, under the name of *C. pholegandrus*, and the new name was given by Hooker. It is figured in *Bot. Reg.* for the year 1845, t. 37, from a drawing by Herbert; but his delineation is not so happy as usual.

C. Clusii is one of our most valued species, and its purplish flowers are very pretty. It flowers with us in December. Mr. Maw gives three figures of it, one marked October 3, another November, and a third December 10.

I think these autumn and winter-flowering *Crocuses* are the most lovely of the season in which they are produced; and one cannot wonder at the enthusiasm of such ardent cultivators as Mr. Maw and the late Rev. Harpur-Crewe, leading them to devote so much of their time to study the life-history of the plant. The *Crocus* was also a favourite flower of Dean Herbert, and his papers on the genus *Crocus* in the second volume of the *Journal of the Royal Horticultural Society* give evidence of laborious research. The plants can be cultivated in pots, and in that state can be moved anywhere when in flower. *J. Douglas.*

FORESTRY.

MARKETING HOME-GROWN TIMBER.—As we have just entered upon the season when the bulk of home-grown wood is placed upon the market, a word or two with regard to it and supplementary to my remarks a few weeks ago upon selecting and marking, may be acceptable. The subject is broadly divided into two heads, viz., auction sales and sales by private contract, as the semi-private plan of offering by tender really comes under the latter heading.

Auctions.—The obvious advantage of selling in this way is the publicity obtained and the competition generally induced. The set-off against this advantage is, of course, the one considerable expense which a public sale entails. The desirability of this plan of disposal certainly depends much upon surrounding circumstances, and no hard and fast rule can be laid down; but speaking from experience I should say that private bargains, when they can be made, are generally satisfactory. Beyond the mere question of expense, another great drawback to auction sales, especially when divided into small lots, is the number of different purchasers who, by buying a lot or two, obtain access to a place. Some I know look upon this as a gain, on the ground that the timber is more readily cleared. This, so far as it goes, may be true, but it is far more easy to control the operations of one or two respectable merchants than of a whole host of small traders. This is much more important than the saving of a few weeks in clearing, as large buyers are almost always ready to meet the wishes of sellers in moving what is most in the way and at the proper seasons. Where there are game preserves, for instance, it is very convenient to arrange matters in this way.

When, however, an auction is decided on, care should be taken that the conditions of sale are carefully framed, as by this precaution the evil of the variety of customers, may, to some extent, be minimised. These conditions will, of course, vary according to the necessities of the case, and whether the timber is standing or felled. I will take, for example two different estates, in which the sales are treated in different ways. In both cases the trees are standing, but in the first the vendor reserves to himself the felling, the purchaser having the option of sending a man to look after his interest if he desires it. In the other, the more general plan of allowing the purchaser to bear the expense is followed. The conditions stated are, that in the hedgerows the trees

may be sawn off, and the stools left, but the purchaser has to replace any earth removed, and make good the fences. All trees standing in the open fields or park lands to be rooted up.

In the case of the hedgerows, it would no doubt be better if the roots were out of the way, and the banks made good and replanted. The cost of this, however, is relatively very heavy, and if insisted upon would make a corresponding loss on the proceeds of the sale. On the whole it is wise, unless in special cases, to allow the purchasers the option of sawing off all trees which are not actually in the open.

Private Treaty Sales.—As I have pointed out above, this is the way of selling I most favour. There are, of course, many persons who think otherwise, and argue that when competition is done away with sellers do not get a full price. This objection really amounts to but little, as buyers are perfectly aware that it is easy to have an auction if the seller so elects. The real reason of the majority of auctions is the lack of knowledge on the part of the seller and his agent of what the particular lot they have to offer is worth. It is not surprising that they should be in doubt, as their practice is so small. A much cheaper plan, however, than an auction would be to secure the services of a capable valuer who would fix upon a price. The merchant could then either accept or refuse. It would not be often that business did not result.

Selling when Felled.—I have hitherto dwelt entirely upon selling standing, and this is becoming more and more common. In felling before selling, the owner is at the mercy of the market, as the timber must be disposed of in some way within a limited time. The exact contents of a felled tree can of course be more easily found than the contents of a standing one, but the difference is not at all in proportion to the extra trouble and cost. *D. J. Yeo, Lyneham, Wilts.*

PLANTS AND THEIR CULTURE.

JUSTICIA SPECIOSA.—The bright carmine-coloured flowers of this plant, although not thought much of when cut, are in the winter of much decorative value. Any plants which were grown in cool frames in summer, and will now be in an intermediate-house, will be showing the colour of their flowers in the order in which they were last stopped. When wanted at an early date a little more warmth will bring them on, and it will be found that the flowers and foliage will be improved by weak liquid manure afforded the plants at regular intervals. Fumigate slightly if greenfly appears, or syringe with weak tobacco solution. After they have flowered, unless kept for some little time and partially rested, it is better to throw them away, young plants being easily raised. When old plants can be accommodated they will, when reintroduced into heat at a later period, flower again freely. Of course, if desired the plant may be rapidly grown into a large specimen, but large specimens are not generally so serviceable as small ones. The late struck plants should be repotted as soon as they require it; for if deferred too long the bottom leaves drop off. Any light rich soil suits the plant, and while growing keep the plants near the glass.

Lachenalia and other bulbous plants should now be growing where they may get all the light and sunshine possible. These and other small growers do very well in the greenhouse on shelves near the roof. *Cyrtanthus* enjoys a few degrees more warmth than others, and as the plants are small, they would be likely to suffer if placed amongst stronger growers. Even such large bulbs as those of *Albuca*, *Ornithogalum*, *Hemeranthus*, *Crinum Moorei*, *Brunsvigia*, soon get into bad health when crowded or shaded by other plants. Be careful not to over-water any bulbous species not in vigorous growth.

Cinerarias.—Those showing flower should be carefully examined for aphides, and if any traces be found, slight fumigation must be done at once. The best practice is to fumigate for two or three nights in succession, and see that the foliage is dry. On the morning after the last fumigation, if the

plant be moderately syringed, it will still further clean them, and help them to overcome the ill-effects of the smoking. Succession plants should be kept steadily growing, and to prevent "drawing," afford the house or pit plenty of air whenever practicable, guarding against admitting frosty air. These plants will not suffer so long as the temperature does not drop below freezing, but 40° should be the minimum. A close warm atmosphere is always injurious, and speedily ruins the prospect of good bloom on *Cinerarias*. The latest seedlings will now be fit to pot off, and probably into their flowering pots. Use, as before recommended, a rich loamy soil, with a small quantity of bone-dust or fish guano. Stand the plants on a moist surface, but do not regularly syringe them.

Herbaceous Calceolarias require a similar course of treatment, but the potting soil used may be of a much heavier nature. One of the best places in which to winter the *Calceolarias* is a light span-roofed frame with a floor of coal ashes, and sufficient hot-water pipe to keep out the lowest degree of frost we may have. *F. Ross, Pendell Court, Bletchingley.*

THE FLOWER GARDEN.

TREES AND SHRUBS.—Push forward all planting operations when the soil is in a suitable condition. Mulch newly-planted stuff, and stake all such as need it. In gardens where the planting operations have already been brought to a close it will be advisable to make a thorough inspection of the established plants, noting those that are not flourishing, and adopting measures to meet each case. Large unhealthy specimens must have the surface soil taken away down to the roots, and without injury to any of the latter; and replace it with good sound loam and leaf-mould, mixed with some of the staple, adding thereto peat for such as need it. A mulching of manure is in all cases of sickly trees, &c., of great benefit. In the event of hard weather, get in readiness for next season, shreds, labels, and stakes. Give attention after frost to all autumn-planted perennials in beds and borders, and let the soil be pressed down firmly with the hands about the spring bedders.

Indoors.—Zonal *Palargoniums* and kindred subjects which do not require a high temperature, should be watered sparingly at this time of the year, and top ventilation afforded on all favourable occasions to prevent loss from damping. If wintered in light airy houses, and stood on shelves comparatively near to the glass, such plants will give little trouble. Keep the soil in the pots stirred and the plants clean.

Alternantheras, *Colens*, and *Iresenes* will require closely looking after for some little time to come, and ought to be in a temperature of not less than 60°. *Verbenas* and other small plants liable to get attacked by aphides should be fumigated with tobacco paper occasionally, to keep them clean. Examine tuberous *Begonias*, *Dahalias*, *Gladioli* and *Cannas*, and let none suffer from extremes of damp or dryness, and for some few weeks to come keep them in a dark and cool place where they will be secure from frost. *J. Horsfield, Heytesbury.*

FRUITS UNDER GLASS.

PLUMS AND CHERRIES.—These must be kept cool, and the house well ventilated if they are under cover. If attention to pinching was given during growth there will be little pruning now necessary beyond trimming rough cuts. Get the trees cleaned as a safeguard against insect enemies, and top-dress the balls with loam, bone-dust, and lime rubbish. Prior to resurfacing, remove all the soil as far as it is safe, and ram in the fresh material. Give every attention to watering, but guard against excess, and do not let the night temperature exceed 50°. The forcing of *Plums* and *Cherries*, if it can be so called, must be carried out with the utmost caution, else the crop may be suddenly and entirely lost.

Melons.—A large heap of leaves and stable litter should now be in a proper state of fermentation, and ready to form into the bed for the earliest *Melons*. If composed largely of leaves, so much the better, as the heat will be steady and lasting. Let the Melon-house be thoroughly cleaned, and every surface well coated with hot linewash, into which a handful of flowers of sulphur has been stirred. When the fer-

menting material is brought in let it be trodden quite firmly, so as to prevent much immediate subsidence, as well as to equalise and prolong its warmth. On the top, place a few turves grassy side downwards, and at intervals of 2 feet construct little mounds of loam, leaf-mould, and old Mushroom-bed manure; into each of these drop two or three seeds—*Perryrhyn* Seedling and Best of All will be found reliable varieties. Let the night temperature be kept at 65°–70°, being ruled in this matter by the prevailing weather. Allow a rise of 75°–80° by day.

Cucumbers.—Guard against overcropping, and keep an outlook for thrips and aphides. Allow the plants to grow freely, so as to induce root action; attend to top-dressing with loam, leaf-mould, and spent Mushroom-bed manure, at the same temperature as that of the house. Whenever the roots appear on the surface, keep the night temperature at 65° on cold nights, and 70° on mild ones, but when cold winds and frosts prevail, have recourse to covering the glass with Frigi Domo or mats. During dull days raise the temperature to 75° by fire-heat, and during steady sunshine at 85°, with air. Admit a little daily when the weather permits its being done safely. Where there is no Cucumber pit no time should be lost in getting a hot-bed made, if this be not already done. It will require to be about 6 feet high, and 4 feet wider than the box, to produce the requisite temperature. When the heat subsides to 90° the seeds may be placed in a little mound in the centre of each light. Some loose litter in as dry a state as possible shaken around the bed will prevent the escape of heat. The glass will require covering up with mats, and in very hard weather, with litter as well under the mats to secure a temperature of 70° to 75°; a trifle of ventilation must be afforded day and night.

Strawberries.—The Strawberry plants recommended to be placed on a bed of leaves last month, will have made a start to grow, and when the flower-spikes are discernible remove the plants to a shelf close to the glass and afford them a temperature of 50°–55°. Do not exceed the latter figure until the plants are out of bloom and the fruit set. Keep the roots in a moist state, but not wet. Introduce successions from the open ground every fortnight. In the absence of pit accommodation the shelves at the top of Peach-houses may be made use of for the plants. Examine each pot, to ascertain the state of the drainage, and to see if worms are in the soil, pick off decayed leaves and scrub the pots clean. Where the plants are started in houses, wire shelves are the best, as every facility is thereby afforded for syringing; this is important, as the slightest check soon causes red-spider to put in appearance. Aphides must also be destroyed by fumigation before the blossoms open. *W. M. Baillie, Luton Hoo.*

THE HARDY FRUIT GARDEN.

CHERRIES.—The pruning of all Cherry trees should now be done, the trees on walls being nailed or tied soon afterwards. The pruning of dessert *Cherries* should always be done as far as possible in the summer, as the too free use of the pruning-knife in winter is conducive to gumming. Summer-pruned trees will now only require to have the spurs shortened back to two buds. Young trees will require their branches to be thinned and regulated, and in *Bigarreaus* a space of 8 or 9 inches should be left between each main branch, but those in the varieties of *Duke Cherries* may be left closer together. In nailing trees leave ample room in the shreds for the swelling of the wood, and avoid driving the nails where they will come in contact with the bark, this being a fruitful source of gumming. The *Morello* and *Kentish* varieties require a different sort of pruning, as these bear on the young wood of the preceding year. Look the trees carefully over, removing such of the oldest branches as can conveniently be spared, and retaining as many of the young shoots as may be laid in without undue crowding. Bushes will require a general thinning, the removal of dead wood, and for dessert varieties the spurs should be shortened back as advised for wall trees. Where *Vines* are grown against walls out-of-doors they should now be pruned to two or three eyes, and nailed anew to the wall.

Insects.—The present is without doubt the best time in the whole year in which to exterminate the insects which are injurious to fruit trees, as more drastic measures may be used now the trees are at rest than when growing. In this district the winter moth is again very prevalent, and the males may be

seen flying about in great numbers in the gloaming. The caterpillars of this moth cause more destruction to our Apple trees than any other insect we have in this country; and trees that have been badly infested with them last spring and summer should receive special attention. As soon as the trees are pruned, the prunings, leaves, and any rubbish laying about under the trees, should be raked up and burnt; then bind a broad strip of brown paper or old cloth round the stems, and secure it there by means of twine, after which smear it with cart-grease, gas-tar, or something of a sticky nature, renewing it again and again as it gets hard. The female moth, which has abortive wings and cannot therefore fly, will thus be prevented from crawling up the trees, and they will be found sticking on the band. I find that cart-grease is the best thing for the purpose, as it remains effective for a considerable time before hardening.

For Apple and Pear trees that are affected with the mussel scale, or American blight, a good dressing of the stems and branches with petroleum emulsion, applied in a cold state, is very efficacious. For making petroleum emulsion the following are the ingredients:—To 1 pint of petroleum add $\frac{1}{2}$ lb. of soft-soap, and place in a bucket, over which pour $\frac{1}{2}$ gallon of boiling water, and by the forcible use of a syringe, mix the whole well together for about ten minutes. A painter's brush should be used for applying it, avoiding as much as possible the buds. For brown scale, paint the trees with the following home-made mixture:—Take equal quantities of sulphur, soft-soap, soot, clay, and add sufficient water so that when all is well mixed together it will be of the same consistency as paint.

As soon as the nailing of Cherry and Plum trees is completed the walls as well as the trees should be thoroughly washed by means of the garden-engine, with soap-suds or soft-soapy water. Choose, if possible, a mild day for doing it, so that the trees become dry again before nightfall.

Gooseberry and Currant bushes that have been attacked by the caterpillar should, after pruning, have all the soil under the bushes removed to the depth of 4 or 5 inches taken away and buried deeply in another part of the garden. Place fresh soil under the bushes, and give the surface a good dressing of newly-slaked lime or spent gas-lime. The bushes may be either dusted over or syringed with a mixture of soot and lime, as a means for preventing bud-picking by the birds. *A. Ward, Stoke Edith Park.*

THE KITCHEN GARDEN.

OUTDOOR MUSHROOM BEDS.—These beds, if made early in the autumn, will require examining occasionally to remove any Mushrooms that may be fit for use; but this work should only be carried out on mild days, uncovering only a small space at each time, and returning the litter as quickly as possible. The thickness of the covering of litter, mats, &c., should be varied, according as the outside temperature is high or low, and the length of time the beds have been made. Succession beds may still be made, if precautions can be taken against getting the materials wetted by rain or snow.

The Mushroom-house.—As the beds become exhausted they should be removed, and new ones made up, the new materials for which will assist in keeping up the temperature, as well as affording a genial atmosphere for those beds now cropping. Any beds which are not coming into bearing as soon as was expected may be hastened by having a covering of clean straw placed over them. It is frequently the case that in Mushroom-houses, through defects in construction, it is almost impossible to get any produce without this covering. Any beds that require water should always have a slight covering of hay put on previously, and the water warmed to a temperature of 85°. It is a good plan to put a little liquid-manure or a tablespoonful of carbonate of ammonia into each gallon of water, the hay be removed again after a few hours or left on according to circumstances. Beds that have ceased bearing may often be restored to partial fertility again in a few days by this means. A steady temperature of 55° should be maintained in the house; and that without the aid of fire-heat, if possible. This may not always be achieved, although much may be done to raise the warmth of the house by building up new beds as previously alluded to. In no case let the hot-water pipes get too hot—but merely warm, and dryness in the air must be counteracted by keeping the floor wet. *W. H. Davies, Ketton Hall, Stamford.*

Advertisers are specially requested to note, that, under no circumstances whatever, can any particular position in the paper be guaranteed for advertisements occupying less space than an entire column.

APPOINTMENTS FOR THE ENSUING WEEK.

SALES.

THURSDAY, DEC. 27. { Lilliums from Japan, Dutch Bulbs, &c., at Stevens' Rooms.
SATURDAY, DEC. 29. { Fruit Trees, Shrubs, Border Plants, and Bulbs, at Stevens' Rooms.

**** OUR ALMANAC.**—Secretaries of societies and others would greatly oblige by forwarding immediately to the Editor notices of fixtures for the ensuing year, for insertion in the Almanac to be published in the first number of the new year. Communications should reach us not later than the 29th inst.

THE figure of General GORDON stands out as one of the noblest and most self-sacrificing of our race. Round his name will gather, and have already gathered, traditions and myths, such as are now almost inseparably mixed up with the history of the world's greatest men; but, so far as we know at least, no one has assigned him a place among the botanists. That he was no mean observer, however, and that he was well able to appreciate the facts of Nature, is apparent from an article in the current number of the *Universal Review*, attributed on the cover to "JAMES BRITTEN and General GORDON," and having for its subject "The Forbidden Fruit and the Garden of Eden." The Forbidden Fruit, in the opinion of General GORDON, was none other than the double Cocoa-nut (*Lodoicea seychellarum*), whilst the Garden of Eden was contemporaneous with the Seychelles Islands.

In this almost grotesquely absurd conclusion, it might naturally be supposed that the learned Editor of the *Journal of Botany* supplied the facts, and the late General the—well, we will not say fiction, as that might be taken offensively—the fancy. This would not be wholly correct. The botanical details are of course correctly given by Mr. BRITTEN, who takes care not to identify himself with the General's fancies; but the rough outline sketches of the details of the flower and fruit made by General GORDON show that, however fanciful might be his interpretation of the facts, he had an eye to seize on, and a hand to represent, the leading features of this extraordinary tree.

Some of these drawings are reproduced in the article before us, while a series of them may be seen in No. 1 Museum at Kew, together with specimens of the wood and other portions of the tree collected by the General.

Myths of all sorts have gradually accreted round this extraordinary tree, but verily this—the latest—is the most fantastic of all. In olden times the curious shape of the fruits, their frequent discovery floating on the surface of the Indian Ocean, and the ignorance of their source, naturally gave rise to superstitious fables, and invested the nuts with a price that vies with those formerly given for a Tulip bulb, or shall we say for a rare Orchid now-a-days! Even RUMPHIUS, an acute naturalist, could only conceive that they were the product of a tree growing at the bottom of the sea.

However interesting the myths and legends collected by RUMPHIUS may be to students of folklore and ethnology, they have lost their interest since the discovery of the real nature and origin

of these singular nuts. To botanists they must always remain subjects of great interest, from their peculiar structure, and from the fact that they are natives of the Seychelles Islands, and nowhere else, and therefore afford basis for theories and speculations which are more or less in accordance with the scientific knowledge of the day, but some of which are doubtless destined to be proved as fantastic as we believe General GORDON's notions to have been. The Palm producing these nuts was figured by the late Sir WILLIAM HOOKER in the *Botanical Magazine*, t. 2734—8, and the botanical history is now pretty well known. A summary of it may be found in the *Treasury of Botany* and other text-books. Those who want to see what the tree is like should visit the Marianne North Gallery at Kew, and inspect the various articles made from the Palm in question in that establishment.

It may be of interest now to repeat the figure already given in our columns (fig. 102) representing the mode of germination of this Palm



FIG. 102. — GERMINATION OF THE DOUBLE COCOA-NUT, *LODOICEA SEYCHELLARUM*, AND BOWL-SHAPED BASE OF THE STEM (LEAF) THROUGH WHICH THE ROOTS PROTRUDE; BOTH MUCH REDUCED IN SIZE.

and the huge bowl at the base of the stem through which the roots protrude. On botanical grounds we feel disposed to say that the identification of the double Cocoa-nut with the Forbidden Fruit is, after all, supported by as good evidence as in the case of any of the other alleged sources of the sin and misery of the human race. Poor Eve must have been dreadfully disappointed with the flavour of the nut unless it was better in Paradise than it is said to be now. Probably as much, or really as little, may be said in behalf of the General's conclusions by the botanist as can be adduced by the geographer in favour of the view that the Seychelles Islands were the scene of the event which had such direful consequences:—

"Through 300 years one wild superstition after another has twined itself about this fruit, and now, towards the end of the nineteenth century on the very summit of progress and civilisation, there comes a plain God-fearing soldier, and sees in it the un-

conscious instrument of 'man's first disobedience. Some had sought for the seat of Eden by geography, and had failed; some had interpreted by allegory; some, alas! had disbelieved it altogether; but he would seek it by the plainest of all evidence, the evidence of the Maker himself, as embodied in His work. In the rumoured uses of the fruit, in its mystic shape, its duplication of form, its methods of life and propagation, in one and all of these GORDON saw, or thought he saw, an occult meaning only to be interpreted in one way. He even went so far as to draw out a chart to overcome the geographical difficulties of the question, and prove that the Pison and Gihon were to be identified with the waters surrounding the Seychelles Islands!"

A NEW PASSION-FLOWER (fig. 103).—Those who have had the advantage of visiting the richly stocked and interesting garden of Mr. T. B. HAYWOOD at Reigate, especially during the autumn months, must have been struck with the beauty and free-flowering property of a hybrid Passion-flower raised in that establishment. Trained fan-wise under the rafters of a greenhouse, the plant affords testimony alike of its own decorative merits and to the skill of Mr. RIDOUT, the gardener. We learn that the hybrid in question, which we propose to call the woodhatch hybrid, was raised between *Passiflora racemosa* (the *P. princeps* of gardens), and *P. quadrangularis*. The foliage, as will be seen from our illustration, partakes more of the character of *P. racemosa*, but the leaves being interspersed among the flowers, the plants have not the racemose character which is so remarkable in *P. racemosa*. The colour of the flowers is different from either of the parents. The sepals are remarkable for the very deep wing, like that of princeps, prolonged at the apex into a curved horn. In colour they are of a dull purple, while the petals are of a pale rosy-purple hue. The outermost threads of the corona are about half the length of the petals, white, with a purple base. The succeeding filaments are much shorter, also deep purple in colour, and slightly capitate at the tips. The ovary is oblong and glaucous.

THE ROYAL HORTICULTURAL SOCIETY.—The following communication has been received by us; "With a view to retrenchment of office expenditure, and with the hope of being able to devote more money to Chiswick, the Council of the Royal Horticultural Society have decided to leave the position of Assistant Secretary vacant for the present. Mr. CHARLES J. GRAHAM, who has so well filled that office during the past year, fully concurs in the propriety of this step, and having the Society's welfare at heart, is in entire accord with the Council's decision. The Hon. Secretary, the Rev. W. WILKS, has most kindly undertaken to be responsible for all official correspondence; and, considering the main objects he has in view—viz., the rehabilitation of Chiswick, and the resuscitation of the Society's *Journal*—we are sure that he will meet with every indulgence at the hands of Fellows and others if sometimes he finds it impossible to keep the correspondence quite up to date."

REV. G. HENSLOW.—We learn that the Council of the Royal Horticultural Society have nominated this gentleman as an Honorary Fellow, in acknowledgment of his long services as Secretary of the Scientific Committee. This is a compliment that has been more than earned, as any one who examines the "Frost Report"—the preparation of which fell to his share—will admit; and this is only one of the many services rendered by its author to scientific horticulture during many years.

"ALL KNOWN FERNS."—Dr. LORENZO YATES, Santa Barbara, California, proposes, if a sufficient number of subscribers be forthcoming, to publish a work under the above title, in which the name, synonym, habitat, affinity, bibliography, &c., of all the known species of Fern will be enumerated, including more than 600 which have been published

since Mr. BAKER's edition of the *Synopsis Filicum*. Dr. YATES will receive assistance from Mr. BAKER.

THE NATIONAL DAHLIA SHOW.—The usual annual meeting of the supporters of this exhibition took place, by kind permission, at the Horticultural

£114 10s. 6d., including £103 10s. paid as prize money; and the balance was made up by a *pro rata* deduction from the prize money of the trade exhibitors in accordance with the provisions of Rule 10. The accounts were duly passed. A conversation then took place on the advisability of forming a per-

amount of money as last year towards the compilation of a prize schedule, and also supply as heretofore cards, the necessary staging, take the entries, and print the schedule of prizes. This offer was accepted, with hearty thanks to the Crystal Palace authorities; and the first Friday and Satur-



FIG. 103.—PASSION-FLOWER: WOODHATCH HYBRID.

Club, Hotel Windsor, Victoria Street, Westminster, on the 14th inst., Mr. Harry Turner in the chair, present also Messrs. E. Mawley, T. W. Girdlestone, W. H. Williams, J. Burrell, George Harris, A. Rawlings, R. Dean, J. T. West, and H. Glasscock, Hon. Secretary and Treasurer. The balance-sheet showed subscriptions for the past year, amounting to £59 10s. 6d., and the usual gift of £50 from the Crystal Palace Company. The expenditure amounted to

manent society, with proper rules and regulations and a properly constituted executive. It was thought that if this step were taken, several of the exhibitors who do not now subscribe to the prize fund might be induced to do so. Eventually the matter was left in the hands of the committee. Mr. H. Glasscock reported that he had received from Mr. W. G. Head, on behalf of the Crystal Palace Company, a communication to the effect that the Directors would give the same

day in September were named as the most suitable days for the show in 1889, subject to the approval of the Manager of the Crystal Palace. It was resolved that for the future the judges should be selected from the exhibitors, the amateurs to judge the traders' flowers, and *vice versa*; the luncheon to the judges to be discontinued as a charge upon the balance-sheet. The schedule of prizes as offered last year was passed as that for the show in September

next. The Hon. Secretary stated that he had been in communication with the Trustees of the Turner Memorial Fund, with a view of obtaining a grant for the exhibition next year, but he had been informed that the money had been voted for the promotion of Tulip culture. Mr. Glasscock intimated that owing to age and increasing infirmities he should have to resign the post of Hon. Secretary and Treasurer, and proposed that Mr. T. W. Girdlestone should be elected in his stead. Mr. Girdlestone having consented, the proposal was seconded and the election carried unanimously. A cordial vote of thanks was passed to Mr. Glasscock for his past services. In revising the list of officers and committee, the name of Mr. H. Glasscock was placed among the vice-presidents. The following were added to the committee:—Messrs. W. H. Apthorpe and J. Burrell, Cambridge; J. Cheal, Crawley; J. Gilbert, Ipswich; W. Holmes, Hackney; Geo. Paul, Cheshunt; T. J. Saltmarsh, Chelmsford; J. H. Tranter, Henley-on-Thames; and J. Walker, Thame. The proceedings closed with thanks to the Horticultural Club for the use of the room for the meeting, and to the Chairman for presiding.

HORTICULTURAL CLUB.—The usual monthly dinner and meeting of the Club took place at the Hotel Windsor on Tuesday evening. The Hon. and Rev. J. T. BOSCAWEN presided, in the absence of Mr. JOHN LEE, who is, we are glad to say, making rapid progress towards recovery. There were present also Dr. HOGG, Messrs. LINDELL, H. J. PEARSON, C. E. PEARSON, WALKER, H. TURNER, &c. The subject for discussion was "The Chrysanthemum," opened by Mr. C. PEARSON with a most practical paper on its culture, illustrated by some very fine examples. An interesting discussion followed, in which Dr. HOGG and Mr. P. DENNY took part.

NEW CHRYSANTHEMUMS.—The number of reputed new varieties from all sources is so great as to become not only embarrassing in the matter of choice, but positively perplexing because of the hugeness of the lists of new varieties. The Chrysanthemum is now probably the most popular flower of the day, and when a subject reaches to such a height of popularity, a perfect avalanche of novelties is certain to descend upon the market. A list of new Chrysanthemums for 1889 has just come to hand, and for the information of cultivators it gives lists of new varieties for 1888-89. Thus Mr. Waterer sends from America twenty new varieties; Spaulding, twenty-three; J. Goode & Co., nine; making sixty-one varieties from America alone. There are six new varieties imported direct from Japan, some of them bearing names very difficult to spell, and still more difficult to pronounce; one from China; the Delaux (France) collection, always a numerous one, consists of thirty-seven varieties; Audiguer sends us five; Reydellet, thirty-three; Rozain twelve; E. Lacroix, eight; Hoste, eight; other raisers (foreign), four; while, finally Messrs. Cannell, Carter, Stevens and others, make up an additional fifty-seven. This gives a list of two hundred and forty-one varieties of different sections, but mainly Japanese. It will probably be found that other catalogue makers publish forms not included in the foregoing. This is one of the penalties that has to be paid for the popularity the flower created to a large extent, or at least fostered, by the striking success of the National Chrysanthemum Society. Really it is necessary to revise the catalogue of the Society every year. But who is equal to the cultivation of all these new varieties so as to understand whether they are distinct or not?—or, if distinct, of any value? Probably of every hundred not more than a dozen in each will be fitted to take their place among the crack flowers of the day.

"THE JOURNAL OF BOTANY."—The December number contains articles on "The movements of the chlorophyll grains according to the direction and intensity of the light," by Mr. SPENCER MOORE; Mr. GEORGE MURRAY continues his "Catalogue of West

Indian Alga"; Professor BABINGTON contributes a sensible article on "Botanical Nomenclature," and there are numerous other matters interesting to the botanist. The horticulturist will be glad to have recourse to the convenient biographical index of British and Irish botanists compiled by Mr. JAMES BRITTON and Professor BOULGER. In the present instalment we find notices of JOHN FORBES, collector in East Africa for the Horticultural Society; WILLIAM FORSYTH, ROBERT FORTUNE, JOHN FRASER, ROBERT FURBER, and others. To indicate the nature of these notices we transcribe one relative to a man famous amongst other things for his introduction of the Catawba Rhododendron:—

"FRASER, JOHN (de. 1750-1811: b. Tomnaclach, Inverness, 1750; d. Sloane Square, Chelsea, 26th April, 1811; bur. Old Burial-ground, Chelsea. Hosier and Collector. F.L.S., 1810. Published Walter's *Flora Caroliniana*. To Newfoundland, 1780; Southern States, 1785; and seven times across Atlantic between 1780 and 1810. Established nursery at Sloane Square, 1795. Collector to the Czar, 1798. Herbarium presented to Linn. Soc., 1849. *Comp. Bot. Mag.*, ii., 300; *Pritz.* 112; *Jacks.* 122, 145; *Lasègue*, 199; *Cott. Gard.*, viii., 250; *London, Arboretum*, 119; *Faulkner, Chelsea*, ii., 41. *Litho. portr.* in *Comp. Bot. Mag. Fraser*, Walt.

"FRASER, JOHN (fl. 1799-1852): F.L.S., 1810. A.L.S., 1848. Son of preceding. Accompanied his father in his travels, and subsequently to N. America. Introduced *Dahlia* [Subsequently to Lady Bute. Ed.] Had nursery at the Hermitage, Ramsgate, 1817-1835. *Comp. Bot. Mag.*, ii., 302; *Pritz.* 112."

ROYAL VISIT TO EALING.—The decorations in the streets of this pretty suburb on the opening of the Jubilee Victoria Memorial Hall and Public Library on Saturday last, by their Royal Highnesses the Prince and Princess of WALES, deserve mention, as they were very successfully accomplished by Messrs. C. LEE & SON, Hammersmith. The manager of the Ealing branch, Mr. GEORGE CANNON, superintended the arrangements of all the designs, and had the honour, with the members of the Local Board, of being presented to the Royal party.

INTERNATIONAL CENTENARY CHRYSANTHEMUM SHOW IN EDINBURGH.—A largely attended meeting of the Council of the Scottish Horticultural Association was held in 5, St. Andrew Square, Edinburgh, on the 13th inst., Mr. D. P. LAIRD in the chair, to consider the propriety of holding an International Centenary Chrysanthemum Show next year, under the auspices of the Association, in Edinburgh. It was unanimously decided to proceed with the project, and that the show should be held in the Waverley Market on a Thursday, Friday, and Saturday in November, 1889. It was further proposed that a guarantee fund should at once be opened in support of the undertaking, towards which a sum of about £60 was subscribed by the members of the Council present. The matter is being taken up with great enthusiasm by the members, and they confidently rely on the cordial support of the patrons of horticulture, gardeners, and the trade everywhere. Messrs. WM. THOMSON & SONS, Clovenfords, as already intimated, have signified their intention of giving 5 guineas towards the prize list. A small committee, consisting of Messrs. ROBERTSON MUNRO, Secretary; MCKENZIE, treasurer; D. P. LAIRD, and M. TODD, was appointed to conduct preliminary matters, and a meeting of the Council was arranged to be held on an early day to receive its report.

THE NATIONAL CHRYSANTHEMUM SOCIETY.—The annual dinner of this Society took place at Anderton's Hotel, Fleet Street, E.C., on the 13th inst., the President of the Society (Mr. E. SANDERSON) being in the chair, a large number of members and their friends being present. In proposing "Success to the National Chrysanthemum Society" the Chairman gave a *resumé* of its operations during the past year, mentioning the fact that

at the great November show at the Royal Aquarium there were 504 distinct exhibits, that the sum of £250 was paid in prizes, and that the membership of the Society had reached over 600. Sir LOUIS PELL, M.P., and the Rev. W. WILKS, Hon. Secretary of the Royal Horticultural Society, responded to the toast of "Our Patrons, Fellows, and Guests," the former stating that while the Emperors of Japan selected as their crest the Chrysanthemum, the Empresses took that of the Mulberry, because so useful in maintaining the silkworms, as so many of their choicest fabrics were woven from the silk thereby produced. In response to the toast of "The Hon. Secretary and Committees," Mr. W. HOLMES stated that this was the eleventh year of his holding office, and he had watched the development of the Society with satisfaction and honest pride. Eleven years ago the Society, then known as the Borough of Hackney, numbered fifty-five members, with an income of £75 per year; now it had 633 members, and its income for 1888 amounted to nearly £1000. This result had been brought about by means of unceasing and energetic work on the part of the executive committee. The year now drawing to a close had brought its quota of success. The exhibition held in the Royal Aquarium in November was the best ever seen there; the catalogue of Chrysanthemums, though deficient, was yet acknowledged to be a publication redounding to the credit of the Society. The provincial show at Sheffield, though wanting in some features, was a distinct success as an experiment; and the Conference at Sheffield was the first one held in connection with the Chrysanthemum. Mr. GEORGE GORDON also responded on behalf of the committee in a spirited address. The musical arrangements, carried out by Miss MARIE BELVAL, gave the greatest satisfaction.

BRITISH GRASSES.—We are informed that Messrs. LAING & MATHER, seedsmen, Kelso, N.B., have issued for the use of teachers and students of agriculture in the border counties, an illustrated manual of the principal grasses used in the district.

CHAMBRE SYNDICALE OF GHENT.—At the monthly meeting of this Society on Monday, December 10, the following plants received Certificates, viz.:—*Cypripedium cardinale*, shown by MM. Ed. Vervae & Co.; *Anthurium Andreanum atro-sanguineum*, shown by M. Ed. Pynaert, Van Geert; *Andromeda japonica foliis albo-marginata*, shown by MM. F. Desbois & Co.; and *Vriesea Marie*, shown by M. Truffaut, of Versailles. *Pandanus Desmetianus*, shown by M. L. Desmet-Duvivier; and *Euonymus pulchellus foliis albo-marginatis*, shown by MM. F. Desbois, & Co., were commended.

CANADIAN PLANTS.—Professor MACOUN has just issued, for the Geological and Natural History Survey of Canada, the fourth part of his *Catalogue of Canadian Plants*, comprising the Endogens. No descriptions are given, but a complete list of Canadian plants, with synonyms prepared by a competent botanist, is likely to be very valuable to growers of herbaceous plants. To local naturalists the careful mention of localities will be very serviceable, and will furnish the material for an account of the geographical distribution of the species. The work, which is creditable to the Dominion and to the author, is published at Montreal by DAWSON BROTHERS.

CHRYSANTHEMUMS AT GHENT.—The President (Comte DE KERCHOVE) of the "Société Royale d'Agriculture et de Botanique de Gand" informs us that in the year 1889 there will be held at Ghent a "Grande Exposition Internationale" to celebrate the centenary of the introduction of the Chinese Chrysanthemum into Europe. This exhibition will, it is proposed, remain open from November 23 to December 1; and all who are interested (either as amateurs or professionals) in these beautiful and popular plants are invited to enter their names as soon as possible as exhibitors, either of growing

specimens or cut flowers. Attention is directed to the fact that exhibitors need not necessarily be members of the Society or natives of Belgium.

VITALITY OF GARDENERS.—We learn from a Derbyshire paper that there have been great doings in Chesterfield to commemorate the Great Revolution of 1688. The chief item on the programme seems to have been a grand procession of local celebrities and societies, which paraded the town with much ceremony. The following extract may interest our readers:—"Carriage containing Mr. Adam Scott, Chesterfield (formerly gardener to the late Duke of Devonshire), aged 98 years; Mr. Allison Clark (farmer, Calow), aged 92 years; Mr. George Parker, Brimington (formerly gardener to Mr. George Stephenson), aged 88 years; Mr. William Barlow, Chesterfield (formerly gardener to Mr. George Stephenson, Tipton), aged 67—or a total number of years of 345." The average age of these Chesterfield gardeners is, therefore, over 86 years. These figures surely say something for the salubrity of Chesterfield and the neighbourhood, more for the wholesomeness of gardening as a pursuit, and most, perhaps, for the steady character of the men.

POMOLOGY IN BELGIUM.—We hear from M. EM. RODIGAS, the Secretary of the "Cercle d'Arboriculture de Belgique," that there will be held in the city of Ghent during September, 1889, a great fruit show and national pomological conference. There is no doubt but that a Congress summoned to discuss such popular topics will meet with widely spread approval and support.

THE SEASON.—As showing the extreme forwardness as well as lateness of the flowering of plants in the open ground, we publish a list furnished us by Lady NORTHBOURNE's gardener at Betteshanger, Sandwich; and another, shorter, of Chrysanthemums from so far distant a place as Daventry Hall, Cuckermouth. At Betteshanger the following were in flower:—Montbretia, Macartney Rose, Abutilons, various; Pelargoniums, various; St. John's Wort, Clematis, various; Helichrysums, various; Carnations, Anemones, East Lothian Stocks, Wallflowers, Agathæa coelestis, Daisy, yellow and white; Marigold, Honeysuckle, Pentstemon, Godetia, Verbena, summer Chrysanthemum, Ageratum, Mignonette, Roses, six certainly, more probably; Scabious, Antirrhinums, Pheasant-eye Narcissus, Veronica, Strawberry, Violets, Pansies, Polyanthus, Primroses, yellow and red; Evening Primrose, Senecio pulcher, Cobæa scandens, Petunias, various; Sweet Peas, Gaillardia, Tobacco, Calceolarias, Gazania splendens, Alonsoa, Berberis Darwinii, Salvia patens. Mr. J. TAIT writes:—"I send you from Cuckermouth a few Chrysanthemum blooms, just to show you what we can have in a mild season. The blooms of James Salter, Margot, La Charmeuse, Mons. Crousse are from a south wall; those of La Vierge and Novelty are from a west wall. Wild Primroses are in bloom in the woods, but while I write it is freezing keenly. We had a sharp frost (10°) in the beginning of October, but since the frosts have been slight. Our thermometer registered 9½° of frost on morning of 9th of present month."

BROMELIACEÆ.—M. ED. ANDRÉ, in the *Revue Horticole*, gives a descriptive list of Bromeliaceæ met with by him in his South American travels, among which are no fewer than eighty-three new species. A more detailed work on the same subject is in the Press.

SKIMMIA FOREMANNI.—We have before us shoots of this brilliant shrub, sent us by its raiser, Mr. FOREMAN, of Eskbank, Dalkeith, and bearing dense pyramidal panicles of bright coral-red berries, each the size of a small Pea. The leaves are about 3 inches long by 1 in width, oblong acute, shortly stalked, deep green, leathery, and studded with minute oil glands. The plant is stated to be a hybrid between *S. fragrans* and *S. oblata*, and has the inflorescence of the former and something of

the leaves of the latter. We regret that it should have received a Latin name, which will lead to confusion, as people will naturally consider it a species, and in conversation must naturally omit the X sign of hybridity.

The question whether this is a true hybrid or no cannot indeed be definitely solved till we know for certain what the plant called *S. fragrans* is. Some say it is a species, others that it is a sexual form of *S. japonica*. A facetious correspondent who holds this last view asks, with reference to Foremann's *Skimmia*, whether we have ever seen a hybrid between a bull and a cow? To which we are constrained to answer No; though if the bull were of one species and the cow of another, the offspring would be hybrid, and so it may be with reference to the *Skimmia* alluded to. We simply told the tale related to us. Be this as it may, the shrub is one of the most brilliantly-berried shrubs we know, and will be very valuable at this season. Like its congeners, it is probably hardy.

CONFERENCE ON FRUIT GROWING.—A meeting of members of Parliament was held on Wednesday, December 19, at the Westminster Palace Hotel, for the purpose of considering the extension of fruit-growing as a solution of the land problem, and a remedy for agricultural distress.—Mr. PICTON, M.P., presided over a limited audience, which included less than a score of members.—Mr. SAMPSON MORGAN having read a paper on the subject, SIR WILFRED LAWSON, M.P., said he was glad to welcome the extension of fruit-eating, but so far as his experience went on his own estates, fruit-growing had not proved a success. He doubted whether the soil and climate of Cumberland were suitable for fruit-growing. Mr. T. B. PORTER, M.P., said he had been abroad a great deal, and he could not see why a great deal of the fruit and flowers imported into this country from the South of France should not be grown at home. It was a question worthy of the attention of the Legislature and the general public. Mr. HANDEL COSSHAM, M.P., in moving a resolution advocating fruit-growing in the interests alike of rural districts and congested towns, by giving employment to labour, said he was afraid our climate did not give the proper sweetness to fruit. He had tried fruit-growing in the shape of Grapes, but they cost him ten times as much as he could buy them for. Land tenure, in his opinion, was the principal obstacle to success. Mr. RADCLIFFE COOKE, M.P., seconded the resolution, but differed from the proposer as to the obstacle. After detailing valuable experiences of fruit-growing in Herefordshire, he pointed out that the movement was well worthy of support, and that it would be most unfortunate to check it by connecting it with political "fads." Mr. CHANNING, M.P., Mr. SEALE HAYNE, M.P., and Mr. JASPER MORE, M.P., supported the resolution, which was carried." *Morning Post*.

NOTICES OF BOOKS.

THE ROSE GARDEN, &c. By William Paul, F.L.S. Ninth edition, 4to, coloured plates. (Kent & Co.)

To attempt any criticism of a work in its ninth edition may seem a work of supererogation, but there are some features about this edition which may justify us in doing something more than mention the publication of this new issue, and reiterating the praise already bestowed upon it. And, first of all, let us have our Englishman's privilege. Here it is. We really do not care one jot whether Sappho loved the Rose, whether she praised it or no, and to whom she compared it. We are quite ready to take it for granted that she did do what was attributed to her—but, what then? We do not learn anything from that fact, and our imaginations and emotions are not stirred by it. Poetical allusions to the Rose are very common. Many of them have no special quality entitling them to reproduction, at any rate in such a book as this, while some are

so exquisitely beautiful that we do not wonder at the temptation to quote them being too great to be resisted. Nevertheless, we doubt whether the general public, and even rosarians, would not prefer to get their poetry from other sources—best of all, from the Roses themselves—and trust to Mr. Paul's book for the science and the practice connected with the subject. Most of the quotations connected with the Rose are moreover so terribly hackneyed, that they create about as much poetic feeling in the reader as the bud of a *Maréchal Niel* or a *Niphetos* empaled on wire in a greengrocer's shop. By far the best, most varied, and least worn series of quotations are those amassed by the fine taste and graceful imaginings of the authoress of the series of articles in our columns, and which have been republished in the authoress' *Days and Hours in a Garden*, and especially in her *Ros Rosarum*, both published by Elliot Stock.

Adverting, however, to the other chapters of the book, we really have little to say further than this, that we feel disposed to praise the book in this its ninth edition nine times more than we did before; but having already exhausted our superlatives this is a difficult matter.

Mr. Paul's books have always struck us, not only by their excellence as practical handbooks, but for their suggestiveness, qualities which were remarkably observable also in the works of another great Rosarian, Thomas Rivers. It is this combination of thought with experience that renders Mr. Paul's *Rose Garden* so valuable a production, and so superior to the cut and dry performances of routine practitioners. Like *Oliver Twist*, however, we want more, and we could have wished that Mr. Paul could have told us why Roses do not do well in smoky towns? Probably there is some anatomical peculiarity which may explain the fact—certainly the Japanese *Rosa rugosa* does better than most Roses in such localities, and this is a Rose whose foliage, even to the naked eye, presents marked peculiarities. As for the influence of the sea air, that does but heighten the colour of the flowers. As we write, in a Kentish watering-place in mid December, Gloire de Dijon adorns many a porch in the town (Oh, what a benefactor was the man who invented that Rose!), and several hybrid perpetuals are still to be found in the gardens, while in the adjacent warren Scotch Roses, Dog Roses, and wild Sweet Brier form huge bushes. Even on the bleak, wind-swept chalk hills the Scotch Rose may be found—small, indeed, but characteristic in its spines if not in its flowers.

Into the details of culture it would be impertinent for us to enter, the name of the author is sufficient to prove that they are adequately dealt with, and we do not note nor expect any particular novelty in this direction, but the chapters on cross-breeding and hybridising we may specially commend as a standing example to be followed, and as a protest against the haphazard unbusiness-like—that is, unscientific—practices, usually followed.

The descriptive lists, of course, require constant revision, and this has been done in this edition, apparently with great judgment. Twenty coloured plates of leading varieties from the pencil of Fitch are given, as well as numerous woodcuts by W. G. Smith and others. The botanical appendix, originally written by our friend and colleague, the late Mr. Thomas Moore, has been revised by Mr. Baker, the most competent person to undertake that work. Mr. Arthur Paul contributes an article on the insects feeding on the Rose, and containing a valuable account of those insects. We demur, however, to the implication that, because the Rose belongs to the Linnean class, *Icosandria polygynia*, it therefore does not need (even relatively to other flowers) the agency of insects; and is it not time that the Linnean classes were laid on the shelf among other antiquarian and historical records? The order Rosaceæ, wide as it is, is a far more compact group than the Linnean groups just mentioned, which include many things that require a wide stretch of the imagination to see their affinity

with the Rose. The fungi and moulds affecting Roses are only incidentally mentioned, and the reader may be referred to the list given in our Rose Supplement some years since.

It remains to be said that the quarto edition before us is well and attractively got up; but for those who do not mind dispensing with the coloured plates, the 8vo. edition, otherwise identical, will be suitable. In one form or another it is quite indispensable to the library of a rosarian.

MARKET APPLES.

MUCH attention and consideration have of late been given to the Apple, and it is to be hoped that the readers of the articles on the subject, and the country in general will derive benefit therefrom. A remarkable fact connected with some recent discussions may be noticed in reference to the varieties most generally recommended for planting. These comprise varieties which are very limited in number, and mainly of recent introduction, somewhat large in size, and seldom include the names of well-known and tried fruits.

I will admit that large fruits are the best for marketing, and have thus decided advantages, though unless they are also hardy, and good croppers as mature trees, they are wanting in essentials. For my own part, I prefer to place reliance more on the older and well tested kinds than on newer ones, some of which produce a few good specimens, but which are not good growers and bearers.

I am bold enough to say that Blenheim Orange, although not a good bearer when young, is not to be set aside in favour of any other, its handsome form and great merits having obtained for it general favour—so much so that its name has become a household word; and, however plentiful the crop of Apples may be in any particular year, this variety will always command a ready sale at paying prices.

The Apple named Dumelow's Seedling, now so generally called Wellington, or Normanton Wonder, has become very popular owing to its excellence as a good keeper and cooking variety. The variety has obtained a degree of favour to which its excessive acidity does not entitle it. Certainly it has the merit of being clear-skinned, and it often has a pretty red tinge on the sunny side. During the present season this Apple has sold at 7s. or 8s. per sieve, and 6s. per sieve net has been returned me from the Borough Market. I have never known it so acid as it is this season, and I think its generally acid juice will eventually tell against it for general cultivation, for when cooked a very large quantity of sugar is needed to make it palatable. Against this variety I would place Waltham Abbey Seedling, a most vigorous-growing variety, a nearly constant bearer, somewhat resembling Dumelow's Seedling in appearance, but when ripe of a more yellow colour, and sometimes assuming the form of Golden Noble. It is excellent when cooked, the fruit turning to a rich amber, and requiring scarcely any sugar.

Again, old Dredge's Fame is a much neglected variety. It is a free and healthy grower, an early cropper, and it might be termed a constant and heavy cropper. The fruit is above the middle size, the skin green, mottled, and much striped with red; it is in season from October to March, and is adapted either for cooking or dessert. Winter Pearmain again seems quite lost sight of, whilst King of the Pippins receives very general praise, though of the two names I believe the former to be the correct one; whether this be so or not, the variety is such a heavy cropper as a standard, as to cause the fruit sometimes to be too small to fetch a fair market price. Hence it would be preferable to plant Cox's Orange Pippin instead.

Norfolk Beefin has been recommended, whilst Striped Beefin is nearly identical. It is a superior variety, beautifully striped or coloured with red; better adapted for the market, and an equally good cropper, but it seems to be quite forgotten. A young tree which I have here bore an excessive crop this season, and though the fruits, owing to the great

number, were very small, the net price I got from the Borough Market was 4s. per sieve for some thirty half sieves.

Much has been said in favour of Lord Suffield—it is a fine acquisition as an early variety, but owing to its loose habit of growth high winds cause much loss in exposed places. Though fruiting at a somewhat younger period than other varieties, it possesses many good points. The sturdy, ever sure Hawthorn-den is often overlooked by framers of lists, but it is a valuable fruit. My trees bear abundantly, and I can usually gather fruit during July and the first fortnight in August, the net returns for which have this year been 5s. per sieve.

The fact really is that growers of small trees can form no real estimate of the capacity of the same trees when fully grown. Most growers of small trees, of necessity, have to transplant them periodically, a proceeding predisposing them to early bearing.

As regards the peculiarities of the cropping of Apple trees this year, I observed that the healthier any tree happened to be, the less fruit did it carry. All the trees bloomed profusely, and in size the blooms were never finer; still an exceptional scarcity of pollen was noticeable. Out of a plantation of Dumelow's Seedling, the three weakest carried very heavy crops, although the trees were but a dozen years old, and one of them produced 5 bushels of very fine fruit. Beyond this I remarked that the largest and healthiest trees produced freely upon the weakest branches—especially upon such branches as when young had been injured by American blight, so that wounds or burrs exist near their base.

I find it difficult to reconcile the two facts of large healthy trees laden with very fine bloom, which expanded at a late and very favourable season, bearing a very thin crop of fruit, whilst trees about equal in size, adjoining, of the same variety, planted alike, bloomed together, and bore heavy crops of very fine fruit. The trees grow on grass land, and the wood of each tree is well ripened, and the fruit buds prominent on all alike each autumn—and as they now are—all are treated alike, receiving a thin mulching of very finely sifted ashes in November, with a slight dressing also of stable manure about midwinter, with triennial thinnings of the shoots. Nevertheless, the fact of the extreme fruitfulness of the branches injured by American blight proves that less than a full quota of support from the roots suffices; and towards this end our efforts should be directed. *William Earley, Ilford.*

CHRISTMAS ROSES.

I HOPE we may have the nomenclature of the various *Helleborus niger* a settled question before the nineteenth century comes to a close, otherwise we shall only have confusion, and that in another generation. I do not mean a settlement from the botanical point of view—but from that of the florist. There is not a doubt but that we have two varieties of *Helleborus maximus* or *altifolius*, the one not so early or so robust as the other, the weaker plant coming from Austrian Tyrol, bordering on Italy, and I believe recognisable to some as *Helleborus altifolius* of Heine. This plant is now made to fit that of Mr. Poë's Riverston variety, of which latter the *Gardeners' Chronicle* gave its readers a full-page illustration. I take a great interest in all the *Hellebore* group, and must say that this variety of *altifolius*, though very beautiful, is not Mr. Poë's plant, and, sending it out as a match, will only cause confusion. The Riverston *Hellebore* has got strong vigorous foliage, the leaves a glossy or shining shade of green. The leaf-stalk is apple-green; and the flower-stem mottled purple. The blooms are very large, pure white, with the style or stigma pinkish-purple. It flowers early, in fact it was in flower on November 5. The flowers appear in pairs, and are of the size of those of *H. maximus*.

Then we have another introduction, a rather late-flowering variety, with interesting dark foliage and flower-stems, and the blooms purple on the outside,

a greenish white when first opening, the entire bloom toning off purplish. This plant, named *caucasicus* (?) is, when grown under glass, an excellent variety; the flowers are then almost white, and it is a profuse bloomer, and one which I confidently recommend for its vigorous growth and continuous habit of flowering. It is made to fit *H. vernalis*, but any one looking at the plate of *vernalis*, as referred to by Mr. Brockbank, of Manchester, in your paper last year, will at once see that *vernalis* has apple-green foliage and leaf-stalk, and the flower-stems at the base slightly mottled with pink. The true *vernalis* flowers with me in January and February, and the climate is much more changeable than in London. *H. caucasicus* is vernal in its blooming, but it is not the plant figured as *vernalis*. This variety of *caucasicus* has come into my possession through different channels, and is no doubt a collected plant. The last consignment of the common form of *niger* reached me from the Channel Islands. If we were to stick by the old botanists, it should, indeed, be designated the Black *Hellebore*. It is dark as any "nigger" in flower-stem, root, and leaf-stalk. "Apple Blossom" is a good name for *H. rubra*. I am glad to see it adopted. Some of my own seedling Christmas Roses, sown July, 1887, will flower this season. *W. B. Hartland, Cork.*

CRATEGUS MEXICANA VAR. CARRIÈRI.

FOR the specimen from which our illustration (see fig. 104), was taken we are indebted to the courtesy of W. G. Gumbleton, Esq., Queenstown, Co. Cork. It is a very handsome free-flowering Thorn, which originated, according to M. Carrière (see *Revue Horticole*, 1883, p. 108 c, *ie color*) as a seedling from *C. mexicana*. The foliage turns in autumn of a rich bronzy-red, and remains on the tree for a long period. According to the plate in the *Revue Horticole* the haws are about three quarters of an inch long, oblong obtuse, and of a deep scarlet hue. It appears that some differences of opinion arose among the Paris botanists as to the name to be applied to this handsome species. We are unable to offer any opinion of our own upon the subject, and hence confine ourselves to the reproduction of the statement made by M. Carrière, and to the chronicling the good opinion which Mr. Gumbleton—no mean judge—expressed to us as to the value of this tree for ornamental purposes.

USEFUL INVENTIONS.

SUBSOIL BORER.

THERE are often occasions when an exact knowledge of the distribution—the thickness, slope, and area—of a varying subsoil is of value. It may be useful in deep draining, in well sinking, and in seeking suitable material for altering levels, for mixing with surface-soil or for making roads and paths.

In many parts of the country subsoils vary much in thickness and in character within the distance of a few yards, and in such cases the maps published by the Geological Survey, even the new maps which give the "drift" distribution, are of but small practical use. An exact detailed knowledge of the area is what is wanted, and this can be ascertained only by actual trials.

It has long been felt that our old methods for deep boring are cumbersome and costly, and only the prospect of considerable profit leads to their employment, while the methods for shallow boring are mostly unsatisfactory from their failing to bring up good samples of the materials bored into.

A revised, and, in the northern part, much modified, map of the Isle of Wight, based on the recent survey work of Mr. Clement Reid and Mr. A. Strahan, and prepared by H. M. Geological Survey, has drawn attention to a new form of borer that has been employed in this work, and also in part of the

Norfolk survey. It was devised by MM. E. Van den Broeck and A. Rutot, Conservators in the Royal Natural History Museum of Belgium, and is described by them with woodcuts and two plates in the *Bulletin de la Société Belge de Géologie, &c.* (*Memoirs, Séance du 29 Mai, 1888*), tome 11, pp. 135–196.

Its great advantages as experienced in Belgium and by the officers of our own Geological Survey, are that it can be used rapidly, it brings up good samples of the materials pierced, it requires but two men to

idea was that, entirely abandoning all methods for bringing up a "core," samples of a boring should be obtained in the "worms" of some form of screw-borer. Different objections were found to different forms specially made and tried. The form adopted and now used is that known as a "worm auger," having two spirals commencing and ending on opposite sides. It is rather more than 2 inches in diameter and in its length there are five complete revolutions of the spirals, the tip of the borer ending in reflexed

this may be of importance in geological work in tracing the gradual thinning out of any particular bed, this is not likely to be needed for ordinary borings.

Those who may wish to have a borer made can, no doubt, receive permission to see one of the Survey instruments by writing to the offices, which are at the Geological Museum, in Jernyn Street, London.

HAMPTON COURT GARDENS.

(Continued from p. 692.)

THE next mention of Hampton Court Gardens occurs in the *Privy Purse Expenses of Henry VIII.* for 1530–1533.* From these expenses we gather that Pears (p. 249), Damsons (p. 65), Medlars (p. 176), Cherries (p. 225), Apples, and Strawberries were cultivated in the orchard, and bore fruit abundantly. Cucumbers and Melons (p. 264) were also grown, and we learn that John Chapman supplied the queen with Roses (p. 148) from the flower garden, and the "king's table" with "herbes" (p. 39) from the kitchen garden.

In 1533 the gardens underwent considerable alteration, and were to a great extent relaid by a gardener named Edward Gryffyth. From the accounts we learn that a commencement was made by digging up the greater portion of the old gardens and levelling the ground. The ground was then manured and carefully measured out into several plots, and these plots were then surrounded by brick walls.† The largest of these plots was made into the 'King's New Garden.'

This garden, from what we can gather from the accounts, appears to have been laid out into a number of square or oblong plots of grass separated by gravel walks. At certain intervals along these walks little mounds were raised, and on these mounds were placed "brasyn sundials." Some fifty-six of these sundials were entered as having been bought for this garden.‡ The flower-beds were cut in the grass in oblong forms, and were surrounded by rails in a very curious manner. From the accounts we learn that 200 posts "for bearing up the rayls," and "1900 yards in length of rayl" were bought for this purpose. The posts were driven into the ground at the four corners of the beds, and the rails were fixed on these, whilst the whole of the woodwork was painted with "white and green wrought with fine antic." Each post, also, was surmounted by the "Kinge's or "Queene's beastes" carved in wood. These beasts were the heraldic lions and greyhounds (the lion of Henry VIII and the greyhound of Anne Boleyn), and each had fixed on the top of its head a small "iron wayne." The arrangement of the posts and "rayls," the manner of painting them, and the forms of the "Kinge's and Queene's beastes" may be well seen in the background of one of Henry VIII.'s great family pictures at Hampton Court. Over the rails in this garden were, in all probability, trained Roses,§ and trees of Yew, Cypress, and Juniper were planted in the centre of each bed. Around the walls of the garden were planted Apple, Pear, and Damson trees, and under these trees were probably planted the "Violets and Prymroses, Sweet Williams, Gillifer slips, Mynt, and other sweete floweres," mentioned in the accounts as having been purchased for the King's New Garden. This garden occupied the plots of ground now known as the Privy Garden.

The "Mount," a common feature in the gardens of this period,|| was next taken in hand by the gardener, Gryffyth. It was situated in the southern end of the King's New Garden. At the top of it was built

* See *Privy Purse Expenses of Henry VIII.*, edited by N. H. Nicolas. London, 1827. 8vo.

† Chapter House Accounts, C. 2, f. 42.

‡ Chapter House Accounts, C. 1, f. 148, 160. They cost 4s. 4d. each.

§ Some 500 are entered on the accounts as having been bought for this purpose.

|| Leland mentions one in the orchard at Wresshill Castle, "written about in degrees like turnings of cockshells to come to the top without payn."—*Itinerary*, vol. i., f. 80.



FIG. 104.—CRATEGUS MEXICANA VAR. CARRIERII: FLOWERS WHITE FLUSHED WITH ROSE. (SEE P. 733.)

carry and work the apparatus even when a depth of 14 or 16 yards has to be bored and that it requires no fixed framework. It is essentially a hand-borer. MM. Broeck and Rutot style it "*Un nouvel appareil portatif de sondage pour reconnaissance rapide du terrain.*" Although designed for geological work there is much in its easy use to recommend it for readily answering many questions connected with land culture.

The device does not appear to be registered or in any way "protected," though its present form has been arrived at only by a long series of trials with experimental and now discarded forms. The leading

"knife edges." The borer terminates a rod, the other end of which is arranged to receive a movable cross-handle. When the borer has been made to penetrate to nearly the depths of the rod of which it forms a part, the handle is removed, and another rod is affixed, and the handle put to the top of this, and when this has been worked to its depth another is added, and so on. Experience has shown that the small amount of skill that has to be acquired to work the borer lies almost exclusively in attaining the knack of removing the spiral specimens of material brought up in cases where it is wished to keep an exact record of the sequence in inches. Though

a little pavilion of trellis-work, over-roofed with planks, and around this trellis-work were trained plants of Honeysuckle and Thorn. At the top of the pavilion was fixed "a great wayne with a crown." It was reached from the King's New Garden by a winding path set on either side with Quicksets. Six loads of these, containing in all about 24,400 plants, two loads of Ash poles "for the Quicksets in the Mount in the King's New Garden," and "two bundles of rods to bind the same," were bought for this purpose. At fixed distances about this winding path were placed more "Kinge's and Queene's beasts." These appear to have been different from the ones in the King's New Garden, for they were made of freestone and not of wood. They comprised in all "two lions, two dragons, two greyhounds, a lybert, a gryffyth, and sixteen badgers." From the accounts we also learn that a "border of Rosemary three years old," and three Pear trees, were bought for "setting about the Mount in the King's New Garden." There is also an entry for "Quicksetts for the triangle at the Mount."

Another of the plots laid out by Henry VIII., was that known as the Pond Garden. There is no mention in the accounts of any plants having been bought for this garden, but we learn that around the ponds were placed the inevitable "Kinge's and Queene's beastes." The entry which refers to these "beastes" runs thus:—

"Paid to Harry Corrant of Kingstone, carver, for making and entailing thirty-eight of the King's and queene's beastes in freestone, bearing shields with the King's arms and the Queene's, that is to say, four dragons, six tigers, five greyhounds, five harts, four badgers, serving to stand about the ponds in the pond yard at twenty-six shillings the pece, xlix li. viii.s."

These beasts were not placed upon wooden posts like those in the King's New Garden, but stood upon freestone bases and were painted in oils. Among the same accounts are also charges for "labourers lading of water out of ye Temmes, to fyll the ponde in the nyght tymes." Although the king's and queen's beasts have been removed, a portion of this garden has undergone very little change since Tudor times. It includes several little gardens separated from each other by low walls. At the southern end, in the centre of the wall, is a little arbour made of trellis-work, whilst around the walls are banks and shady nooks, such as were in vogue in Tudor times. In the centre is a sunken parterre, with a beautiful little fountain, "perhaps," says Mr. Law, "a 'survival' of one of the original ponds." Indeed, this garden retains more of the old-fashioned spirit than almost any other in England.

The fourth plot of ground was converted into the "little garden," but the accounts do not give us any idea as to the manner in which it was laid out. All that they tell us about this garden is, that "lxvii. Apple trees" were bought to be planted in it, "of a gardener of S. Jones Street, London, at vii. the pece."*

About the same year (1533) in which all these alterations were made, the "Great Orchard" was planted. In 1534 large additions were made to this orchard, and a number of trees were planted. From the Chapter House Accounts we learn that "200 yong trees of Oak and Elm, five score to every hundred;" "600 Cherry trees, at 6d. the hundred;" "five Service trees, at 14d. the pece;" "four Holly trees, at 3d. the pece;" and a number (not specified) of Apple and Pear trees, "at 6d. the pece," were bought and planted in this orchard. Thirty-four bushels of "Strawberry, Prymrose, and Violet roots, at 3d. the bushell," were also bought, and were planted beneath the trees.

After the death of Henry VIII. we hear nothing further of the gardens until the year 1561, and even then only a side light is thrown on them. When Sir William Cecil was laying out the garden at Burleigh House, he wrote to Armigall Wood, asking for his advice as to what plants he should plant in the garden, and where he should obtain them. In the reply,† dated March 7, 1561, Wood tells Cecil

that the gardener at Greenwich will provide him "with all that he can of Lavender, Spike, Hyssop, Thyme, Rosemary, and Sage," but that if more is necessary, to send to Hampton Court or Richmond. We thus see that the Hampton Court gardens were, in the middle of the sixteenth century, one of the principal nurseries, as it were, for collecting plants, and that it was from these gardens that plants were distributed to other parts of the kingdom. Five years after the above letter was written, some alterations were carried out in the gardens under the direction of Sir William Cecil; but what those alterations were, or how far they extended, we do not know.*

In 1583 extensive alterations were made in the gardens. The King's New Garden appears to have been entirely relaid, and its name was altered into the "Privy Garden," the name which it still retains. In the spring of this year (1583) Elizabeth sent over to France, for a French gardener named John Markye, "to repair the old gardens, and to relay plots there." The accounts and expenses incurred by this gardener are still preserved among the declared accounts† in the Audit Office, and in them are some interesting entries. They are headed after the usual endorsement "for flowers, herbs, plants, trees, earths, and sundry other monies paid for the entertainment, &c., of the French gardener, Rowland, his servant, and for sundry other gardeners and for sundry other things." Implements for carrying out the works were the first things bought. Watering-pots, brooms, shears, baskets, pails "to water the garden," and "ladders for the Frenchman and his man to work upon the hedges," are all entered on the first folio of these accounts. Several experienced gardeners and a great number of labourers were then engaged for "digging," "manuring" (twenty-two loads of horsedung were used in the spring of 1583), and for "bringing 120 loads of new earth into the gardens for making new beds." These "new beds" were planted with "slippes of Box" in geometrical figures, or in "figures like lace patterns"—a style of gardening which appears to have been about this time introduced from France. A large quantity of plants were also bought for the Privy Garden, and on the accounts are entered "double Prymroses and Daysies bought by agreement," "Lavender slippes and Daysies, and sundry slippes for borders, viiis. vii.," and "two bushels of Strawberry roots." Besides these plants seeds were also bought, as appears from the following entries in the accounts:—

"Garden seeds of divers sorts bought at divers times, iis."

"Sundry sorts of herbes seedes provided for the furnishing of the garden, as appeareth by a book superscribed by the hand of the said Rowland, particularly mentioning their several natures with the town's names were they were bought, cs. jd."

Several other alterations were made in the other gardens in 1584 by the same French gardener. A "Box hedge xliii. yards in length," and eight Box trees were planted in the Mount, besides some "xv. lodes of Holly trees with their rootes taken out of the earth, at xiiid. the lode." In the orchard a quantity of trees was also planted; "clxxvii trees bought by agreement;" "one Bay tree and one Muster (?) tree at xv. the pece," "xxxiv Bay trees at xiiid. the pece," and a quantity of Beech and Juniper trees are entered in the accounts as having been bought for this purpose. The salary of the French gardener, or rather the money paid for his "entertainment," was iii.s. the day. Robert Comte, "the French gardener's man," received "is. vii.," and "John, the French gardener's servant, xiiid. the day. One other entry in these accounts is worth noting. It runs thus:—"For the French gardener, his servant, and Roger Overton rydnye to Kew, Rychemond, and Mortlake, and divers other places to view the gardens there for herbes and flowers." In all, the expenses during 1583 and 1584 for "maintaining, repairing, and altering the gardens," were 843li. 7s. 5d.

(To be continued.)

A POPULAR PEAR.

I HAD recently an opportunity of turning over the solid quarto volumes forming the first series of the *Transactions of the Horticultural Society of London* (1816). In vol. ii., p. 250, is a descriptive account, accompanied by a hand-coloured engraving, of the Williams' Bon Chrétien Pear, which, under its American name of the Bartlett, is a well-known and popular fruit in nearly all good fruit gardens of the United States. The specimens figured by Mr. William Hooker, F.H.S., a well-known horticultural artist of the time, were laid before the Horticultural Society in August, 1815, by Mr. Richard Williams, a nurseryman of Turnham Green, at that time a quiet little village quite near to the Horticultural Society's Chiswick garden, and only 3 or 4 miles from London.

Mr. Hooker, in his account of what he then calls "a new Pear," says:—

"This Pear, which has been called by Mr. Aiton (in his *Epitome of the Hortus Kewensis*, 1814), Williams' Bon Chrétien, appears to have sprung from seed in the garden of Mr. Wheeler, a schoolmaster at Aldermaston, in Berkshire, about twenty years ago [*i.e.*, about the year 1794, and was suffered to remain in order to prove the value of its fruit. Subsequently grafts have been dispersed, and many trees are now in Mr. Williams' nursery and other gardens round London. I have added the following description:—The trees of this variety are of vigorous growth and fertile habit; their branches remarkably erect and straight, until bent by the weight of fruit. Leaves broad, deep green, very sharply serrated. Fruit of an irregular pyramidal and somewhat truncated form; large, being from 3 to 4½ inches in length and 2 to 3 inches in width in the widest part near the head. The eye is inserted on the summit, and never sunk in a hollow cavity, as in the other varieties called Bon Chrétiens. The stalk is very gross and fleshy, about three-quarters of an inch in length. The colour of the fruit is pale green, spotted over with a mixture of darker green and russet-brown, becoming yellowish, and faintly tinged with red on the side next the sun when fully ripe. The flesh is whitish, very tender and delicate, abounding with juice, which is sweet and agreeably perfumed. Ripens in August when trained to a west wall, but on standard trees it is from three weeks to a month later. This Pear I would recommend to the notice of the Horticultural Society as superior to any of its season with which I am acquainted. It immediately succeeds the Jargonelle, and is earlier than, and much superior to the Doyenné, or white Beurré, and resembles in flavour the Summer Musked Bon Chrétien. Its merits over the latter variety are that on standard trees as well as when trained, it seldom fails to produce fruit in abundance. The drawing which accompanies this was taken from specimens which ripened on a west wall, and may be considered of an average size; but I have seen fruit of this variety weighing from ten to twelve ounces."

So much for its English history; and on turning to Downing's *Fruits and Fruit Trees of America*, p. 421, we find its history in America pretty clearly given.

"This noble Pear," says Downing, "is justly one of the most popular of all the summer varieties. Its size, beauty, and excellence, entitle it to this estimation, apart from the fact that it bears very early, regularly, and abundantly. It is an English variety, originated about 1770 in Berkshire, and was afterwards propagated by a London grower of the name of Williams. When first introduced to this country (1799) its name was lost, and having been cultivated and disseminated by Enoch Bartlett, Esq., of Dorchester, near Boston, it became so universally known as 'Bartlett Pear' that it is impossible to dispossess it now. The first imported tree in Mr. Bartlett's grounds was sent from England in 1799. It suits our climate most admirably, ripening better here than in England, and has the unusual property of maturing perfectly in the house, even if it is picked before it is fully grown. It has no competitor as a market fruit."

The italics in Mr. Downing's account of this, the summer Pear of England and America, as well as of France and the Channel Islands, are my own, since

* Chapter House Accounts, C. 9, f. 41.

† *State Papers (Domestic)*, vol. xvi., No. 28.

* See *State Papers (Domestic)*, vol. xxxix., No. 64.

† *Works of Buildings*, Bde. 2481, No. 64.

this property of ripening, after it is picked and transported hundreds or thousands of miles, is the point in a good market fruit when combined with the other sterling excellencies of this standard Pear. No other Pear is so largely grown and sold in our markets, and it is with some considerable pride that we claim it as a representative fruit of English origin. *F. W. Burbridge.*

SCOTLAND.

EDINBURGH BOTANICAL SOCIETY.

DECEMBER 13.—The Society held its second winter meeting in 5, St. Andrew Square, Dr. Craig, President, in the chair.

Amongst other interesting papers were "Observations on the Wood of Certain Resin-producing Trees," by Mr. Galletly, Curator of the Museum of Science and Art. Professor Balfour communicated a paper by Dr. J. E. T. Aitchison on the "Source of the Budsha, or Royal Salep of Southern Afghanistan," which was shown to consist mainly of *Alliums*, chiefly of *Allium Macleanii*. Professor Balfour referred to the Salep mentioned in *Elia's Essays*, and desiderated information on the subject. Dr. Cleghorn exhibited a choice collection of native drawings of Indian plants which had been presented to the Library by the late William Gorrie, Esq., and at the same time laid on the table a classificatory catalogue of the series. Mr. George Bird gave his botanical experiences of the Dovrefeld, Norway, in July, 1888; while Mr. Sewell gave similar observations made during the voyage of the *Labrador* to the Kara Sea, this summer. The bright glowing carpet of the Tundras was not visible in September last in Spitzbergen; though travellers may be right enough regarding this in latitudes some 500 miles south of this northerly point.

Mr. Lindsay, curator, gave in his report for November on temperature and vegetation at the Royal Botanic Gardens.

"The past month of November has been remarkable for the extreme mildness of weather which prevailed; very seldom has there been so little frost to record during November. As a set-off, storms of wind and rain have been unusually frequent, which proved much more harmful than any seasonable amount of frost could have done. The severe gale on the 16th fortunately passed over without doing any very serious damage to the garden, further than the loss of one or two common trees. Broken branches were scattered about in all directions, until it became rather alarming.

"The thermometer was at or below the freezing-point on nine mornings, indicating collectively 20° of frost as against 49° for the corresponding month last year. The lowest readings occurred on the 1st, 30°; 16th, 29°; 21st, 29°; 27th, 25°; 29th, 30°. The lowest day temperature was 36° on the 20th, and the highest, 57° on the 25th. Rain fell on seventeen days.

"Owing to the abnormal mildness, early spring-flowering bulbous plants, such as *Scillas*, *Narcissus*, *Iris*, and the like are already far advanced in growth; buds are also starting into growth on *Ribes*, *Syringa*, *Pyrus* and other shrubs. At the close of the month fairly good summer Roses were in flower in conjunction with Christmas Roses and Primroses. The Holly is the most conspicuous plant in fruit out-of-doors, the berries being abundant and well coloured.

On the rock garden a good many plants are still in flower, but eight species only began to flower during November, viz., *Gynerium argenteum*, *Schizostylis coccinea*, *Parochetus communis*, *Tricyrtis hirta*, *Gypsophila Rokojecka*, *Kniphofia Saundersi*, and *Aster* species."

Mr. Bullen gave in a Report on Temperature and Vegetation for the same month, in the Botanic Garden, Glasgow.

The fine dry weather of the previous two months was continued for the first twelve days of this month. On the night of the 12th rain began to fall,

and the weather became gradually worse until the night of the 15th, when we experienced a violent storm, which continued with more or less severity the following day, doing much damage to property, and uprooting trees in great numbers in many places, particularly where exposed to the south-west. Professor Grant, of the Glasgow Observatory, records that the wind was blowing with a velocity of 68 miles an hour. The maximum pressure registered by Oster's anemometer amounted to 29lbs. on the square foot. Since the above date the rainfall has been very heavy, and gales of considerable severity have been frequent: the mean temperature has been high. The lowest temperature registered was 29°. The thermometer was at or below the freezing point six times only, with a total of 10° as against 51° for November last year.

Mr. Lindsay exhibited and made some remarks on *Veronica Hectori*, *V. Lloganioides*, *V. pinguifolia* var., *Olearia nummularifolia*, and *Tmesipteris Forsterii*. These plants formed part of a collection received lately from New Zealand by Mr. M. Dunn, Dalkeith Palace Gardens. They were in a healthy, thriving condition after their long journey, and being of great botanical interest, Mr. Dunn had kindly presented them to the Royal Botanic Garden.

Living plants were also exhibited of *Diapensia lapponica*, *Cassiope hypnoides*, and *Tofieldia borealis* collected on the Dovrefeld, Norway, by Mr. G. Bird, and a number of interesting Alpine plants collected by Mr. P. Sewell on the desolate tundra regions to the extreme north of the Urals, during the expedition of the *Labrador*, amongst which were *Eritrichium nanum*, *Diapensia lapponica*, *Papaver nudicaule*, *Artemisia borealis* var., *Wormskioeldii*, *Polemonium coeruleum* var., *Pedicularis* sp., &c.

THE HONEY HARVEST IN THE NORTH.

Like the cereal harvest, the production of honey in 1888, in the North of Scotland, has proved the season to be one of the most unpropitious experienced in the memory of the present generation. Indeed, beekeepers have found apiculture disappointing in every respect. The cold, damp, and ungenial summer gave no encouragement for swarming, which was consequently very limited; and such as did take place was of a broken and unsatisfactory nature. The autumn was equally backward, with the result that both the Clover and Heather periods were totally unproductive, unless in very rare cases; and the harvest is, therefore, little short of an absolute failure. Extracted honey sells at 10d. per pound, and comb honey at 1s. per pound. Feeding by artificial means will have to be resorted to during the whole winter, and unless it be carefully attended to, the loss will seriously affect the brooding and honey production of not a few ensuing years, even though bee-culture should be favoured by more auspicious circumstances. *W. K.*

NURSERY NOTES.

CYPRIPEDIUMS AT MESSRS. HUGH LOW & CO.'S.

At the Clapton nurseries great provision has been of late years made for these favourite plants, a block of six commodious houses being devoted to them alone, in addition to those they used to occupy. At present a very interesting series of *Cypripedium* insigne varieties are in flower on imported plants, most of them having the *C. villosum* shaped pouch known in the admitted hybrid, *C. nitens*, and equally noticeable in that highest example of the *C. Maulei* type, *C. insigne punctatum violaceum*, a specimen of which is also now in flower at Clapton. The new importations take after this strain, but their dorsal sepals are variously marked, and have different proportions of white on them. Some have no purple spots on the dorsal sepal, others have small purple dots; some have but two large purple blotches, and some have coloured markings large and small. Some novelties may be expected out of them. In

the other *Cypripedium*-houses large quantities of *C. Spicerianum*, *C. Lawrenceanum*, *C. Haynaldianum*, *C. callosum*, *C. niveum*, *C. Sedeni*, *C. Argus*, *C. ciliolare*, *C. javanicum*, *C. Sanderianum*, and others are in flower and bud, and in the other houses a great display of spikes of most of the *Angracums* (especially *A. citratum* and *A. sesquipedale*), *Phalænopsis*, *Dendrobies* make now some show, and promise a great display in the New Year. A large batch of the pretty *Lælia peduncularis* is in bloom, a white variety being among them; with other *Odontoglossums* the rare *O. tentaculatum* is in flower; the beautiful new *Vanda Amesiana* is in great vigour, and a noble lot of *V. Parishii* and *V. P. Marriottiana* are sending up spikes. It appears that the greater the stock at Clapton gets the better the plants are managed, and the more orderly the houses are kept. The quantity of plants, such as *Phalænopsis*, *Angracums*, *Cattleyas*, *Odontoglossums*, and other things which are now cultivated there is surprising.

HOME CORRESPONDENCE.

EFFECTS OF FOG ON FLOWERS.—It would be interesting, and probably productive of good, if those who have observed the damage done to flowers and plants by heavy fogs in winter would send notes of their experience to the *Gardeners' Chronicle*. Apparently no one has ever tried to find out what it is in the fog of London which destroys flowers, especially white ones, and makes the leaves of many plants drop off. The way the plants are affected is curious. Thus—*Impatiens Hookeri* lost every bud, but retained its expanded flowers. *Begonia socotrana* was not affected, whilst the hybrids from it and the tuberous kinds raised by Messrs. Veitch lost every flower. *Dipladenia boliviensis* lost all its leaves, *Ipomœa Briggsii* many leaves but no flowers, white-flowered *Calanthes* have shrivelled as if blasted, whilst the pink-flowered kinds are much less affected. *Randia macrantha* has held its buds, but they have changed to a yellowish colour, and appear to be unable to expand. *Chrysanthemums*, especially white-flowered kinds, look as if they had been in the fire. These disasters have been noted at Kew as the result of the foggy weather experienced up to Sunday last. *W.*

SHELL DUST.—What is the chemical difference between shells and bones? The latter are at least classed as amongst our most valuable of manures, and probably give phosphates in as great proportion as any material available for manure production. There is considerable similarity between shells and bones, but the chief point so far as their respective manurial properties, is what identity is there between them in such relation? I ask this question because I note in your report of the recent meeting of the Royal Horticultural Society's committee, that you consider calcined shells or shell-dust so produced to be little better than lime. My estimate of the manurial properties of this substance is based upon the experience of others who, in employing it for ordinary garden crops, but especially for *Asparagus*, *Seakale*, *Potatoes*, &c., have found it to be valuable. The material, if but lime, is certainly far heavier relatively, probably three times as heavy, thus showing that it contains matter other than ordinary lime. The shell-dust was not sent me for sale or in any trading aspect, but solely to show what sort of stuff it was, especially as it enjoyed the reputation of being such excellent artificial manure. I appended a price solely because the sender, in reply to a query put by me, stated that such figure was about the cost of production. The shells have to be gathered from the seashore, and are calcined in a kiln constructed by the manufacturer, who is a sea pilot, and conducts this manufacture for his own and neighbours' purposes, when his vocation admits of his being ashore. He is also an enthusiastic gardener. A desirable course would be obtaining a chemical test of the value of the dust as manure, especially when compared with bone-dust. *A. Dean.*

PRESERVING FORCED FRENCH BEANS.—Where forcing is carried on, regularity in supply must be the main object; and this is sometimes unattainable, owing to one lot of plants not turning out so profitable as another; and it is therefore an advantage to preserve some when there is plenty to be used in times of scarcity. The largest Beans should be cut

with stalks, put in a pan or basin, and boiling water poured on them. In this they must remain for three minutes only; then take them out, tie a piece of raffia round the stalks, and hang them up to dry. With this treatment they will keep for a month or more, and the only preparation they require is to soak them twelve hours in cold water before cooking. The Beans will come as fresh to table as if just picked from the plants, and far superior to the bottled ones. *G. Howes, Merton.*

PEARS.—Whether there are too many Pears in cultivation or not seems to be a matter of no great moment, as all growers can suit themselves both as to number and sorts. It would be a much greater evil if we had too few kinds than too many, but with so many we can not only make selections of the best for cropping or for flavour, but we can also select best sorts for diverse soils and localities. But there is just now matter of greater importance to discuss than is the subject of numbers. What we want to know is how many Pears are there which are good now, and will be so up to the end of March. To keep a table supplied with Pears up to the end of November is by no means difficult, but nearly two-thirds and possibly nearly three-fourths of all Pears are over or useless by the time December comes in, so that it is of the first consequence we should know what kinds are keeping not only sound, but good; that is, are good dessert fruits now. Is it possible to give a list of 12 kinds, all good, which are not only productive, but keep their fruits in good table condition for any appreciable time after Christmas. If 12 be too many, then we must be thankful if six kinds can be found, but not one should be recommended which is not soft fleshed, pleasant flavoured, and really fit for table when ripe. Then it is worth learning further under what form of culture or training are the best keeping fruits produced. Do wall fruits, or those from dwarf bushes or espaliers keep best? This branch of Pear cultivation is of the first importance, and at this season specially worthy of the fullest attention and discussion. *A. D.*

—Under this heading, Mr. Wildsmith states, that a single paragraph in a note by "N. H.P.," referring to the above subject, in his opinion, settles the whole matter, but in what way I fail to see. It may be as well to repeat the paragraph, which runs as follows:—"It appears to me that the requirements of the family for whom the gardener has to provide as to quantity required, and the fertility of Pears in the neighbourhood must settle very largely the question of varieties a gardener grows." Taking this as it stands, we will suppose the requirements to be large as to quantity, and if so, I maintain that they can just as well be supplied by growing more trees of the best kinds named by me, than a great variety of inferior sorts, ripening at the same time, which, as I before remarked, only bring about complaints as to quality when sent in for dessert; for who, after one day, tasting a Marie Louise, Doyenné du Comice, Glou Morceau, or Winter Nelis, would touch a Doyenné Boussach, Beurré de Capiaumont, or almost any other out of the list? If any employer did so, or any of his guests, who happened to be judges of Pears, did so, I think the dissatisfaction I spoke of would come in, and the gardener would most likely be made aware of it by being asked to send in the same kind they had been using before. Then the question arises, what is the use of others left on hand in the fruit room? Instead of the twelve or fifteen varieties I stand out for, as being of first-rate quality, Mr. Wildsmith states that he can name at least fifty, but by what standard he adjudicates them first-rate against those I have enumerated, I am at a loss to conceive. That there are many good kinds other than this twelve or fifteen I readily admit, but most, if not all, are autumn ripeners, and are not to be compared with Beurré Superfin, Marie Louise, Doyenné du Comice, and Glou Morceau; then why cumber the shelves with their fruit? Many argue the matter, and try to meet it by asserting that the choice Pears named are not of equal quality in all soils and districts, which is correct, but surely what tells against the best operates in an equal degree against the others, and makes the bad sorts still worse, and renders them more unfit for table. As to Beurré Rance, I only named that as one of the very latest, which we can only remain at all satisfied with till a better sort is produced to come in at the same time, and I distinctly stated that it and others, ripening after January, were uncertain, and wanted fine seasons and warm sunny aspects to get them all up to the mark. I am glad to have the occasion to break a lance with

Mr. Wildsmith, who has so distinguished himself as a gardener, and I am proud to have had him here for a time. *J. Sheppard.*

DISEASED VINE ROOTS.—I enclose specimens of fungi growing upon decayed Vine roots and should be glad of your opinion of the small fungus present on the roots, and whether it is the cause of the decay noticed, or is simply a consequence of it. I may here explain that we are renewing the border entirely, in order to put in a fresh lot of young Vines, and at the same time have the bottom concreted, the old border having been made upon an open gravel and sandy bottom, out of which the Vine roots could not be kept, and which was the cause yearly of shanking more or less. Three years ago the roots were lifted and replanted near to the surface; they were all at that time in as healthy a condition as could be desired. The border was made up of the best loam to be found in the place, and I thought all would then go on right; but, to my disappointment, shanking has rather increased since the removal. I then determined to have all cleared out. In doing this I was very much astonished to find a quantity of the roots in the condition of those sent. About half of the roots are inside of the house, and are apparently in a more healthy condition. The curious part of this little annoyance



FIG. 105.—CONIOCYBE PALLIDA.

is that we cannot trace any cause whatever in our treatment that would produce it. And I should feel very grateful to have your ideas upon the subject, which my long experience fails to give. *John Webster.* [The growth on the Vine roots belongs to a lichen named *Coniocybe pallida*; the same growth has been described as a fungus under the name of *Ressleria hypogæa*, by Dr. Thumen, in his work on *Diseases of the Vine*, and by Mr. Berkeley as a fungus under the name of *Sphinctrina coremioides*. At first sight the plant greatly resembles a *Coremium* (= *Penicillium*) or even the doubtful *Vibrissæa lutea*. There is an illustrated account of this lichen, as found growing on Pear roots, in the *Gardeners' Chronicle* for January 13, 1872, p. 40.]

CAMELLIAS DROPPING THEIR BUDS.—"What is the cause of Camellia buds turning black and dropping, and how may it be averted?" was a question put to me a few days ago by a friend. Many causes may contribute to bring about this annoying loss of flowers, but to be able to give any advice on the matter, we must first find out, if possible, the true cause of the mischief. If the plants are pot-bound great care must be taken to see that the water does not escape between the side of the pot or tub and the ball, as it very often does when the soil is filled with roots. In that case the interior of the ball may be dust-dry, if not the whole ball of soil. On the other hand it is necessary to guard against the soil becoming too wet; and I have found the

Camellia as sensitive to neglect on this side as the others. It is often found that, when these plants that have been standing out-of-doors are housed in the early autumn, if the house is not kept as cool as possible, and all the air given them by day and night for some time afterwards, they will drop their buds more or less; and in some smoky localities Camellias do much better when kept under glass the year round. In the neighbourhood of Glasgow I never practised putting out my plants during the summer and I certainly had as fine a crop of flowers as could possibly be desired, whilst my neighbours, who stood their plants outside during summer, had rarely a dozen good blooms off two or three dozen plants. Therefore, I am of opinion that the cause of failure in my friend's case is chiefly due to him being compelled to put them out during summer, as many others have to do. In this garden there are about six dozen plants which are now carrying a very large number of buds, and some of the plants are in full bloom; but all of them were kept inside during the past summer. *J. McIntosh, Glenmachan.*

NEMATOID WORMS.—I have read with much interest the Rev. C. Wolley Dod's letter at p. 608 on these little depredators. In the spring of this year the same little worm gave me much trouble, and I may say thousands of bedding plants been destroyed, and these chiefly pelargoniums. I have little doubt but that nematodes were the cause of the loss. The potting soil consisted of the materials—partly—of an old hotbed, and I am led to believe that this is where we got such a brood of the worms from. There seems to be no question but that they are bred in decaying vegetable substance. Can their presence be due to anything contained in the excrement of the animals kept here? For their destruction, the Horticultural and Agricultural Chemical Co.'s worm destroyer was used. This substance will kill ordinary worms in pots, and it was used in a stronger state than was advised in the directions accompanying it, but I am not prepared to say that this dose actually killed them, but it enfeebles them, and they come to the surface of the soil, and sides of the pots. I should be glad to hear if a weak solution of sulphate of copper has been tried, and with what effect. *J. Young, gardener, Zoological Gardens, London.*

NATIONAL CARNATION AND PICOTEE SOCIETY.—There are several inaccuracies in the report of the last committee meeting which I should like to correct. It is not the case that the yellow selfs may be shown in the class for yellow grounds, but the word Picotee was struck out, in order to allow Carnations to be shown as well. The sum in the Treasurer's hands was not £40, but £30, and it was to be invested in the names of Mr. Hibberd and Mr. Leonard, neither Mr. Douglas nor myself having anything to do with it. No reference is made to the fact that the scarlet and rose-edged Picotees are to be divided. *Chairman of Committee.*

LILIUM NEILGHERENSE.—A fine specimen of this Lily is now in bloom in the conservatory here. It is 6 feet high in its pot, has five flowers on the stem, and scents the house. In *Elwes' Monograph* it is said, "Though I have not seen more than three flowers on a single stem, I believe it is capable of producing far more." Perhaps some of your readers who know the Lily in its own country will inform us how many flowers they have observed in its wild state. *George F. Wilson.*

STACHYS TUBERIFERA, KNOT-ROOT.—We propose the name of "Knot-roots" for *Stachys tuberifera*. The appearance of the washed roots is like that of a series of five or six simple knots tied on a piece of string. *Stuart & Mein.*

CHRYSANTHEMUM GRAFTING.—During the past season I have grafted a few varieties, and carefully watched them from the beginning till the end. They were stood together in rows—the grafted on one side, and those on their own roots on the other—both plants having the same treatment afforded them. Those on their own roots were much more advanced than the others in the first part of the season, but as time went on the grafted plants began to over-haul them, surpassing them in build and foliage, the latter being much more leathery. This I thought was a great improvement. The next was the bud on the self-growing plants, which made its appearance on April 30; this fact will be thought to be due to early striking, but the cuttings were put in on January 14, which I think is a good time for striking

Chrysanthemums. The first bud on the grafted plant did not show till June 5; then I knew which bud I had to look forward to for the crown bud, which bud I have not been able to save on the self-grown varieties, as it forms too early. The variety was Mrs. W. Shipman, a shy grower—but still it forms buds freely. I topped some of the plants of this variety on March 12, and I got the crown bud on August 20, which made a passable flower, but nothing like in size those obtained from the grafted plants, which in measurement stood $3\frac{1}{2}$ inches in depth, and 11 inches round—I think that a good flower for the past season. John Salter was another improvement. It had good petals; and I have sent the whole stool to let you see for yourself how strong it was. Lady Carey was very fine, though it did not have quite the same kind of treatment as the above varieties; and it was also broken off by the wind in May, which saved me the trouble of picking it, which I should have had to do as it was growing away too fast. Two other varieties, J. Deleaux and Criterion, I have also grafted the last two seasons, as on their own roots they did not make enough roots to please me. I should like to hear the opinions of others on this method. *W. G. Adams.* [The stool sent of John Salter on Elaine was strong and well-rooted. Ed.]

Echeveria retusa.—We have here upwards of one hundred plants of the above in full bloom, making a fine show, with their glaucous foliage and bright coloured flowers, and which will continue in good condition for a length of time. Considering the ease with which Echeverias can be grown it is surprising they are not more common. I find that in a cool house they would not have flowered until much later, but by being placed in a warm greenhouse about October they come in nicely for brightening up the conservatory at Christmas, and as the flowers, when cut, last a long time in perfection it makes them doubly valuable. *H. Saxstone.*

EARLY RHUBARB.—Your correspondent, Mr. H. Sewell, is evidently a person who declines to submit to the rules which have to govern ordinary people. He objects to his Rhubarb being treated at Chiswick as other Rhubarbs are, ignoring the fact that all things sent there for trial have to be tested under ordinary garden cultivation only, as the object in view in sending such things to Chiswick is to ascertain first, whether they are diverse or otherwise from similar things, and also how far, if diverse, improved features may be shown. It is impossible for that work of comparison to be carried out with fairness and usefulness if some special form of treatment or of cultivation be given to any one plant, let it be what it may, that is not given to all others. Now, as Mr. Sewell seems to be, in relation to the cultivation of Rhubarb, the depository of an important discovery, especially in promoting very early and healthy growth, and as this discovery does not at his own showing apply specially to some new sort of Rhubarb, but to ordinary Rhubarbs, why does he not unselfishly publish the nature of his particular knowledge, so that gardeners universally might put it into practice? Why, with all the rivalry, the Rhubarb grower for a judge, "submit to the insults of the prejudiced and the trade biased" Fruit Committee of the Royal Horticultural Society? Of course, in expecting such a course to be taken I am aware that gardeners are a rather sceptical race, and they have found ample reason in relation to horticultural discoveries to be so; still, they are not prejudiced people, and will readily accept any improvement in the art of cultivation come from whence it may. It is interesting to find that forced Rhubarb contains oxalic acid. I suppose it is just because it contains something naughty that we eat it so greedily. The world has not yet become so nervous as to be frightened from its early forced Rhubarb because it contains this terrible ingredient. *A. D.*

CHRYSANTHEMUM MRS. COBAY.—I note that your correspondent, "R. D." on p. 703 of your last issue, makes mention of Mrs. Cobay, a variety with which I am unacquainted, and I, therefore, should be much obliged if he will describe the characteristics of the flower, as I am always interested in the introduction of new varieties. *E. M.*

NEAL'S NE PLUS ULTRA RUNNER BEAN.—There is no mistake in this being very far ahead of any other runner Bean that has come under my notice. I have grown it for the last two seasons side by side with other varieties, but it surpasses them all for

cropping, as also for exhibition. With me the bine and foliage are distinct, growing to some 12 or 14 feet, producing masses or clusters of splendid Beans, 10, 12, and 13 inches long, and as straight as possible. I would strongly advise gardeners to give it a trial, taking every care to procure the true stock. Those staged by Mr. Richards, of Somerley Gardens, at the Aquarium, last September, and by Mr. Waite, of Glenhurst Gardens, at Southampton, were simply perfection. *J. Hughes, Eydon Hall Gardens.*

SOCIETIES.

YORK FLORISTS'.

THIS body held its annual dinner at the "Old George Inn, York, on the evening of Friday, December 14, the City Sheriff, Councillor Matthews, presiding. After the usual loyal toasts were given and duly responded to the Chairman announced that he had received several letters from gentlemen unable to attend the meeting, and also a congratulatory telegram from the National Chrysanthemum Society, with which the York society is affiliated.

The Chairman then proposed the toast of the evening, "Success to the Ancient Society of York Florists and all lovers of a garden." He believed the Society was first established in 1720, and he need not tell them that it had had a somewhat chequered career. If it had not been for a few enthusiastic lovers of flowers it would not have been in existence. The establishment of the Chrysanthemum show, nine years ago, had contributed greatly to its strength. Its minor shows, by the kindness of successive Lord Mayors, held in the Guildhall, had been of such excellence that they had been thoroughly enjoyed and looked forward to with pleasure by the citizens generally. These shows, to which the public were admitted free of charge, were undoubtedly a great boon. Not long ago special prizes began to be offered by prominent citizens; and, though they had not the presence of the Lord Mayor, his lordship had generously intimated his intention to follow the example of his predecessors in this respect. The Society was never in a better condition. It numbered upwards of 400. It had made rapid strides in the last few years, and he hoped it would go on prosperously. He should have pleasure in giving the usual Sheriff's prize at the next exhibition.

Mr. Fielding, Treasurer of the Society, informed the meeting that the Society was in a good financial position, and possessed at the termination of the last year a balance of £150; while the annual income by donations, &c., had been £120. From causes known the money from the Chrysanthemum show had not been so large as last season; but they had no great cause of complaint. The amount received was £140; and they would be able to pay their way, with possibly a £10 or £20 to add to the balance.

Alderman Sir Joseph Terry, in the course of his remarks, said, that they had been affiliated to the National Society, and the latter Society, had their provincial show, but neither the Vice-President (Mr. Cowper) nor himself thought it equal to their own. They hoped to have this show in York next year. *Abstract from the "Yorkshire Chronicle," December 15.*

BOTANY FOR GARDENERS.

THE last of a series of ten lectures on elementary botany and the principles of gardening, by Professor R. J. Harvey Gibson, M.A., F.R.S.Ed., was delivered on the 13th inst. in the Mechanics' Institute, Woolton. Mr. Holbrook Gaskell presided, and there was a crowded attendance of the working gardeners of the district. The lectures have been well attended, and appreciated by the hearers, the language employed being as free as possible from technical phraseology. The leading points of the lectures have been illustrated by artistic photographs cast on a screen by means of the oxyhydrogen light.

The Chairman, who was very cordially received, said that a very interesting, instructive, and brilliant course of lectures was now, he was sorry to say, concluded. He was quite sure that all of them must feel very much indebted to Mr. Harvey Gibson for his kindness in coming out to Woolton to give them such masterly addresses on a subject which so

deeply touched them. In the old days botany was not treated in the way in which it was at the present day by such men as Mr. Gibson. The naming and classification of the various vegetable productions of the globe constituted a large part of the science, and it certainly was a dry affair. But now they had it explained in a most attractive manner; indeed, to listen to Mr. Gibson was as enjoyable as reading a romance.

It may be mentioned here that Mr. H. Gaskell has given £5000 towards the endowment of a Chair of Botany at the University College.

Mr. Gaskell, in conclusion, proposed a vote of thanks to the Rev. George Beaumont and the committee of the Mechanics' Institute for their kindness and liberality in letting them the hall gratuitously for these lectures.

The Rev. G. Beaumont, after returning thanks, suggested, as a practical outcome of the lectures, the formation of a Gardeners' Association in connection with the Woolton Mechanics' Institute. They were surrounded by gardens and gardeners, and if such a society was formed, to embrace all the gardeners of Liverpool and the district, with the object of studying botany and gardening, as well as for mutual help, he would say, on behalf of the Mechanics' Institute, that they would be delighted to give them fire, light, and room. But if the gardeners did not see their way to do that, he hoped that they would engage Professor Gibson to form a class for the study of some particular branch of the profession which would be of practical importance to gardeners in their work.

The Chairman thought that the suggestion of the Rev. Mr. Beaumont was an excellent one, and all he could say was that if the project was taken up and they stood in need of any financial assistance he should be very pleased to come to their aid.

COLONIAL AND FOREIGN.

NOVA SCOTIA FRUIT CROPS: APPLE ORCHARDS, PEARS.

FRUIT culture is extending throughout the province, but principally in the two counties of Annapolis and Kings, which have long been known for their established orchards. The most successful orchard Apple this year is the Gravenstein, making an all round crop of 120 per cent. in Annapolis County, and 121 per cent. in King's, the average quality in the former being 103, and in the latter 112. The poorest cropper in King's County is the Blue Pearmain, and in Annapolis the Nonpareil. The Apple of poorest quality in Annapolis is the Flushing Spitzenburg, 60; in King's County the once famous Bishop Pippin also 60. The Baldwin is low in quality as well as in quantity this year. Other leading varieties give full or fair crops. Land-owners throughout the whole province ought to feel encouraged to plant orchards, as at once a source of revenue and a means of increasing the value of their lands. A correspondent at Round Hill writes:—"Lands favourably situated where orchards have been planted have increased in value within a few years nearly 100 per cent." In Annapolis County a correspondent writes:—"We are raising a quantity of Pears: Bartlett, Clapp's Favourite, Louise Bonne de Jersey, Winter Nelis, the principal kinds. The crop this year was good in quantity and quality." *From the "Provincial Government Crop Report," November.*

NATAL.

Considering that *Alberta magna* (E. Mey) is one of the finest flowering shrubs native to Natal, it is strange that hitherto, so far as my knowledge goes, it has not been cultivated in Europe or elsewhere. One of the Rubiaceæ, and placed in the *Flora Capensis* halfway between *Gardenia* and *Pavetta*, it will probably strike freely from cuttings, and being found along with *Greyia Sutherlandi* at elevations from 4000 to 5000 feet, in places where snow falls nearly every winter, it may prove half-hardy in the South of

THE WEATHER.

[Accumulated temperature indicates the combined amount and duration of the excess or defect of temperature above or below 32° F. for the period named, and is expressed in Day-degree — a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.				
	Above or below the Mean for the week ending Dec. 17.	ACCUMULATED.			
		Above 42° for the Week.	Below 42° for the Week.	Above 42° difference from Mean since Jan. 3, 1888.	Below 42° difference from Mean since Jan. 3, 1888.
Principal Wheat producing Districts.		Day-deg.	Day-deg.	Day-deg.	Day-deg.
0. SCOTLAND, N. ...	3 above	19	11	— 197	+ 131
1. SCOTLAND, E. ...	2 above	4	32	— 403	+ 43
2. ENGLAND, N.E. ...	3 below	0	42	— 453	+ 33
3. ENGLAND, E. ...	5 below	0	58	— 320	+ 111
4. MIDLAND COS. ...	6 below	0	61	— 407	+ 93
5. ENGLAND, S. ...	4 below	0	39	— 337	+ 138
Principal Grazing, &c., Districts.					
6. SCOTLAND, W. ...	1 above	7	18	— 306	+ 17
7. ENGLAND, N.W. ...	2 below	2	30	— 311	+ 41
8. ENGLAND, S.W. ...	2 below	10	29	— 423	+ 219
9. IRELAND, N. ...	0 (aver.)	11	22	— 219	+ 42
10. IRELAND, S. ...	1 above	26	14	— 182	+ 28
— CHANNEL ISLANDS	0 (aver.)	23	1	— 221	+ 133

TRADE MEMORANDA.

A MAN about 5 feet 8 inches high, with darkish complexion, with dark, long beard and moustache, moderately stout, with something rather peculiar in the look of his eyes, and who states he is gardener to a gentleman at West Hampstead, is busy in the neighbourhood of London and the suburbs, giving orders for shrubs, plants, &c. His method is to call at a nursery and select shrubs, and next morning to forward a letter, professing to come from his employer, stating that his gardener had not selected all the shrubs that he would require, and that he would send him over again to-day; and stating, moreover, how pleased he was with the last lot of shrubs he received. The man comes, selects more shrubs, and directs them to be sent by a certain day; but before the day arrives, a telegram comes, requesting the shrubs not to be sent that day, after which comes a second letter from the mythical employer, in which he tells his gardener he has made up his mind to have all the planting done by the nurseryman; but that all shrubs marked were to be sent, after he had an interview, and explained what he required done in the park and gardens, making an appointment on a certain day and hour. With this letter comes one from the said gardener, telling a tale of grief and woe—how, when he got home from the nursery he found a letter stating that his wife's mother was dead, that she had no relatives, and not a penny to bury her, and that he was in a fearful fix. To help him would I lend him a certain small sum? it would be such a favour, for he did not know what to do. The money was to be sent to Epping. The writer sent a small crossed cheque, thinking it would be a little protection in case of fraud, but the man was equal to the occasion, for knowing I had a relative in the same line, he doubled back from Epping to London, and got him to cash the cheque, and gave him also a bogus order. The fellow gets well up in his part in every way, knows the name of your late foreman (correctly), is well up in the names of plants, shrubs, &c., and does not scruple to take anything he can get. His order was, he told me, to take back six best bunches of Grapes, and the same number of bunches to be sent weekly. There is no such place or gentleman of the name given at West Hampstead, and the address of the second letter, viz., Grand Hotel, Eastbourne, is also a fabrication, no such person, I was informed, had ever stayed there, *A Victim*.

ANOTHER ROGUE.

It would be as well to caution nurserymen and those connected with the trade to make inquiry before executing any orders they may receive from the neighbourhood of Bristol from unknown customers, as a certain individual is giving large orders for goods, while the chances of getting paid for them are very doubtful, as I am informed to-day (December 14) by a nurseryman who paid a personal visit, having received a good order, but, being suspicious, did not send the goods; and, I need not say, does not intend doing so. *A. O.*

THE PAST WEEK.

The following summary record of the weather for the week ending Dec. 17, is furnished from the Meteorological Office:—

"The weather has been in a more quiet and settled condition than for some time past. The sky has, however, been very cloudy or overcast generally, and over England and the Channel thick fogs or mists have prevailed.

"The temperature has continued above the mean

in Scotland and most parts of Ireland, but over England it has been below; over eastern, central, and southern England the deficit has ranged from 4° to 6°. The highest of the maxima (which were recorded on rather irregular dates) varied from 45° in 'England, N.E.,' and the 'Midland Counties,' to 55° in 'Ireland, S.' Over the inland parts of England the maxima on some occasions were but little above 32°. The lowest of the minima were registered in most places during the earlier days of the period, when they ranged from 23° in many parts of England and in the south of Ireland, to 27° in 'Scotland, N.,' and 36° in the 'Channel Islands.' During the night of the 12th and 13th a thermometer exposed on the grass in London fell to 14°.

"The rainfall has been less than the mean in all districts. Over the greater part of England no rain has fallen, but at many stations measurable amounts of water were deposited in the gauge by the wet fogs.

"Bright sunshine has been very deficient generally. The percentage of the possible amount of duration ranged from 2 to 15 in Scotland, from 15 to 25 in Ireland, and from 7 to 28 in England."

MARKETS.

COVENT GARDEN, December 20.

ALTHOUGH Christmas is so near, business does not improve, buyers holding back for the end of the week. Supplies all round good. Heavy consignments of Canadian and Nova Scotian Apples. *James Webber, Wholesale Apple Market.*

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Apples, half-sieve...	2 0- 4 6	Lemons, per case	12 0-21 0
— Canada and Nova		Peaches, dozen	2 0- 6 0
— Scotia, per barrel	10 0- 18 0	Pine-apples, Eng., lb.	1 6- 2 0
Cobs, 100 lb.	100 0-110 0	— St. Michael, each	2 0- 8 0
Grapes, per lb.	0 6- 3 0		

VEGETABLES.—AVERAGE RETAIL PRICES.

	s. d. s. d.		s. d. s. d.
Beet, red, per dozen	1 0- 2 0	Mustard and Cress,	
Carrots, per bunch	0 6- 0 0	punnet	0 4- 0 0
Cauliflowers, each	0 3- 0 0	Onions, per bunch	0 5- 0 0
Celery, per bundle	1 6- 2 0	Parsley, per bunch	0 4- 0 0
Cucumbers, each	0 9- 0 0	Potatoes, per cwt.	4 0- 5 0
Endive, per dozen	3 0- 0 0	— kidney, per cwt.	4 0- 5 0
Green Mint, bunch	1 0- 0 0	Shallots, per lb.	0 6- 0 0
Herbs, per bunch	0 6- 0 0	Spinach, per bushel	4 0- 0 0
Leeks, per bunch	0 4- 0 0	Tomatoes, per lb.	1 6- 0 0
Lettuce, per dozen	1 6- 0 0	Turnips, per bunch,	
Mushrooms, punnet	1 6- 0 0	new	0 5- 0 0

POTATOS.—Beauty of Hebron, 70s. to 80s.; Imperators, 65s. to 75s.; Dunbar Regents, 110s.; do. Magnums, 130s.; and Magnums, 80s. to 90s. per ton.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Aralia Sieboldi, doz.	6 0-18 0	Ferns, in var., doz.	4 0-18 0
Chrysanthemums, doz.	4 0- 9 0	Foliage plants, various, each	2 0-10 0
— large plants, each	2 0- 4 0	Ficus elastica, each	1 6- 7 0
Cyperus, per dozen	4 0-12 0	Hyacinths, Roman, dozen pots	10 0-12 0
Dracena terminalis, per dozen	30 0-40 0	Lily-of-Val, doz. pts.	38 0-43 0
— viridia, per doz.	12 0-24 0	Marguerites, doz.	6 0-12 0
Epiphyllums, doz.	18 0-30 0	— (French), 12 bun.	3 0- 6 0
Erica hymalis, doz.	12 0-24 0	Palms in var., each	2 6-21 0
— caffra, dozen	6 0-12 0	Pelargoniums, scarlet, per dozen	4 0- 9 0
— gracilis, dozen	8 0-12 0	Poinsettias, doz.	9 0-15 0
Euonymus, in var., per dozen	6 0-18 0	Primulas, per dozen	4 0- 6 0
Evergreens, in var., per dozen	6 0-24 0	Solanums, doz.	9 0-15 0
		Tulips, dozen pots	8 0-10 0

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Abutilons, 12 bun.	3 0- 6 0	Marguerites, 12 bun.	3 0- 6 0
Azaleas, 12 sprays	0 9- 1 0	Mignonette, 12 bun.	2 0- 4 0
Bouvardias, per bun.	0 9- 1 6	Narcis, paper-white, (French), 12 bun.	3 0- 6 0
Camellias, 12 blms.	3 0- 6 0	Pelargoniums, 12 spr.	1 0- 1 6
Carnations, 12 blms.	2 0- 3 0	— scarlet, 12 spr.	4 0- 8 0
Christmas Roses, 12 blooms	0 6- 1 6	Poinsettias, doz.	4 0- 9 0
Chrysanthemums, 12 blooms	0 6- 3 0	Primulas, dbl., 12 spr.	1 0- 1 6
— dozen bunches	4 0-12 0	Roses, Tea, per doz.	1 0- 3 0
Eucharis, per dozen	3 0- 6 0	— coloured, dozen	2 0- 4 0
Gardenias, 12 blooms	6 0-12 0	— red, per dozen	1 0- 2 0
Heliotropes, 12 spr.	0 6- 1 0	— Safrano, dozen	2 0- 3 0
Hyacinths, Roman, 12 sprays	1 0- 1 6	Stephanotis, 12 spr.	6 0- 8 0
Lapagerias, 12 blooms	1 0- 2 0	Tuberose, 12 blms.	1 6- 2 0
Lilac, white Fr. bun.	5 0- 7 0	Violets, 12 bunches	1 0- 1 6
Lily-of-Val., 12 spr.	1 0- 2 6	— dark, Fr., bunch	1 6- 3 0
		— Parme, Fr., bun.	4 0- 5 6

* Prices for Christmas week vary so much it is impossible to quote certainly; they are generally higher about Christmas Day. Holly is well berried, and plentiful; Mistletoe in quantity, but well-berried boughs are rather scarce.

SEEDS.

LONDON: Dec. 19.—Messrs. John Shaw & Sons, seed merchants, of 37, Mark Lane, E.C., write that as might be expected, the seed market to-day presented quite a holiday appearance. For all de-

scriptions of Clover seeds the tone is quiet but firm. Offerings from France have of late fallen off somewhat, whilst cable advices from America report values there as exceedingly strong. Alsike, white, and Trefoil are held at former rates. In Rye-grasses there is no change. Choice samples of Blue Peas have become scarce; Haricot Beans are now good and cheap. For Hemp and Canaryseed the trade is slow.

CORN.

Averages.—Official statement showing the average price of British corn, imperial measure, in the week ended December 15:—Wheat, 30s. 10d.; Barley, 27s. 1d.; Oats, 16s. 10d. For the corresponding week in 1887:—Wheat, 31s. 2d.; Barley, 29s. 1d.; Oats, 16s. 2d.

CATTLE.

LONDON: Dec. 17.—The supply of cattle for the Christmas trade at the Metropolitan Cattle Market to-day was rather larger than in several recent years. There were on offer 7518 beasts and 12,890 sheep. Respecting cattle, it is stated that altogether the show, on the score of both magnitude and merit will rank among the best exhibitions of the kind for years past, all the various breeds being fully and well represented. Partly from the foggy weather, but more from the diminished attendance of country buyers, the trade dragged very heavily, and was very disappointing to sellers. For the best Scots 5s. was the current top price. In exceptional cases 5s. 2d. may have been made, but there were very many cases where 4s. 10d., and even 4s. 8d. per stone had to be taken for really prime beasts to effect even a partial clearance. The sheep were an excellent collection, in which the Down breeds were the most largely represented. The trade was fairly good, and prices were fairly supported; 13 to 12 stone half-breds and Downs sold at 5s. 8d. to 5s. 10d.; 11 to 10 stones, 6s. to 6s. 2d.; and small choice 8 stones, 6s. 4d. per 8 lb., sinking the offal.

FRUIT AND VEGETABLES.

SPITALFIELDS: Dec. 19.—Very good supply of all kinds of fresh vegetables, Apples, &c. Trade very dull. Quotations:—Pears, 2s. 6d. to 5s. per bushel; English Apples, 3s. to 5s. do.; do., 1s. 6d. to 2s. 6d. per half-bushel; American Apples, 8s. to 12s. 6d. per barrel; Savoy, 1s. 6d. to 3s. per tally; Cabbages, 1s. 6d. to 2s. 6d. do.; Guernsey Cauliflowers, 1s. 6d. to 2s. per dozen; Guernsey Broccoli, 1s. to 1s. 9d. do.; Spinach, 1s. to 1s. 3d. per bushel; Brussels Sprouts, 1s. to 1s. 3d. per half-sieve; Seakale, 1s. to 1s. 3d. per punnet; Parsnips, 6d. to 8d. per score; Greens, 1s. to 1s. 9d. per dozen bunches; Turnips, 1s. 3d. to 1s. 9d. do.; Carrots, 1s. 6d. to 1s. 9d. do.; Beetroots, 8d. to 9d. per dozen; Parsley, 1s. 6d. to 2s. 6d. per dozen bunches; Horseradish, 1s. to 1s. 2d. per bundle; Celery, 6s. to 12s. per dozen bundles; English Onions, 4s. 3d. to 4s. 9d. per cwt.; Dutch do., 2s. 9d. to 3s. per bag; Belgian do., 2s. 9d. to 3s. do.; pickling do., 4s. to 4s. 9d. do.; Endive, 1s. 6d. per dozen; Carrots, 26s. to 32s. per ton; Mistletoe, 30s. to 50s. per large crate; do., 9s. to 15s. per small crate; Holly, 4s. 6d. to 8s. 6d. per dozen bundles.

POTATOS.

BOROUGH AND SPITALFIELDS: Dec. 18.—There has been a fairly good demand for best qualities, for which prices are rather firmer, but secondary sorts do not move off so readily.—Regents, Scotch, 80s. to 125s.; English, 60s. to 90s.; Hebrons, 70s. to 110s.; Magnum Bonums, 60s. to 100s. per ton.

SPITALFIELDS: Dec. 19.—Quotations:—Beauty of Hebron, 70s. to 85s.; Magnums, 60s. to 85s.; Imperators, 65s. to 85s.; Regents, 83s. to 95s.; Champions, 60s. to 65s. per ton.

STRAFORD: Dec. 13.—Quotations:—Scotch Magnums, 80s. to 100s.; English, do., 65s. to 70s.; Regents, 80s. to 90s. per ton.

HAY.

Averages.—The following are the averages of the prices obtained at the various metropolitan markets during the past week:—Clover, old, prime, 120s. to 145s.; good second, 81s. to 110s.; inferior, 45s. to 75s.; prime meadow hay, 120s. to 130s.; good new hay, 60s. to 100s.; inferior, 40s. to 70s.; old straw, 42s. to 49s.; new, 29s. to 42s. per load.

ENQUIRIES.

"He that questioneth much shall learn much."—BACON.

CHRISTMAS ROSES AND SLUGS.—Our Christmas Roses are this year very plentiful and fine, but the appearance of the blooms is, as usual, much impaired by the ravages of a small black slug. Can anything be done to destroy or trap this pest? *Leirion*.

NOTICES TO CORRESPONDENTS.

ADDRESSES, &c.: *G. Martin*. For the South African Philosophical Society address to Prof. McOwan. Botanic Gardens, Cape Town, South Africa. The address of the *Garden and Forest* is Tribune Buildings, New York, U.S.A. *My Garden* is a book by A. Smea, containing an account of horticulture, at his residence, The Grange, Hackbridge. We have never heard of the "Union Centrale des Sciences Naturelles d'Angleterre." "Indian Orchidology" is a paper published many years ago in the *Journal* of the Linnean Society. An account of the Indian Orchids is in course of publication in the *Flora of British India*, by Sir J. Hooker (published by L. Reeve & Co., Covent Garden). The last part issued contains few of the Orchids.

ARUM FLOWER: *B. Primrose*. The doubling of the spathe of the flowers of this aquatic is by no means a rare occurrence.

BEES: *C. R.* Apply to Mr. Neighbour, 149, Regent Street, London, W.C.

BOOKS: *G. Matthews*.—Ferns: *Select Ferns*, by B. S. Williams, Paradise Nursery, Upper Holloway, N. Bee-keeping: *Bee-keeping*, by A. Rushbridge, E. W. Allen, Ave Maria Lane, E.C. Roses: *The Rose Garden*, by W. Paul; *The Rose Amateur's Guide*, by T. F. Rivers, Longmans, Green & Co., London; and *Roses in Pots*, by Shirley Hibberd, Kent & Co., Paternoster Row. Orchids: *The Orchid Grower's Manual*, by B. S. Williams, Holloway, published and sold by the same.

CERTIFICATED PLANT: *H. J. B.* The list published in our last number only contains, as is stated, the names of plants certificated during the latter half year. Your plant was shown early in the year, and you will find we record it in the list of certificates for the first half year, published in our issue for June 30 last, p. 799.

CORRECTION.—In report of the Royal Horticultural Society, in our last issue, at p. 709, col. a, third line from the bottom, for "former," read latter.

CYPRIPEDIUM: *H. J. R.* The forms you name have not been botanically described, so far as we know. They are probably forms of *C. praestans*, except the one said to come from Nepal.

HOT-WATER PIPES: *A. Heal Gardener*. Lamp-black and boiled Linseed-oil may be used to paint hot-water pipes without any ill-effect being observed on plants; but it is always advisable to heat the pipes several times whilst the house is empty of plants. It is nonsense to say that painted pipes give off an appreciably less amount of heat than unpainted.

INSECTS: *J. C.* The very minute white scale-like insects on the leaves sent are the immature states of a tiny four-winged fly belonging to the genus *Aleyrodes*, which has the same habits as the Aphides. *I. O. W.*—*E. M.* A form of cockroach. As the trap has failed to catch them, why not try arsenic in treacle? or, drive them away by placing carbolic acid in their haunts. Are you sure they have ever got into the traps? for it seems to be next to impossible that such a creature could escape after once getting in.

LIFE HISTORY OF MIGNONETTE: *Roseda*. We know of no work where you will find what you require.

NAMES OF FRUIT: *H. Barry*. Your Pear is Josephine de Malines.—*W. H. Cutbush*. Apple Hollandbury.—*A. Neilson*. 1, Beurré Rance; 2, Winter Crassane; 3, Colonel Vaughan.—*W. Fisher*. Large fruit, Warner's King; small, Non-such.—*F. S.* 1, Vicar of Winkfield; 2, Easter Beurré; 3, Josephine de Malines.

NAMES OF PLANTS: *G. M.* 1, *Sophronis grandiflora*; 2, *Bifrenaria racemosa*, probably, but pollinia absent, and flower withered; 3, *Cattleya luteola*; 4 and 6, not recognised with sufficient certainty; 5, *Rodriguezia planifolia*.—*W. M.* Cypr-

pedium insigne var.; *Lælia peduncularis*; *Vandatri-color*.—*M. Burne*. 1, *Monochætum ensiferum*; 2, *M. sericeum*; 3, leaf of *Hæmanthus coccineus*, probably; 4, *Diplacus glutinosus*; 5, *Salvia* species: send again when in bloom.—*E. Rylands*: The name *Eurybia* is probably correct, but we cannot tell the species from such a small, unfloowered piece.—*E. O. R.*: 1, *Abutilon Boule de Nègre*; 2, *A. striatum*; 3, *Abutilon*—a rose-coloured hybrid.

PATAGONIA: *J. C. G.* A good many numbers of the *Gardeners' Chronicle* would not suffice to tell you all you wish to know. Climate temperate to antarctic; good in Argentine Republic, villainous in Southern Patagonia. Spanish and Italian languages, besides the native tongues. No particularly "ferocious" animals. *Lapageria*, *Philæa*, are two well known garden plants from this region. You should consult the books of travel of Darwin, Ball, Hooker, &c., besides botanical books descriptive of the flora.

PLANT CULTURE, &c.: *N. N. E.* 1, *Sobralias* may be repotted any time after flowering and before new growths commence. 2, It is natural for the leaves of deciduous *Dendrobies* to turn "yellow and fall off when drying them." It is an indication of the ripening of the pseudobulbs necessary before flowering. 3, *Phalanopsis* should be kept moist all the year round, but have the least water between the months of October and March. Direct sunlight is injurious to them in hot weather. As near as possible to a temperature of 60° Fahr. by night, and 70° by day, all the year round, is the best for them, but of course in summer that will sometimes be exceeded. 4, We know of no work such as you describe, but we do all we can to meet the want in these columns.

RATING GREENHOUSES: *A Constant Subscriber*. If you turn to our issues, vol. xxiv, pp. 155, 183, 498, 720, 758, and 816, vol. i., 3rd series, pp. 422, 650, and 676, you will find very useful information for your guidance.

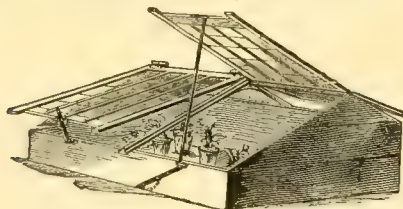
SKIMMIA: *M. D.* The germination of the embryo while still in the fruit is not uncommon in Oranges and Lemons, to which the *Skimmia* is nearly allied. A similar phenomenon often occurs in *Pernethya*.

STRAWBERRY PAULINE: *Thirty-five Years' Subscriber*. This variety is not grown largely for market purposes, so far as we know, but being large, early, and of good flavour, and a heavy bearer, it should give satisfaction to growers for market. If you have runners for sale, advertise them in our columns.

WASPS' NEST: *C. W. W.* A nest of 12 inches by 11 inches is of an unusual size. You do not say if it was a hanging nest or a nest built in the ground; the former seldom reach the dimensions given. There are persons who will buy anything, so there is hope for your cottager if it be advertised.

PROPAGATION OF FICUS: *H. P.* The best time to make cuttings of any species of *Ficus* is from the middle of February to the end of March; and the place—a moderate hotbed of 75° to 80° bottom warmth; and if many are to be struck, the bed may be prepared with light sandy loam, covered with a layer of sand, no pots or pans being employed. The best part of a shoot for a cutting is not the soft point, but a piece lower down, which has begun to get woody, and which may be cut with three or four leaves. After the cuttings are made by removing the bottom leaf, the wound at the top being closed with grafting wax, they should be lightly potted head downwards, covering all parts except the base, with some light earth, and left for twenty-four or thirty-six hours, so that the milky piece may exude, and the wound get dry. This proceeding holds good with all hardwood exotics with milky juice, some—*Euphorbias* for example, not being inserted in the soil for twenty-eight days after being made. The buds of *Ficus* if furnished with a leaf may be used to raise plants, but it is a slow job. We have no experience of seedling *Ficus*, but should suppose that, provided the seed be good, strong plants might be raised in three years from time of sowing the seed.

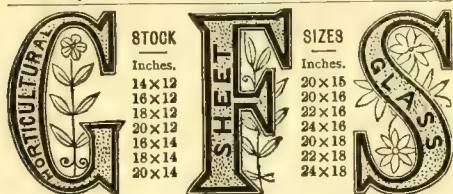
COMMUNICATIONS RECEIVED.—*M. B. M.* (many thanks: no room).—*T. S.*—*A. O. W.*—*H. J. R.*—*D. T. F.*—*J. B. & Sons*. *W. D.* (sent to the authority concerned).—*G. H.*—*Gibb's Compound*.—*J. H. B.*—*J. H. J.*—*A. N.*—*J. L. W.*—*E. Townsend*.—*E. C. F.* & *P.*—*J. V. & Sons*.—*D. C. P.*—*J. G. Baker*.—*S. J. S.*—*E. W.*—*J. R. J.*—*B.*—*W. J. M.*—*W. H.*—*A. D. W.*—*T. C.* (photograph reserved for consideration).

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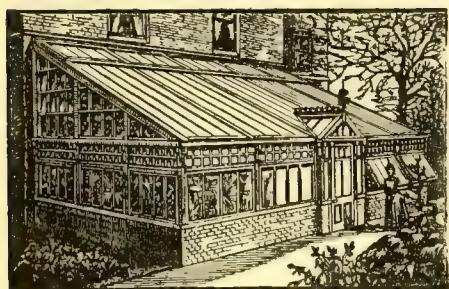


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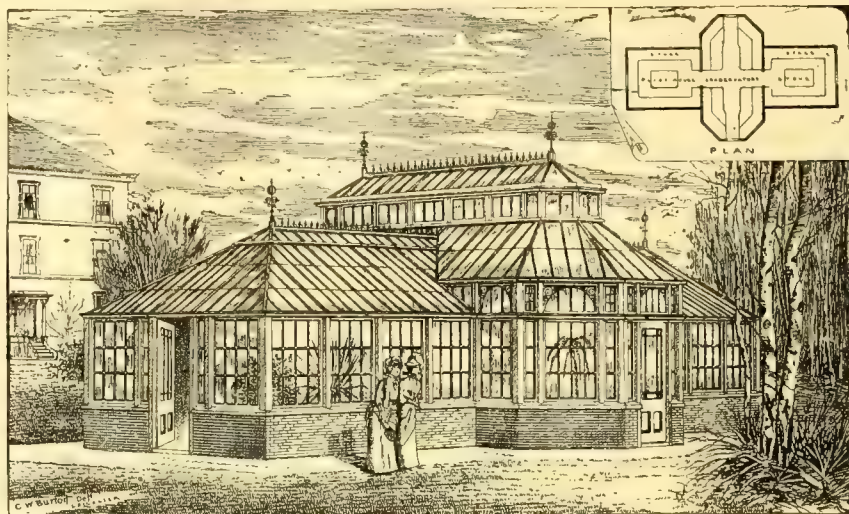
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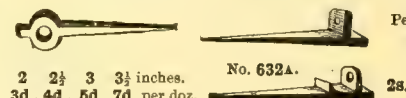
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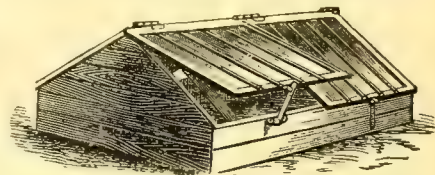
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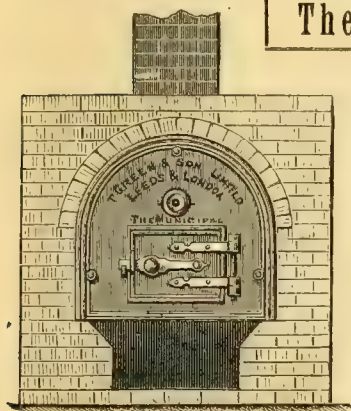
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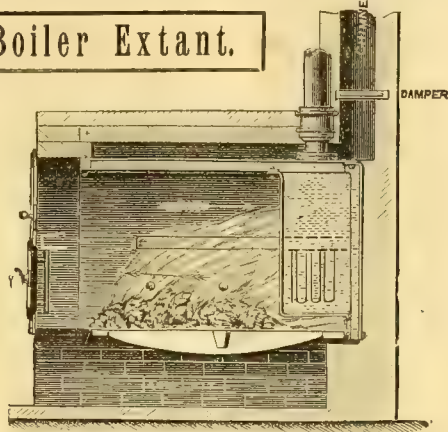
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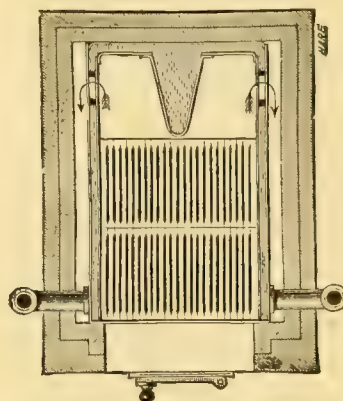
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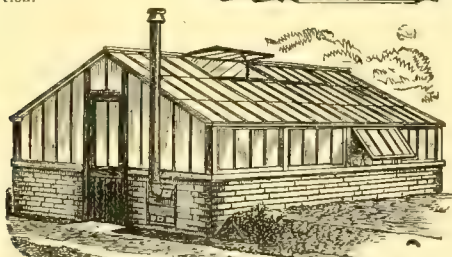
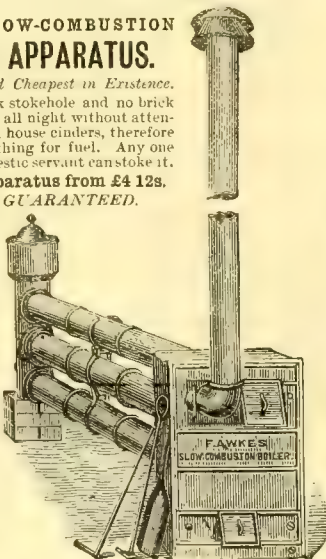
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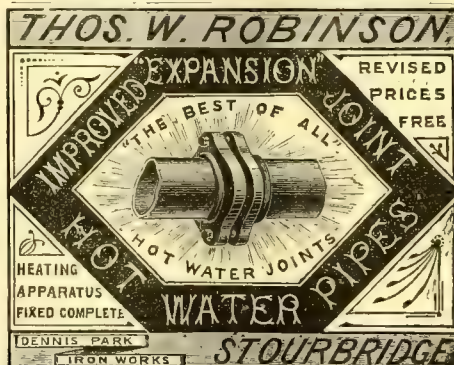
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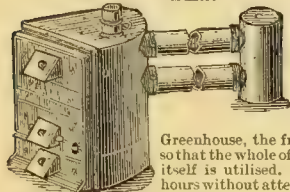
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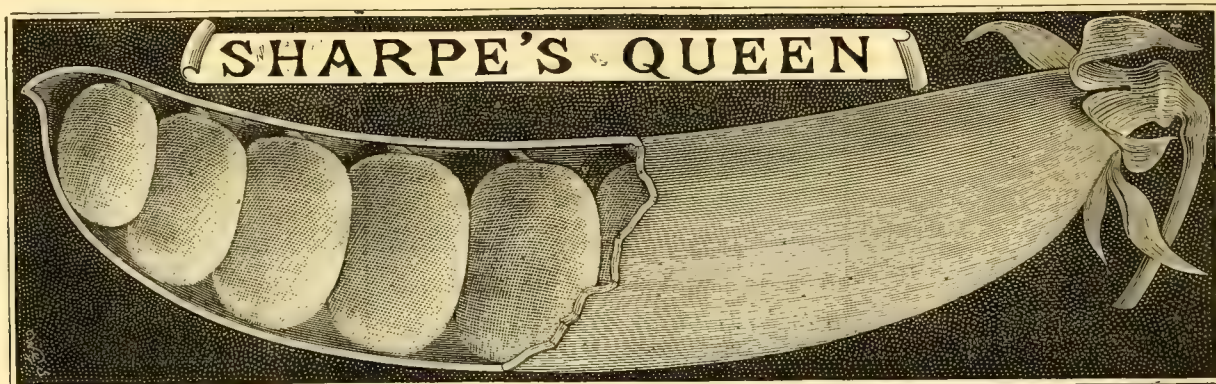
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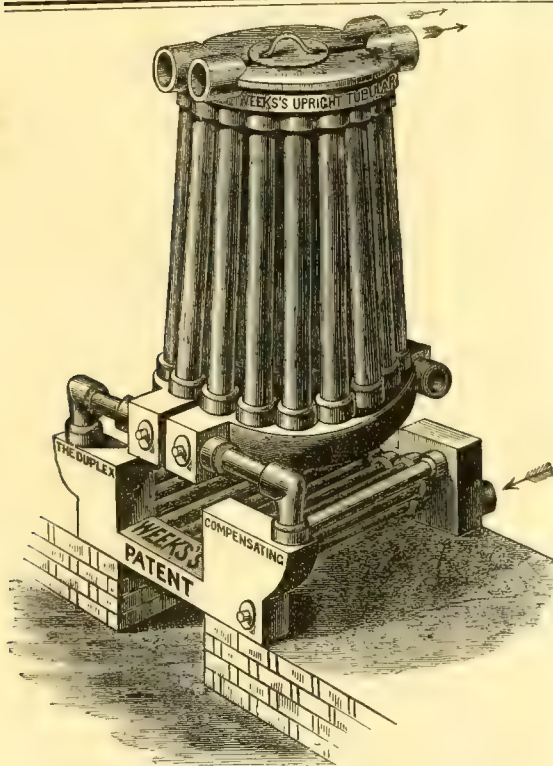
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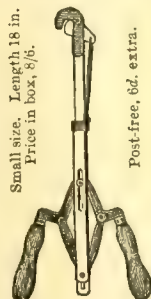
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North Row, Covent Garden, W.C., are OPEN TO DISPOSE of any quantity of MUSCATS and BLACK GRAPES, TOMATOS, CUCUMBERS, FRENCH BEANS, STRAWBERRIES, CHOICE FLOWERS, &c. Highest Market Prices obtained. Account Sales daily; cheques weekly, or as preferred by Sender. Baskets and Labels supplied. References given.

MESSRS. GREGORY and EVANS,

NURSERYMEN, Sidcup, and 285, 286, 287, 288, Flower Market, Covent Garden, London, W.C., are open to RECEIVE CONSIGNMENTS of Choice CUT FLOWERS in any quantity for their Commission Department. Boxes and Labels supplied. Telegraph Address—"COMMISSION, SIDCUP."

WANTED, CUT FLOWERS and CHOICE

GRAPES.—The West of England Cut Flower and Fruit Supply are now in a position to give the highest possible prices for Choice Cut Flowers and Grapes.—The West of England Cut Flower and Fruit Supply, 5 and 6, Barrs Street, Bristol.

WANTED, JERUSALEM ARTICHOKEs.

—State quantity, with lowest price per ton for cash, to D., Gardeners' Chronicle, 41, Wellington Street, Strand, W.C.

CARTER'S VADE MECUM for 1889

is Now Ready, and has been posted to Messrs. CARTER'S Customers. Price ONE SHILLING (post-free) to unknown Correspondents. It contains 7 elegant Coloured Illustrations, and will be found a most thorough Book of Reference by all who desire to cultivate successfully the choicest Vegetables and the prettiest Flowers.

JAMES CARTER and CO., The Queen's Seed-men by Royal Warrant, 237 and 238, HIGH HOLBORN, W.C.

LILIIUM AURATUM.—

THE GOLDEN-RAYED LILY OF JAPAN can now be purchased in Cases containing 50 fine Bulbs, just as received from the Japanese Bulb Farms, unopened and unexamined, at 25s. per Case; sent Free to any Railway Station in England and Wales on receipt of Postal Order for 23s. 9d. Cases containing 100 fine Bulbs, price 40s. Fine and sound Bulbs per dozen, 4s., 6s., 12s., and 18s. Mammoth Bulbs, 2s. 6d. and 3s. 6d. each. All sent packing and carriage free.

CARTER'S, Royal Seed-men by Sealed Warrants, 237 and 238, HIGH HOLBORN, W.C.

Full of Useful Information No Charge.

BARR'S 1889 SEED CATALOGUE, now ready. In addition to the usual valuable information, will be found special remarks on the Culture of the TOMATO and TOBACCO as INDUSTRIES, with a Special LIST of HIGH-CLASS POTATOS, handsome in form, pleasant in flavour, and bountiful croppers. CATALOGUE free on application to BARR and SON, King Street, Covent Garden, W.C.

ENGLISH YEWS, 3, 4, 5, and 6 feet.

BOX, Green, 3, 4, 5, and 6 feet.

Variegated, 3, 4, 5, and 6 feet.

PINUS AUSTRIACA, 3, 4, 5, and 6 feet.

All well furnished, and finely rooted. Many thousands. ANTHONY WATERER, Knap Hill Nursery, Woking, Surrey.

To the Trade.

COOPER TABER and CO. (Limited) have Posted their General Wholesale CATALOGUE to all their Customers. If not received another Copy will be sent on application.

90, Southwark Street, London, S.E.

Palms, Healthy, in Quantity.

WICETON, Putney, S.W., has a very fine

Stock of the above to offer in all sizes; also a few fine extra large fruiting PEACH TREES, &c.

129 and 130, Flower Market Covent Garden, W.C.

TREES and SHRUBS suitable for Towns and

Smoky Districts. CATALOGUE free on application.—RICHARD SMITH and CO., Nurserymen and Seed Merchants, Worcester.

STRAWBERRY PLANTS, in small pots.

Splendid stuff of all best kinds, and true to name. Price List on application.

FRANCIS R. KINGHORN, Nurseryman, Richmond, Surrey.

ANTHRACITE.

Best quality. Horticultural and general purposes. HOCKADAY and CO., Colliery Proprietors, LYDNEY.

CHRYSANTHEMUM CULTURE.

Standen's Manure, admitted by growers to be unrivalled for this purpose; in tins, 1s., 2s. 6d., 5s. 6d., and 10s. 6d. each.

Sold by all Seedsmen.

SULPHIDE of POTASSIUM (Harris).—A

certain cure for Mildew on Plants, Red Spider, Aphis, &c. Enough to make 32 gallons of solution, free for 12. 3d. The only kind to use is "Harris's specially prepared Sulphide of Potassium." Sole Manufacturers—

PHILIP HARRIS and CO. (Limited), 9, Bull Ring, Birmingham.

THOMSON'S IMPROVED VINE and PLANT

MANURE.—This valuable Manure is made only by us. Every bag and tin has our name on it. To be had of all Nursery and Seedsmen, and direct from us. 1 cwt. and over carriage paid. London Agent—Mr. GEORGE, 10, Victoria Road, Putney.

WM. THOMSON and SONS, Clovefords, Galashiels, N.B.

1,100,000 GARDEN POTS, 3½ in. diam.,

in stock, ready for immediate delivery; carriage and breakage free on £10 orders; half carriage on £5. Acknowledged by the trade to be the best pots manufactured. Largest Stock and Largest Manufacturers in United Kingdom. RICHARD SANKEY and SON, Balwell Potteries, Nottingham.

SALES BY AUCTION.

Wednesday and Saturday Next.

FIRST-CLASS NAMED DWARF ROSES, from France; Choice Named Pyramid and Dwarf-trained FRUIT TREES; BORDER PLANTS in great variety. Several hundred Lots of BULBS, from Holland, for present planting, comprising Hyacinths, Tulips, Crocuses, Narcissus, Snowdrops, &c. Also Lilies, Lily of the Valley in Clumps and Crowns, Spirea japonica, &c.

MR. J. C. STEVENS will SELL the above by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY and SATURDAY, January 2 and 5, at half-past 12 o'clock precisely each day.

On view mornings of Sale, and Catalogues had.

Thursday Next.—(Sale No. 7838.)

10,000 GRAND BULBS of LILIUM AURATUM (some in cases as received), L. Krameri, L. longiflorum, just received from Japan in the finest possible condition. Also splendid Berlin LILY of the VALLEY, Crowns; LILY of the VALLEY, Clumps; First-class Double South African TUBEROSES and AMARYLLIS, fine Clumps of HELLEBORUS NIGER, L. HARRISII, &c., and a general assortment of Dutch BULBS for present planting.

MR. J. C. STEVENS will SELL the above by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, January 3, at half-past 12 o'clock precisely.

On view morning of Sale, and Catalogues had.

Special Sale of Orchids in Flower and Bud.

MR. J. C. STEVENS begs to announce that his NEXT SPECIAL SALE of ORCHIDS in FLOWER and BUD, will take place at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, January 17, at half-past 12 o'clock precisely, and he will be glad if Gentlemen desirous of Entering Plants for this Sale, will SEND LIST AS SOON AS POSSIBLE.

Tuesday Next.

Important to the Trade and Private Buyers.

SALE of NURSERY STOCK and GREENHOUSE PLANTS, from Sample.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on TUESDAY NEXT, January 1, at half-past 12 o'clock precisely, large quantities of NURSERY STOCK and GREENHOUSE PLANTS from Sample.

Samples will be on view the morning of Sale. Catalogues on application to the Auctioneers, 67 and 68, Cheapside, E.C.

Tuesday Next.

Important to the Trade and Private Buyers.

SALE of NURSERY STOCK and GREENHOUSE PLANTS from Sample.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on TUESDAY NEXT, January 1, at half-past 12 o'clock precisely, large quantities of NURSERY STOCK from Sample, including the following:—

10,000 Dwarf Roses	5,000 Currants of sorts
5,000 Asparagus	5,000 Gooseberries
1,000 Seakale	5,000 Raspberries
3,000 Carnations	10,000 Pinus austriaca
1,000 Dwarf-trained and Standard Fruit Trees	3,000 Pansies
Thousands of Forest Trees	100,000 Quick
2,000 Lantana borbonica	Large collection of herbaceous plants

Samples will be on view the morning of Sale, and Catalogues forwarded on application.

Wednesday Next.

10,000 LILIUM AURATUM, splendid bulbs, just received from Japan; English grown LILIES, Japanese IRIS, LILY OF THE VALLEY, SPIREAS, AZALEAS, and CAMELLIAS from Belgium, STOVE and GREENHOUSE PLANTS, various hardy BULBS, ROSES, &c.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on WEDNESDAY NEXT, January 2, 1889, at half-past 12 o'clock precisely.

On view morning of Sale, and Catalogues had.

Thursday Next.—Dutch Bulbs.

The SURPLUS STOCK of a London Seedsmen, without reserve.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on THURSDAY NEXT, January 3, at half-past 12 o'clock precisely, a large quantity of HYACINTHS, TULIPS, CROCUS, NARCISSUS, and other DUTCH BULBS, of the best quality, being the surplus stock of a London Seedsmen; also various other BULBS.

On view morning of Sale, and Catalogues had.

Friday Next.

CATTLEYA TRIANÆ
EPIDENDRUM AMABILE,
CATTLEYA AMETHYSTOGLOSSA, and
CATTLEYA MAXIMA PERUVIENSIS.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. F. Sander to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY NEXT, January 4, at half-past 12 o'clock precisely, a splendid importation of CATTLEYA TRIANÆ, with fresh green leaves and dormant eyes; also a grand lot of EPIDENDRUM AMABILE, seen in bloom by the Collector, who states that finer varieties were never seen; also CATTLEYA AMETHYSTOGLOSSA, CATTLEYA MAXIMA PERUVIENSIS, and many other useful and choice ORCHIDS.

On view morning of Sale, and Catalogues had.

Preliminary Notice.

THE BARVINS PARK COLLECTION OF ORCHIDS.—Unreserved Sale of the whole of this extensive Collection of Established ORCHIDS, by order of the Proprietor, in consequence of his leaving the neighbourhood and selling the Estate. The collection includes a large number of Odontoglossum Alexandræ, all unfowered, principally selected from Messrs. Shuttleworth, Carder & Co.'s importation of the broad-petal PACHO varieties. Seven days' Sale.

MESSRS. PROTHEROE AND MORRIS beg to announce that they have been favoured with instructions to SELL by PUBLIC AUCTION, at their Rooms, in JANUARY and FEBRUARY NEXT, the whole of this extensive COLLECTION OF ORCHIDS.

Full particulars will appear in due course.

To Market Gardeners, Florists, Nurserymen, &c.
HAMPTON-ON-THAMES.

FOR SALE, choice FREEHOLD LAND, in Acre Plots, suitable for above. Rich Garden Soil with gravel and sand sub-soil. The land is considered by the Trade the finest near London for Grapes and all other Market Products. Apply, SECRETARY, Estates Investment and Villa Farm Company, Estate Office, Tangley Park, Hampton-on-Thames.

South of England.

LARGE GARDEN, 20 Acres, with Twenty Greenhouses and Vineries. £7000 has been spent on the property. Seven years' lease. Two Cottages inclusive. £150 a year. ELDRIDGE, Portsmouth.

SEAKALE for Forcing.—Superior, selected, large Crowns, 80s. per 1000; under 500, 9s. per 100. A remittance with all orders.—ALFRED ATWOOD, Grower, 14, Lavender Terrace, Battersea, S.W.

SMALL SHRUBS and CONIFERÆ.

Araucaria imbricata, 10 to 12 inches, 50s. per 100; Abies Douglasii, 1-yr., 4s. per 100; A. orientalis, 1-yr., 30s. per 1000; American Arbor-vitæ, 1½ foot, 60s. per 1000; Sweet Bay, 1-yr., 30s. per 1000; Scarlet Chestnut, 1-yr., 6s. per 100; Cupressus macrocarpa, 1-yr., 30s. per 1000; Lawsonii, 18 inches, 60s. per 1000; erecta viridis, 4 inches, 30s. per 1000; do., 1 foot, 12s. per 100; stricta, 1 to 1½ foot, 12s. per 100; Allium, 1 foot, 14s. per 100; Cedrus atlantica, 1-yr., 1-yr. transplanted, 10s. per 100; C. Decidua, 1-yr., 7s. per 100; Escallonia macrocarpa, pots, 14s. per 100; Laurel (common), 2-yr., 20s. per 1000; Portugal Laurel, 1-yr. transplanted, 20s. per 1000; Colchic Laurel, 1-yr., 25s. per 1000; Laurel rotundifolia, 1-yr., 25s. per 1000; Limes, 1-yr. transplanted, 16s. per 1000; Pinus Cembra, 3-yr., extra, 16s. per 1000; P. insignis, 1-yr., 3s. 6d. per 100; P. excelsa, 1-yr., 4s. per 100; P. Nordmanniana, 1-yr., 30s. per 1000; P. Jeffreyi, 1-yr., 8s. per 100; P. Mastersiana, 1-yr., 10s. per 100; P. Strobus, 2-yr., 2s. per 100; Oak, Evergreen, 1-yr., 30s. per 1000; Scarlet Oak, 1-yr., 3s. per 100; Privet ovalifolium, 8 to 9 inches, 10s. per 1000; Retinospora plumosa, 10 to 12 inches, 10s. per 100; R. squarrosa, 8 to 9 inches, 8s. per 100; do., 1 foot, 12s. per 100. Thuja Lobbi, 8 to 10 inches, 30s. per 1000; do., 15 inches, 45s. per 1000; T. dolabrata, 8 to 9 inches, 80s. per 1000; do., 10 inches, fine, 12s. per 100. T. Ellwangeriana, 6 to 8 inches, 6s. per 100; Veronica Traversii, 6 to 8 inches, fine, 6s. per 100; English Yew, 1-yr., 1-yr. transplanted, 20s. per 1000; do., 8 to 10 inches, 7s. per 100. Irish Yew, 6 to 9 inches, 10s. per 100.

GARLIES MITCHELL, Nurseryman, Stranraer.

Lilium auratum.

HURST AND SON have received direct from Japan, a large consignment of the above in excellent condition, and will quote low prices on application. Seed Warehouse, 152, Houndsditch, London, E.

TREES and SHRUBS for the Sea Coast. CATALOGUE free on application.—RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

DICKSON'S IMPROVED MUSHROOM SPAWN, most superior, now reduced to 5s. per bushel of 14 cakes. Circular with Cultural Notes and List of Testimonials post-free on application. DICKSONS (Limited), The Royal Seed Warehouse, CHESTER.

CHOICE GERMAN

FLOWER and VEGETABLE SEEDS.

CATALOGUES free on application. FRED. ROEMER, Seed Grower, Quedlinburg, Germany.

ANDRE LEROY'S Nurseries at Angers, France, the largest and richest in Europe in Collections of FRUIT and ORNAMENTAL TREES, SHRUBS, CAMELLIAS, ROSES, SEEDLINGS, STOCK FRUIT TREES, &c. CATALOGUES sent on application. Freight from Angers to London is very moderate. Medal of Honour at the Universal Exhibition at Paris, 1875. Orders must be addressed to Messrs. WATSON and SCULL, 90, Lower Thames Street, London, E.C.

TREES and SHRUBS for Game-covers and Underwood. Intending planters should send for CATALOGUE, free on application.—RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

TEA ROSES } A grand stock, in 5-in. pots, 12s. & 18s. doz.
A grand stock, in 7-in. pots, 21s. & 30s. doz.

GRAPE VINES } Black Hamburgh and other varieties.
Suitable for fruiting in pots, 10s. 6d. each
Suitable for planting vineries, 5s. and 7s. 6d. each.

FERNS } A fine stock, in 5-inch pots, 12s. per dozen.
A fine stock, in small pots, 4s. per dozen.

Catalogues on application.

THE LIVERPOOL HORTICULTURAL COMPANY (JOHN COWAN), LIMITED, THE VINEYARD AND NURSERIES, GARSTON, NEAR LIVERPOOL.

TO BE SOLD CHEAP, about 8000 nice stools of RHUBARB, fit for Forcing, the remaining Stock of the late Mr. Martin. For particulars, &c., apply to T. YOUNG, New Villas, Flodden Road, Camberwell, S.E.

BEGONIAS a SPECIALTY.—Awarded Four

Gold Medals. Seed saved from Prize Plants. In beautifully illustrated Packets, choice mixed. Single or Double varieties, 1s., 2s. 6d., and 5s. per packet. Collections—Single, 12 named varieties, separate, 5s. 6d.; 6 ditto. 3s. Tubers, Named Singles, from 12s. to 42s. per doz.; Unnamed Seedlings, 12s. to 21s. per doz.; Bedding, choicest, 6s. and 9s. per doz.; choicest Named Doubles, from 42s. per doz.; Unnamed, very choice, 24s. and 30s. per doz.; choicest Mixed, 18s. per doz. Order direct from us, to procure our splendid strain. CATALOGUES gratis.

JOHN LAING AND SONS, Begonia Growers, Forest Hill, S.E.

To the Trade.

H. AND F. SHARPE'S Wholesale CATALOGUE OF VEGETABLE SEEDS for 1889 has been forwarded to their customers. If those who have not received it will kindly inform them another one shall be sent. Seed Growing Establishment, Wisbech.

ROBERT NEAL, The Nurseries, Trinity

Road, Wandsworth, S.W., begs to call the attention of Gentlemen and others Planting, to his large and varied stock of FOREST and ORNAMENTAL TREES, also FRUIT TREES, SHRUBS, ROSES, and CLIMBING PLANTS, &c., which are in fine condition for transplanting, and being grown near London, are especially adapted for Town and Suburban Planting. Also extra-fine SEAKALE, and RHUBARB for Forcing. All goods delivered free by own vans within a radius of 6 miles. CATALOGUES free on application, and a personal inspection of the stock solicited.

FOR SALE, a fine lot of healthy Specimen

AZALEAS, covered with Flower-buds; also fine Specimens of CLEODENDRONS, ANTHURUM SCHERZERIANUM, Specimen CROTONS, FERNS, &c., all in the best condition.—For price and particulars, apply to G. H. COLE, The Gardens, Woodbank, Dumfries.

ABIES AMABILIS, True, and other North

American Seeds and Plants collected personally by WILLIAM STEWART, 28, Esplanade, Greenock, Scotland. Price LIST and Samples on application.

To those about to Plant.

A DESCRIPTIVE CATALOGUE, comprising fine Transplanted Fruit Trees, Roses, Hardy Climbers, Rhododendrons, Conifers, Ornamental and Flowering Trees and Shrubs, Forest Trees, &c., in large varieties and quantities, adapted to all soils and climates. Sent free on application to GEO. JACKMAN AND SON, Woking Nursery, Surrey.

CHRYSANTHEMUMS.—600 best sorts, true

to name, strong Cuttings now ready, 1s. 6d. per doz., 10s. per 100. Many of the best French and Silver Cups are taken by my customers. For price of new sorts, see Catalogue (2 stamps), of WM. ETHERINGTON, Chrysanthemum Grower, Swanscombe, Kent.

To the Trade.

NUTTING AND SONS' Wholesale CATALOGUE of Garden and Flower Seeds for 1889 has been posted to all their Customers. If not duly received please inform them, and another shall be sent. Seed Warehouses, 106, Southwark Street, London, E.C.

LILY OF THE VALLEY, fine Forcing

Crowns or Clumps; SPIREA JAPONICA, DIELYTRA SPECTABILIS, HYDRANGEA PANCULATA GRANDIFLORA, &c. Price and samples on application. WILLIAM DENMAN, 7, Catherine Street, Covent Garden, W.C.

CREEPERS FOR WALLS.—By planting

what is suitable, an ugly object may easily be made beautiful. Most being in pots, can be sent and put out at any time. Descriptive LIST and advice Free.—RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

To the Trade.

SEED POTATOS.

H. AND F. SHARPE'S Special Priced LIST of SEED POTATOS has been sent out. It comprises all the finest varieties in cultivation, including several novelties. The quality is very fine, and the prices will be found extremely low.

Seed Growing Establishment Wisbech.

IF YOU CANNOT GET FRUIT TREES

TRUE TO NAME,

Write to GEORGE BUNYARD AND CO.

IF YOU WANT ANY CHOICE SORTS that

your Local Firms cannot Supply,

Write to GEORGE BUNYARD AND CO.

FOR FRUIT TREES by the Dozen, Hundred,

or Thousand,

Write to GEORGE BUNYARD AND CO.

SEND INTO KENT, and get the FINEST

TREES—No Starvings, No Blight—at

GEORGE BUNYARD AND CO'S.

ILLUSTRATED CATALOGUE OF FRUIT

TREES, 800 Kinds, Six Stamps.

SKELTON LIST—Names and Prices—also all Outdoor

Stock, Gratis.

ROSE LIST, CONIFER and SHRUB LISTS, Free.

One Hundred Acres Nursery. Liberal terms.

GEORGE BUNYARD AND CO.,

POMOLOGISTS and GENERAL NURSERYMEN,

MAIDSTONE, KENT.

80,000 CLEMATIS, in Pots, of all the finest Double and Single Varieties (some of the flowers of which become 10 inches across, and are of every shade, from pure white to the darkest purple), for climbing and bedding, from 12s. to 24s. per dozen, strong plants; extra strong plants, repotted into 5½-inch pots, 2s. 6d. each; Beauty of Worcester, a magnificent purple, excellent for bedding, recently sent out by us, reduced price 2s. 6d. each. Descriptive LIST on application.—**RICHARD SMITH AND CO.**, Nurserymen and Seed Merchants, Worcester.

FOREST TREES.—Alder, 2 to 2½ feet, 16s. per 1000; Ash, 1½ to 2 feet, 12s. per 1000; 2 to 3 feet, 16s. per 1000; 3 to 4 feet, 20s. per 1000; Beech, 1½ to 2 feet, 15s. per 1000; 2 to 2½ feet, 18s. per 1000; 2½ to 3½ feet, 22s. per 1000. Spanish Chestnut, 1½ to 2½ feet, 20s. per 1000; Bourtree, 2 feet, 25s. per 1000; Elm, 3 to 4 feet, 18s. per 1000; 4 to 5 feet, 25s. per 1000. English Elm, 4 to 5 feet, 40s. per 1000. Larch, 1½ to 2 feet, 16s. per 1000; 2 to 2½ feet, 28s. per 1000. Scotch Fir, 1½ to 2 feet, 12s. per 1000; 2 to 2½ feet, 16s. per 1000; 3 feet, 20s. per 1000. Spruce Fir, 1 to 1½ feet, 10s. per 1000; 1½ to 2 feet, 12s. per 1000; 2 to 2½ feet, 16s. per 1000. Silver Fir, 10 to 15 inches, 18s. per 1000; 1 to 1½ foot, 20s. per 1000. Pinus austriaca, 1 to 1½ foot, 15s. per 1000; 1½ to 2 feet, 18s. per 1000. Sloe or Blackthorn, 2 to 3 feet, 20s. per 1000; Sycamore, 1 to 1½ foot, 12s. per 1000; 2 to 2½ feet, 16s. per 1000; 6 to 7 feet, 6s. per 100.

GARLIES MITCHELL, Nurseryman, Stranraer.

CARNATION "GLOIRE DE NANCY."—We are sending out for the fourth season our true strain of this the grandest White Carnation in cultivation, quite nardy, and for pot culture for cut bloom it has no equal. Robust and free bloomer. 41 per 100, 11s. for 50, 6s. for 25, good rooted layers. We have a fine stock of **GARDENIAS**, the best sorts in cultivation, from 1s. to 40s. each, Cash with Order.

E. COLLINS AND SONS, Cumberland Park Nursery, Willesden Junction.

EVERGREEN HEDGES. EVERGREEN HEDGES.

YEW, English, 1½ to 2 feet, 30s. per 100; 2 to 2½ feet, 45s. per 100; 2½ to 3 feet, 65s. per 100.

HOLLIES, Green, 2 to 2½ feet, 40s. per 100; 2½ to 3 feet, 60s. per 100.

LAURELS, Common, 1½ to 2 feet, 12s. per 100; 2 to 3 feet, 15s. per 100; 2½ to 3½ feet, 20s. per 100.

THUJA LOBBII, 2½ to 3 feet, 30s. to 40s. per 100.

We hold immense stocks of the above, all bushy and well rooted Plants.

Special offer for Covert Plants, &c., free on application. **JOHN PERKINS AND SON**, The Old Established Nursery and Seed Business, 52, Market Square, Northampton.

TELEGRAPHIC ADDRESS—"QUICK," NORTHAMPTON.

CHRYSANTHEMUMS to and from all parts of the Globe. By far the best collection of new and old varieties in commerce. Descriptive Catalogue with Cultural Directions by E. Molyneux and C. Orchard. Acknowledged in Europe and America as the best Descriptive Catalogue. Price 6d.; free to customers. Awarded 3 Medals and 20 First-class Certificates. I never exhibit for prizes in competition with gardeners or amateurs. Open to purchase new varieties of **Geraniums** or **Amateurs**.—**R. OWEN, F.N.C.S.**, Floral Nursery, Maidenhead.

Begonia Scharffii.

JOHN LAING AND SONS have great pleasure in offering plants of this, the finest species of the genus. (See *Gardeners' Chronicle*, page 870.) Price 5s. and 7s. 6d. each. The Nurseries, Forest Hill, S.E.

To the Trade.

VEGETABLE AND AGRICULTURAL SEEDS. **H. AND F. SHARPE** are now prepared to give **SPECIAL QUOTATIONS** for all the best kinds of **VEGETABLE AND FIELD SEEDS** grown this season from carefully selected stocks. The quality is very good, and the prices will be found advantageous to purchasers. Seed Growing Establishment, Wisbech.

NEW CHRYSANTHEMUM "STANSTEAD SURPRISE."

We have pleasure in offering this fine Japanese Seedling of our own raising. It is a rich rose crimson, with silvery reverse; immense flower and good keeper.

Figured in the *Journal of Horticulture* of November 8 last, and received a First-class Certificate from the National Chrysanthemum Society. Early orders solicited for February delivery as strong plants at 7s. 6d. each, 3 for 15s.

JOHN LAING AND SONS, Begonia Specialists and Nurserymen, Forest Hill, S.E.

100 Herbaceous and Alpine Plants for 25s. **RICHARD SMITH AND CO.'S** Selection as above contains a most interesting and valuable assortment of beautiful and Hardy Plants for the Border or Rock-work, which produce flowers and render the garden attractive all through the year. Descriptive CATALOGUE post-free for 6 stamps.—**RICHARD SMITH AND CO.**, Nurserymen and Seed Merchants, Worcester.

"BEACONSFIELD" YELLOW PRIMROSE. The large Irish Yellow variety. Trade price, 5s. per ounce. Retail, 6d. and 1s. per packet. **WM. BAYLOR HARTLAND, F.R.H.S.**, Seedsman, Cork.

PRIMULA OBCONICA.—The best market, and "all the year round" blooming plant in cultivation. Now is the time to sow. Seed Crop 1888. Per packet, 6d. and 1s. Large Market Growers Packets, 2s. 6d. Trade price on application.—**WM. BAYLOR HARTLAND, F.R.H.S.**, Seedsman, Cork.

100,000 HARDY HEATHS.—The present is a most suitable time for planting these beautiful plants, which can be supplied as follows:—
An assortment of 10 varieties, 16s. per 100.
" " 20 " 18s.
" " 30 " 20s.
" " 40 " 22s.

If less than fifty plants are ordered, price 3s. per dozen. Special quotation per 1000, and Descriptive CATALOGUE may be had free on application to **JAMES SMITH AND SONS**, Darley Dale Nurseries, near Matlock.

WHOLESALE SEED CATALOGUE for 1889.—We have now published our Catalogue of Vegetable and Flower Seeds, containing also all the best Novelties of the season. May be had on application. Any of our customers not having received one by post will oblige by letting us know, when another shall at once be posted. **WATKINS AND SIMPSON**, Seed and Bulb Merchants, Exeter Street, Strand, London, W.C.; Seed and Trial Grounds, Feltham and Twickenham, Middlesex.

ORCHIDS and PALMS

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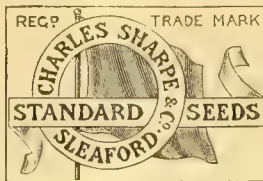
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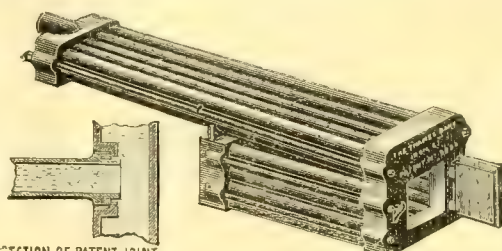
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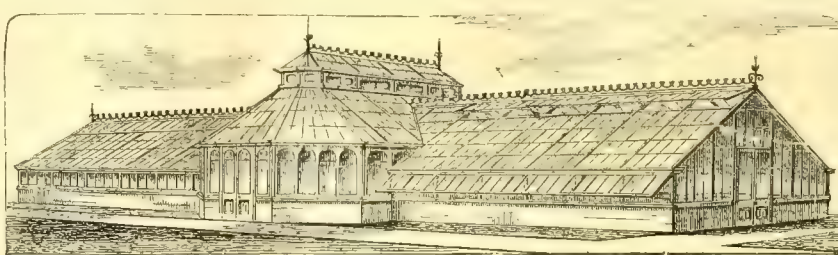
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37.	— " SANDERIANA, Rchb. f.	20 0 0	100 0 0		101.	— " TRICORNIS, Lindl.	15 0 0		
38.	— " spec. aff. M. FRACITFLEXA	8 0 0			102.	—TRICHOCENTRUM spec.—Flowers pale yellow; lip spotted with red	10 0 0		
39.	— " spec. aff. M. LEHMANNI.—Flowers 16—18 cm. (6—7 inches) across; sepals white, at the apex rose; petals white, streaked with rose; lip rose, streaked with purple, the inside yellow. This is the rarest and most beautiful of the genus	30 0 0			103.	— " spec. nov.	30 0 0		
40.	— " spec. Flowers as large as the pre- ceding, but very distinct. Very rare	50 0 0			104.	— " TIGRINUM	8 0 0		
41.	—MESOSPIDIUM SANGUINEUM, Rchb. f.	6 0 0	35 0 0		105.	—TRICHOPIA FRAGRANS, Rchb. f.	8 0 0	50 0 0	
42.	— " ROSEUM, Rchb. f.	8 0 0	40 0 0		106.	— " LAXA, Rchb. f.	6 0 0	40 0 0	
43.	— " VULCANICUM, Rchb. f.	10 0 0	60 0 0		107.	—UROPELUM LINDENI, Lindl.	10 0 0		
44.	—ODONTOGLOSSUM ANGUSTATUM, Lindl.	8 0 0	50 0 0		108.	—ZYGOPETALUM (BOLLEA) CELESTE, Rchb. f.	15 0 0		
45.	— " CIRRHOSUM, Lindl.	6 0 0	40 0 0		109.	— " (PESCATOREA) DAYANUM, Rchb. f.	15 0 0		
46.	— " CLAVICEPS, Rchb. f.	10 0 0	50 0 0		110.	— " KLABOCHORUM, Rchb. f.	15 0 0		
47.	— " CRISPUM, Lindl.	8 0 0	50 0 0		111.	— " LEHMANNI, Rchb. f.	20 0 0		
48.	— " var. LEHMANNI, Rchb. f.	6 0 0	40 0 0		112.	— " ROEZLI (EUGLOSSA), Rchb. f.	15 0 0		
49.	— " CRISTATELLUM, Rchb. f.	9 0 0	60 0 0		113.	— " (KEFERSTEINIA) GRAMINEUM, Rchb. f.	8 0 0		
50.	— " EDUARDI, Rchb. f.	8 0 0	50 0 0		114.	— " spec.	8 0 0		
51.	— " EPIDENDROIDES, H. B. Kth.	20 0 0	100 0 0		115.	— " (WARSCEWICZELLA) VELA- TUM, Rchb. f.	10 0 0		
52.	— " HALLI, Lindl.	7 0 0	45 0 0		116.	— " spec.	10 0 0		
53.	— " var. XANTHOGLOSSUM, Rchb. f.	7 0 0	45 0 0		117.	— " (CHONDRORHYNCHA) CHESTER- TONI, Rchb. f.	15 0 0		
54.	— " HARRYANUM, Rchb. f.	15 0 0	100 0 0		118.	—EUCHARIS GRANDIFLORA, Planch. (MASTERSI, Bak.)	2 0 0	15 0 0	
55.	— " LEHMANNI, Rchb. f.	25 0 0			119.	— " SANDERIANA, Bak.	2 0 0	15 0 0	
56.	— " LUTEO-PURPUREUM, Lindl.	8 0 0	55 0 0		120.	—HIPPEASTRUM (AMARYLLIS) SOL- ANDREIFLORUM, Herb., var. ALBUM	7 0 0	50 0 0	
57.	— " var. Flowers smaller	6 0 0	40 0 0		121.	—PHLEDRANASSA CHLORACEA, Herb.	3 10 0	25 0 0	
58.	— " var. SCEPTRUM	6 0 0	40 0 0		122.	— " LEHMANNI, Rgl.	5 0 9	30 0 0	
59.	— " PARDINUM, Lindl.	7 0 0	50 0 0		123.	— " SCHIZANTHA, Bak.	2 0 0	15 0 0	
60.	— " POLYXANTHUM, Rchb. f.	8 0 0	55 0 0		124.	— " VENTRICOSA, Bak.	5 0 0		
61.	— " RAMOSISSIMUM, Lindl.	10 0 0	75 0 0		125.	—STENOMESSON AURANTIAECUM.	3 0 0	20 0 0	
62.	— " var. XANTHINUM	8 0 0	60 0 0						

CONDITIONS.—Prices are quoted in English Sterling, and where not otherwise stated, relate to plants collected from their natural habitat, delivered free of all charges at the port of shipment. From there Buyers take all risk and expense. The price per 1000 plants is charged on orders of 500 and upwards; that per 100 plants on orders from 50 and upwards. On orders of 2000 plants of the same species a reduction of 15 per cent. is allowed; while on less than 50 plants of the same species a higher rate of 50 per cent. is charged. The packing is executed under F. C. Lehmann's personal care, and the methods employed are those which an experience of over twelve years has proved to give the best results; but under no condition will he hold himself responsible for the state or condition of the plants on their arrival; and Consignments once shipped at the port are entirely at the risk and expense of the persons who have ordered them. To secure the arrival of the Plants in good condition, Consignments—if not expressly otherwise ordered—will be dispatched only when the Plants are in fit condition to travel; the months being January to April, and July to October, and as the communication in this country is defective and wearisome, and the months being few during which shipments can be made, orders should be sent in as early as possible, so as to allow ample time for their execution. The amount of the Orders will be covered by Bills of Exchange drawn on the issue of the Bills of Lading; amounts under £25 payable three days after sight; above that amount 60 days after sight. Payments may also be effected through Messrs. ROSING BROTHERS & CO., 10, Basinghall Street, London, E.C.



B.S. WILLIAMS

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IN

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FOR

1889.

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This new variety, which was raised at Hylands Park, is without doubt the finest Ageratum grown for bedding purposes. It blooms in masses from the time of planting out until it is cut down by the frost, and requires no pegging down, as it is only $\frac{1}{2}$ inches high; the trusses measure from 6 to 7 inches across. It is of a very effective and telling delicate blue colour.

Most valuable when propagated in pots in the autumn for early winter flowering. Its freedom in blooming is so pronounced that each pot is quite a ball of flower, and continues so to the middle of January.

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This magnificent variety is of very compact habit, with beautiful rosy-pink coloured flowers deepening to a fine carmine at the base. It is a tint of colour which is very marked and conspicuous, and will make addition to these popular plants.

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DANIEL'S MASTERPIECE.

We have in former years introduced some remarkably fine Cucumbers, but never had more pleasure than in introducing this one, as it is without doubt the handsomest Cucumber ever raised. The fruit are slightly spined, and of a rich emerald-green, 20 to 30 inches long. For colour, quality of flesh, symmetry of form, constitution, and prolificness, they are models of perfection—a grand exhibition fruit, and far surpasses most other kinds for market purposes. For many years the fortunate raiser has enjoyed the monopoly of this variety, his fruit taking a leading place in Covent Garden Market, bringing a much larger return than other kinds, and it was not until this last season that he could be induced to part with the stock, of which we have secured but a limited quantity. *Per pkt., 1/6 & 2/6.*

DANIELS BROS., Seed Growers, NORWICH.

As a Supplement to the GARDENERS' CHRONICLE

FOR

Next Week, January 5,
will be Published an Ink Photo of
THE GRAND CASCADE,
Wilhelmshöhe, near Cassell; also a
SHEET ALMANAC.

As a large EXTRA circulation of this Number is guaranteed, it will be a very valuable medium for Advertisements. Advertisers desirous of securing space in this Number are requested to communicate not later than DECEMBER 31, with the publisher, W. Richards, 41, Wellington Street, Strand



THE

Gardeners' Chronicle.

SATURDAY, DECEMBER 29, 1888.

ART AT CHRISTMASTIDE.

THE President of the Royal Academy, Sir Frederick Leighton, has lately been expounding his views on British art and Britain's want of art, to the National Art Congress, of which he is also the President. His address is at once eloquent and comprehensive. He earnestly appeals to his countrymen to assist him in placing beauty in its due place in the work and pleasure of the nation. While freely admitting that the National Gallery is rising steadily to a foremost place among the famous galleries of the world, he complains of our general incapacity to appreciate true excellence in art, or to take a vivid interest in beauty for its own sake. He alleges that we have no adequate sense of the value of art as an element of national greatness—little or no pride in the achievements of English artists. Even when we are not quite insensible to the charms of beauty, we do not detest sufficiently what is hideous and ignoble, nay, we have come to bear with much that is vulgar or commonplace with dull, indifferent acquiescence. The great want, in Sir Frederick's estimation, is the love of art as art, or of beauty for its own sake, and not the spasmodic or desultory pursuit of either which is our general characteristic. The standard of our art-education must be raised until all classes become endowed with the instinctive consciousness of what is beautiful and of what is ugly; and which will enable them to choose the former and reject the latter. Sir Frederick thinks that the perception of beauty and the appreciation of art are dormant rather than dead in our national character, and he would rouse them into action by the display of objects of beauty and by a thorough instruction in the principles of art.

Sir Frederick did not touch, as he might have done, on beauty in the garden, or he might perhaps

have drawn a more flattering picture. Our landscape gardening is, as a rule, better than our architecture, and our flower-beds are not so rankly abominable as once they were. A finer sense of gradation and admixture of colour, of light and shade, a keener appreciation of proportion, a fuller recognition of the beauty of appropriateness, are manifest within the last quarter of a century; while the productions of the florist, though often manifesting want of knowledge of what is fitting under some circumstances and inappropriate under others, may certainly be cited as proofs that the artistic faculty is not dead amongst gardeners.

But if we look to the "decorations" of our homes and churches at this season we have not much to boast of. Properly managed, the annual decoration of our churches and homes at Christmas and other festivals might form practical lessons in art and be made instrumental in quickening our perception of the beautiful. But if Sir Frederick Leighton is severe on our pictures, what would he not say were he to take a run through our churches at this season? And yet there is much in these that lends itself to treatment that might deserve the name of art. Statelyness and magnificence in the architecture, light, shade, and colour, frequently blended in the most artistic proportions; culture and taste in the decorators—all the social light and educational leading of the parish being, as a rule, engaged in the work—and yet the result is too often utter failure.

So complete is the failure that the majority of our readers will possibly think art degraded by having church or hall decorations named in connection with it. But why should not our church and home decorations be beautiful instead of ugly? Or if our efforts must end in ugliness, why not cease to attempt to decorate? By ceasing to do evil in this matter we should, at least, avoid the slaughter of tens of thousands of innocents in the shape of fine Hollies and other shrubs; but surely, with such rich stores of material as we have in these alone, it is possible to do better, and to add the charm of brilliancy and grace to the formal lines and cold hues of our stately architectural grandeur.

To this end a light touch and cultured taste are the chief desiderata. A mere frieze of natural forms, a sparse use of Holly berries or other colours, may result in artistic results of a high order—while the usual crush and mixture create a mere sense of bulk and effect the conversion of hundreds of churches at Christmastide into something akin to a woodman's shed, piled up with waggonloads of choice evergreens.

In the interest alike of Nature and of Art we protest against this wholesale vandalism and destruction. It leaves nothing better to show for it than hideous decorations, and cleared shrubberies and pleasure grounds. It has run into dimensions of waste and ugliness undreamt of by any but those who are expected to supply the decorative wants of towns or parishes in populous neighbourhoods in the provinces or near the metropolis. As reasonably purchase pictures by the yard or the mile—or assess their worth by the quantity of colour smeared on the canvas, as attempt to make decorations beautiful, or raise them to the dignity of art, by the mere quantity or magnitude of the materials employed.

MESSRS. HOOPER & CO. (LIMITED).—At a meeting of the Board of Directors of this company on the 10th inst., the usual interim dividend at the rate of 6 per cent. per annum was declared.

NEW OR NOTEWORTHY PLANTS.

CYPRIPEDIUM TAUTZIANUM VAR. LEPIDUM ×, n. var. *hyb.*

Mr. W. BULL has been so fortunate as to raise this lovely hybrid. The type was said to be very scarce, if not unique. I have the impression that Mr. Tautz showed me his plant stating it to be unique, with an amateur's proudest smile. Mr. W. Bull availed himself of *Cypripedium niveum* and *C. barbatum* Warneri. It is a most interesting fact that there are discrepancies not altogether dependent on individual differences. The odd sepal is much shorter, and totally lacks the green median nerves of the typical plant. There is nothing but a white ground, with mauve-purple nerves, and some very small blackish-purple spots. Petals as in the type, but apparently broader. The connate sepals form a very narrow body, whitish inside, not striped at all. The fine lip is nearly unlobed around the sac. The staminode is very dark, with two much darker black-purple eyes. Bract exceedingly short, scarcely surpassing the pedicel, just reaching the base of the long ferruginous ovary. Leaf pallid garlic-green, with numerous angulate dark green markings, as seen in the species of the affinity of *Cypripedium barbatum*.

The numerous riddles these hybrids propose may perhaps never be solved. The pollen parent has flowers of the chastest white with a little lemon-yellow. How can we now account for that elegant clean pure mauve-purple—the great charm of Mr. Tautz's *Cypripedium*? It is glorious even on the lip. And now compare the decidedly not very clear colours of *Cypripedium purpuratum*. Whence comes the lovely elegance of colour? *H. G. Rolfe, f.*

ALOE (EUALOE) LONGIFLORA, Baker, n. sp.*

This is a new large Aloe from the Cape, nearly allied to *A. vera* (barbadensis). It has been known for some time by Mr. F. W. Moore at Glasnevin, under the name of *A. pluridens*, Haw, which it most resembles in leaf, but now that it has flowered it proves to be a new and distinct species, remarkable for its long corolla and much exerted stamens.

Stem simple, $\frac{1}{2}$ foot long below the rosette of leaves; rosette of leaves spreading laxly over the uppermost root. Leaves spreading, ensiform, 15–18 inches long, $\frac{1}{2}$ inch broad, low down, tapering gradually to a long point, unspotted, glossy green, flat on the face in the lower half, armed with crowded spreading green deltoid marginal teeth, $\frac{1}{16}$ – $\frac{1}{8}$ inch long. Inflorescence a dense simple raceme, 6–8 inches long, longer than its peduncle, which has many empty bracts; bracts ovate, scarious, $\frac{1}{4}$ inch long; pedicels ascending, not longer than the bracts, articulated at the apex. Perianth cylindrical, primrose-yellow, $1\frac{1}{2}$ inch long; tube oblong, $\frac{1}{2}$ inch long; segments ligulate, connivent, tipped with green. Stamens finally $\frac{1}{2}$ inch longer than the perianth; anthers small, oblong, red. Style reaching to the tip of the anthers. *J. G. Baker.*

PLEUROTHALLIS PUNCTULATA, Rolfe, n. sp.

Very few species of *Pleurothallis* are considered of value from a cultivator's point of view, though there are some exceptions, and those who find room for a few of the more attractive species will probably consider the present one worthy of a place. Its flowers are an inch long, light yellow, copiously spotted with purple-brown, much in the way of a *Restrepia*, though they do not open so widely, and the pollen masses are two only, which unmistakeably fixes its position. The plant was sent to me by Messrs. James Veitch & Son, of Chelsea, and was received by them from New Grenada three years ago. It is a dwarf

* *Aloe (Eualoe) longiflora*, Baker, n. sp.—Caulis simpliciter elongato; foliis ensiformibus viridibus laxo rosulatis dentibus marginalibus crebris patulis deltoidibus haud castaneis; pedunculo brevi, racemo denso simplici; bracteis ovatis scariosis; pedicellis bracteis aequilongis; perianthio cylindrico luteo, sesquipedaliter, segmentis ligulatis apice viridi tinctis, tubo oblongo triplo longioribus; genitalibus longe exsertis.

plant, the stems about 2 inches high, slightly two-angled. Leaves lanceolate-oblong, subacute, suddenly narrowed below into a short petiole, fleshy, glaucous, at least below, $3\frac{1}{2}$ inches long by 1 inch broad. Peduncle solitary (always?) in axil of leaf, $2\frac{1}{2}$ inches long, from a narrower tubular spathe 1 inch long. Upper sepal lanceolate, oblong acute; lateral pair connate into a concave, oblong body, the minute acute points only free; colour as given above. Petals broadly lanceolate, acute, suffused with light rosy-purple, and spotted with purple-brown, $4\frac{1}{2}$ lines long. Lip 7 lines long, somewhat three-lobed, oblong, obtuse concave, not fleshy, shortly fimbriolate, papillose inside, with darker papillae on a maroon ground, with three blackish lines inside, which are light green outside; side lobes rounded, and folded round the column. Column wings a little undulate. It apparently belongs to Lindley's group *Aggregatae*, and although somewhat anomalous here, still I cannot find a better place for it. It is a very distinct species, and I cannot identify it with anything in this large genus. A curious feature in the piece sent is that the leaf has a sharp twist at the base, by which the flower hangs pendulous under the leaf. It may, however, be an accidental occurrence. *R. A. Rolfe.*

ONCIDIUM CRISPUM (Lodd.) SUBLÆVE, Rolfe, f. OCHRACEUM, n. var.

This is a very fine variety of the old *Oncidium crispum* sublæve, which is deficient in the lateral calli on the sides of the mid-carina. The flowers are ochre-brown in colour, and show no vestiges of that copper colour so predominant in Messrs. Loddiges plant. I never saw anything like it before. Two plants only were imported by Messrs. Shuttleworth, Carder & Co., 192, Park Road, Clapham, S.W. *H. G. Rolfe, f.*

RODRIGUEZIA FRAGRANS.

THIS Brazilian Orchid (fig. 106) is an old inmate of our Orchid-houses, and best known under the name of *Burlingtonia fragrans*. Its delightfully fragrant white flowers with yellow centres are grateful everywhere, but from the neat habit of the plant it is especially acceptable in collections where the space is limited and the house small. Like the rest of the genus, it thrives best and is safest in baskets suspended near the glass of the roof, and after the pseudobulbs are fully matured it should be carefully but sparingly watered, sufficient only being given to keep it plump and healthy. During its inactive season a place near a ventilator in the *Cattleya*-house in which it is growing, or in some other part of the house, where a good air not heavily charged with moisture assists in ripening its growth.

NEW DEVELOPMENTS IN HORTICULTURAL DECORATING.

GLASGOW may be truly designated the "happy hunting ground" of the horticultural decorator. Business men of all classes are calling in his aid to increase the attractions of their warehouses, shops, and offices. They are no longer content to rely on architectural art and decorations in paint and gildings, to embellish their splendid places of business and enhance the attractions of their wares, but are vieing with each other in rendering them fragrant with flowers, and rich in the elegance of exotic foliage plants. From the fish and game dealer, and the butter and cheese factor to the draper and house-decorator, all are taking the matter up with enthusiasm. Even certain of the churches demand the services of the horticultural decorator weekly, and the Athenæum, clubs, and libraries, as may be expected, are not behind in a movement of this kind. Hotels, restaurants, and other places of entertainment have for some time back done a little in the way of table decoration; but now they are extending their efforts to meet the growing taste of the public in

this direction. The cabins of the Anchor line of steamers are regularly and sumptuously decorated with plants for each voyage, and the *Columbia*, so well known to tourists, has adopted the idea in her cabins.

newspapers of the city have their offices decorated with plants, and are even contemplating introducing them into the compositors' rooms as a relief to the tedium of their occupation.

delightful movement that pleases every one, from the warehouseman to his customers, and even the listless loungeur, who casts a passing glance on his windows, is arrested and interested with the pleasing effect produced by the association of real flowers and foliage with every description of merchandise.

The movement has been initiated by Messrs. J. & R. Thyne, nurserymen, seedsmen, and florists, of St. Vincent Street, Glasgow, who have long been favourably known as specialists in horticultural decoration. They have long endeavoured to interest business men in the matter of decorating their business premises, and have succeeded at last in getting them to perceive its advantages. The system is carried out on the contract principle by the month or the year. The plants are at the risk of the contractors. They are placed, watered, cleaned, and otherwise attended to by their own staff; and so large an amount of stock is beyond their control in the premises of others, that they have recently taken the prudent measure of insuring against the contingency of fire.

Their nursery at Kelvinside, near the Botanic Gardens, is wholly composed of glasshouses, adapted specially to plant growing. To a large extent the stock consists of Palms, Dracænas, Ferns, Orchids, Asparagus, Bouvardias—in short, every class of plants adapted to the decorative florist's art, which is their specialty. There is also a large and varied stock of plants grown to meet the general requirements of their customers and the public. Good cultivation is a feature of the place in every department, and taking into account the wear and tear inflicted on the established stock of the decorative sorts, the absence of cripples and maimed plants is remarkable.

THE HERBACEOUS BORDER.

CHOICE OF SUBJECTS.

In examining the original list supplied by Mr. Horsefield (p. 510), it will be observed that the front row of plants would be nearly bare of flowers for nearly nine months of the year, there being two July flowering plants in the Campanulas, and the *Dracocephalum* in the same month, or sometimes in August; the *Hellebores* flowering next in point of time—viz., in December.

Such gaps in the season of bloom as these are not likely to suit many persons, especially as they occur at a time when the garden should be the gayest. In my front row list, on the contrary, it will be found that a variety of showy plants will be in flower from the first week in December to the end of August without any break, the *Violas* continuing even longer than that, if not required for stock; and moreover, every plant named is as easily grown as the *Snowdrop*, which comes first on the list.

It is doubtful if such weedy subjects as *Tussilaginis* are fit companions for *Gentiana verna*, *Hepaticas*, or *Veronica repens* [reptans]. The height assigned to *Galegas* and *Iris sibirica* scarcely accords with their height as grown here, and which is much greater than that given. It is a common occurrence here to find *Iris sibirica* growing to a height of 4 feet when established and in flower.

In reference to *Onosma tauricum*, it is a Boragewort of great beauty, and very fragrant, but the plant is not "miffy" when it is not coddled in a frame, or subjected to damp in the winter-time, and few plants are more hardy. The plant, if grown in too rich a soil, will be apt to rot off at the same season of the year. I have some potsful of it that have stood out unprotected for three successive winters, and which have not even been plunged in any protecting material. These flower well annually. When planted out the *Onosma* requires a sandy loam and the drainage should be good; it may be propagated with perfect ease, and a few should be raised annually, so that any losses may at once be made good. The right place for *Gentiana verna* is not the herbaceous border, but the rock garden, where a cool, moist position ought to be



FIG. 106.—*RODRIGUEZIA FRAGRANS*: FLOWERS WHITE WITH YELLOW CENTRES. (SEE P. 756.)

Certain of the banks also have groups of foliage plants or specimens of Palms and Dracænas displayed in their handsome halls and vestibules, and last, but not least significant, two of the leading

Enough has been said, I think, to justify the opening assertion. I am not aware that in any other city in the kingdom so much interest is taken as in Glasgow in horticultural decoration. It is a healthy and

afforded it, employing a loamy soil to plant it in. The *Veratrum* mentioned in Mr. Horsefield's note are better suited for the botanical garden, because of the dinginess of their flowers, and although their broadly ovate foliage is handsome, and for this reason some semi-wild place is the best one for them. The *Tritomas*, *Telekias*, *Bupthalmums*, *Bocconia cordata*, *Centaurea macrocephala*, possess ornamental foliage, and are much superior in flower to the *Veratrum*s. *Aster grandiflorus*, as a rule, does not expand a flower-bud at all in one season in six, and therefore it is not a desirable plant for a flower border in any part of the country. The number of fine species and varieties of perennial plants suitable for a flower border is so great, that only those should be chosen, all inferior plants being discarded by the gardener. *E. Jenkins*.

PLANT NOTES.

GREENHOUSE RHODODENDRONS.

In the Rhododendron-house at the Royal Exotic Nursery an answer to the oft-repeated question, Where shall we go for flowers after the *Chrysanthemums* are over? is indicated by the great display of rich colour given by over 300 trusses on plants of Messrs. Veitch's *R. javanico-jasminiflorum* strain, which when grown in quantity is perpetual flowering. Especially beautiful are *R. Ophelia*, pink with yellow tinge; Lord Wolseley, Indian yellow with crimson anthers; *Thetis*, chrome-yellow with crimson anthers; *Star of India*, yellow; and *Souvenir de J. H. Mangles*, reddish-buff, a very large and finely formed flower.

BEGONIA WINTER GEM (B. SOCOTRANA X B. SCARLET TUBEROUS).

At Messrs. James Veitch & Sons' this vividly coloured new variety is in flower in many neat specimens covered with bright carmine-crimson flowers borne above their fresh-looking bright green leaves. It is the perfection of a winter flowering plant, and it will not be detracting from its merits to say that it is a worthy companion to the profuse flowering *B. John Heal*, a large batch of which brightens up the same house. Like *B. John Heal*, too, it bears all male flowers, which accounts for it lasting so long in bloom. Flowers of *B. Winter Gem* which opened on November 23 are still good. *J. O.B.*

RHODOCHITON VOLUBILE.

This is a very graceful and free-flowering climber for the cool-house; it climbs by means of its petioles and peduncles, which twist around suitable foreign bodies that it may chance to come into contact with. When this plant is in full vigour it would be difficult to find anything on the roof of a cool house to surpass it in beauty. The flowers hang in profusion from the slender stems like so many rose-coloured bells; from these the corolla rises, protruding beyond the very dark red calyx. Cuttings strike slowly but surely if placed in a cool house beneath a bell-glass, but as seeds are produced freely these afford the best means of propagating it. They flower so freely at times as apparently to completely exhaust themselves. Several plants have come under my observation which kept up a grand display for a long period, but gradually declined when no other reason than that stated could be assigned for their so doing. When they are required to cover a good space, they should be planted out into a compost of loam, leaf-mould and sand, in a well-drained border. No doubt it would do well in the summer planted out in warm situations. It is a Mexican plant, and was figured in the *Botanical Magazine*, t. 3367.

PENTAS CARNEA.

This, a charming low growing plant from South Africa, with flesh coloured flowers, and if these have been regularly picked off throughout the summer, and attention given to them as regards potting, &c., they will now be found very useful for cutting from.

They enjoy a light position in the cool part of the stove. Plants may be readily raised from seed, or from cuttings whenever obtainable. *F. Ross*.

THE APIARY.

WINTER TREATMENT OF BEES.

THE doctors of bee-keeping do not agree on this subject any more than doctors of medicine do on the maladies which afflict man. One says, keep them thoroughly warm, while another says they would do much better if they were colder. Some say, let the hives be turned towards the north during the winter, so that the sun may not tempt them out-of-doors; while another would turn them to the south in order that they might get a flight. Still another sage says that good luck, like the wise men, comes from the east. Some bury their hives in holes underground, while others desire theirs to be put in a loft nearer the skies. Who shall settle it? There seems to be little doubt that bees have done well under all these conditions. We are not one of those who think all men are liars, like the ancient king, but consider there is some other solution. We have repeatedly said, and reiterate it again, that a strong stock of bees can take care of itself, even as the donkey that danced among the chickens; while a weak stock will succumb, no matter which way they are turned, or how much they are covered. Shall we, then, neglect them, that strength may show its superiority over weakness? This would be very foolish. By all means keep the bees warm. Make them as snug as possible, and see that no wet gets into their hives. Above all, take care if snow approaches. Mr. Pettigrew used to say that a bee falling on the snow seemed to succumb quicker than if thrown into the fire, and so it would if left alone. It would soon revive if picked up at once, and put in a warm place. A strong hive may soon be depopulated by the bees dropping into the snow. Bees cluster in winter for warmth, and the colder it is the closer they cluster together. A few of the outside ones may fall and die, but that will not much matter. We are very much afraid that bees will be scarce next year. Many cottagers have lost all their swarms through the unlucky season of 1888, and neglecting to feed them.

The present is the time to be preparing for the next campaign. If your hives are home-made, make them; and if not, get them now. Dealers would execute the orders better and cheaper now than further on. Reversing has been before mentioned as productive of large harvests if done intelligently, and we are glad to find Professor Cook, of America, a staunch advocate of it. It seems that skeps are the best hives to invert, as they are inverted both safely and quickly. Messrs. Edey & Son, of St. Neots, supply a skep fixed into a bar-framed hive. The swarm is put into the skep, and when inverted, the bees rush up into a bar-framed hive, and fill it. Try it, *Bee*.

PLANTS AND THEIR CULTURE.

STREPTOCARPUS.—These are very pretty and interesting plants, allied to the *Gesneras*, of easy culture, and free flowering. The plants ought to be more commonly grown, and such species as *Rexii*, *biflorus*, *polyanthus*, and *parviflorus* would, I feel sure, make capital market plants. Their cultivation is within the reach of all those possessed of a heated house, and where only a greenhouse is at command the selection had better be confined to the sorts above mentioned. The huge one-leaved, red-flowered varieties, as *S. Dunnii* and others, similar, which have recently been introduced from Zululand and the Transvaal, like a somewhat higher and drier atmosphere than that of a greenhouse. But even the warmer sorts will succeed if in summer they are allowed the maximum of light, heat, and air obtainable in an ordinary greenhouse, and a temperature in winter not falling much below 50°, provided the plants are

not kept too wet, if so the leaves have a tendency to rot off, which, of course, spoils the plants. The best mode of propagation is by seed, which is usually produced plentifully. The seeds are small, and should be sown in small pans filled with a finely sifted compost of about equal parts of loam, leaf-mould, and sand. After filling the pans give a gentle watering, and sow the seeds thinly on the moist surface, cover with a bit of glass, and stand them in the propagating house, taking care to place them in such a position that no further watering may be required until the seeds have germinated. A good plan, if they show signs of getting dry, is to stand them in saucers into which a little water is put; but just now (and this is about the best time to sow) if they are stood on some moisture-holding-material, further watering is rarely required.

As soon as the seedlings are well up—usually about six weeks from the time of sowing—they should be pricked off somewhat thickly, in pans or small boxes, with a sharp-pointed bit of stick, in a similar manner to that practised with young Ferns. Light wooden boxes, about 20 inches by 12, made of three-sixteenths of an inch board, and from 2 to 2½ inches deep, are very convenient for propagating-work. For the first few months much more progress will be made if they are kept in the propagating-house, or where a temperature of about 60° is maintained. Under this treatment the little clumps pricked off will grow rapidly, and before they get crowded in the boxes they should be potted up, using a compost similar to that recommended for the seed-pans, but without it being sifted, and a little well-decayed manure or other fertiliser, might be added with advantage.

The size of pots in the first year should not exceed small 32's, but 60's and 48's are usually quite large enough. By the time the plants have got to this stage, an ordinary greenhouse is the more suitable place for them, if it is in summer, as it will be, if the seeds are sown now, shading the plants from direct sunshine. Towards the end of the summer, if all has gone well, they should begin to flower; when if removed (that is, if in a frame) to a light position in the conservatory, they will keep throwing up their flower-scapes for a long period of time. A speedy way of producing an effect with these plants is to plant a number of them in pots or pans; these quickly form an effective mass, and they may be potted up after flowering for use the next season. It may be remarked that they look best when the depth of pot or pan does not exceed 6 inches. These make capital subjects for planting around the edges of beds in conservatories or underneath the plant stages, but in such places the flowers usually get spoiled, and are rendered useless as cut blooms. For cutting purposes the species first mentioned are well adapted, having stout stalked scapes of flowers of good substance, varying in colour from white to lilac, or blue, more or less striped with chocolate or purple-brown on the three lower lobes of the corolla. *S. polyantha* and *caulescens* are two interesting species, with sky-blue flowers; the last-named is an erect branching species. Several interesting and beautiful hybrids, between *Rexii* and *Dunnii*, have been raised by Mr. Watson of Kew, two of which, *Watsoni* X and *Kewensis* X received Floral Committee Certificates last year from the Floral Committee of the Royal Horticultural Society. *F. Ross, Pendell Court*.

THE FLOWER GARDEN.

OUTDOOR FERNERY.—If not already done these should be cleaned and put into as neat and trim order as circumstances will allow. It is not to be expected that at this season it will present an attractive appearance, and cleaning must not be taken too literally; for instance, all dead fronds of deciduous species should not be removed from the rootstock for the present, but allowed to remain till the time of renewed activity, as they are the best of protectors in severe weather. Hand weeding may be done when the weather is open, and fallen leaves and dead sticks from overhanging trees removed. Examine the labels, re-naming such as require it. Although we have not as yet experienced frost sharp enough to injure the more delicate North American and other exotic species, it will be advisable to have protecting material in readiness in the event of a change to cold weather. Amongst those requiring protection I may name *Polystichum proliferum*, *P. setosum*, *Lastrea atrata*, *L. a. decurrens*, *L. opaca*, *L. frondosa*, *Cyrtomium*, *Struthiopteris germanica*, *S. japonica*, *Woodwardia radicans*, *W. japonica*, and *W. Fortunei*. The

majority of the above being evergreen species the fronds ought to be protected with pieces of matting or similar material, and, in addition to this, a good surface dressing of cocoa-fibre refuse or half-decayed leaves might be employed. New work and alterations should be pushed on during the mild weather. In the making of outdoor ferneries no pains should be spared at the outset to render the work of an enduring character; and I would mention two or three essential points: 1st, situation; this should be rather moist and shaded than the contrary, and if the ground is undulating with large trees close by, so much the better. The soil is another matter of importance, for if the staple is unsuitable for Ferns, some other must be substituted, and this may consist of sandy loam, leaf-mould and peat—the latter, in which the roots of wild Ferns abound, is the best. In the matter of planting, and in the choice of suitable species and varieties to plant I would say that in all cases where an intimate knowledge of Ferns is lacking, the matter should be left entirely in the hands of a nurseryman who makes a specialty of Ferns, as by so doing disappointment in results is likely to be averted. Suitable accommodation in the way of rockwork should also be provided for a few of the smaller growing species, such as *Ceterach officinarum*; many of the *Scolopendriums*, and some of the *Aspleniums* will also delight in such surroundings, and it would greatly add to the attractiveness of the fernery, if a narrow stream of water could be introduced, near to which some of the hardy "filmies," such as *Hymenophyllum tunbridgense*, *H. unilaterale*, and *Trichomanes radicans* might be grown. All these, and many other points are matters of detail which ought to be taken into consideration and decided on their own merits in each individual case. *J. Horsfield, Heytesbury.*

FRUITS UNDER GLASS.

PINES.—Plants, which are swelling their fruits, must be carefully supplied with weak guano, or Thomson's manure, every time they require water, and sufficient should be given to saturate the whole ball, no more being given till the plants are dry. Let each plant be examined once or twice a week as to its condition. Some plants may require water oftener than others according to their situation. Plants which are plunged in a bed of moist leaves or tan will not require so much water as plants wholly dependent on fire-heat for bottom temperature. Whenever the fruits show colour see that the soil is in a healthy condition as regards moisture, and if any be necessary give then, but no more till the fruit is cut. Regulate the atmospheric moisture by the state of the weather. If clear and bright, the paths should be damped the first thing in the morning, and again about 1 p.m., when the air has been shut off—the surface of the bed, and all wall surfaces, being sprinkled at this time, but avoid as much as possible damping the foliage; 85° to 90° for bottom-heat, 65° to 70° as a night temperature; but if the weather be of a character demanding the use of much fuel rather decrease the moisture, and allow the temperature to drop to 60°, as a cold frosty night is generally succeeded by a clear sunny day; 80° as a day temperature; 85° with sun and air, which must be admitted at the top of the house, and with care close the ventilator in time to run up a temperature of 95°, and have the fire stirred to prevent a too rapid decline of the temperature. The night temperatures are to rule from 10 p.m. to dawn.

Early Starters.—If not already done, no time should be lost in getting these prepared. Select only such plants for this purpose as are likely to start without making a growth, and subject them to a bottom-heat of 90°. See that they are in a proper state of moisture at the root when plunged, and be careful of watering much until they throw up their flower heads. If too much water be given they will in all likelihood start into growth instead of showing fruit; maintain 65° to 70° as a night temperature, 80° to 85° by day; and similar treatment as regards moisture in the atmosphere as that recommended for plants swelling their fruit. The plants intended for starting in February should be kept as quiet as possible, but the structure in which they are to be started should be got in readiness; and the plunging material should be renewed if necessary, so that the rank heat may subside prior to the plants being introduced. Keep these and all successional divisions at 55° to 60° at night, and 65° to 70° during the day with sunheat, airing on all favourable occasions.

Vines.—The early house will now be making rapid progress. Let the forcing be conducted as much as possible during the day. Where the leaves are developed cease the use of the syringe and damp the paths and ridge of fermenting leaves. Temperature 55° on cold nights and 60° on mild will be a sufficiently high until the Vines come into flower, when 65° to 70° should be maintained, with 10° higher by day—5° more being allowed with bright sun. Do not damp down the house in the morning when the Vines are in bloom, and towards midday distribute the pollen with a Pampas-grass plume. Damp the surface of the border at 2 p.m., when the house is to be shut up for the day. The tying down of the shoots must be very carefully undertaken else they will in all likelihood break off, but there is no need for hurry in this matter if the foliage be kept clear of the glass until such time as the Vines are coming into bloom, when the shoots will bend very freely. A watering of tepid water should be given to the border prior to the Vines blossoming, and the beds of fermenting leaves may receive a slight addition, if the heat has declined; and during the blooming stage of the Vines the daily turning of a portion may be dispensed with.

Pot Vines.—Much of that which has been recommended in regard to permanent Vines applies to these, only that every attention to watering and the due administering of weak manure stimulant must be duly carried out as recommended in the Calendar for December 8, giving top-dressings as frequently as they appear needful. Keep a steady root temperature of 85° by slight additions to the fermenting leaves.

The Second-house will now be swelling fast, and due attention to disbudding must be paid. When the buds are fairly burst, 55° should be the minimum night temperature, and 60° that by day; cease syringing the canes, and supply the necessary moisture by damping down. Prune all late vineries as they are cleared of fruit, and get them cleaned and prepared for starting.

The First Muscat-house should now be shut up, and fire-heat applied by the middle of the month. Grapes still hanging on the Vines should be examined at short intervals, and decaying berries removed, but considering the bad influence light has on black Grapes in lightening their colour, it is by far the best method to cut them with a good length of wood, and to place them in bottles in a dark room. Where convenience for this does not exist, a shade of brown paper may be laid on the trellis over the bunches. When the weather will allow, admit all the air possible, and keep a slight warmth in the heating apparatus, to expel damp; and when the weather is foggy keep the ventilators closed and the temperature as near 45° as possible. When hard frost necessitates the warming of the house the warmth ought not to exceed 40°. *Wm. M. Baillie, Luton How.*

THE HARDY FRUIT GARDEN.

APRICOTS.—These trees being the first to bloom, the pruning and nailing of them should be finished early in the New Year, and this year more especially, the weather being at present so very mild; and the swelling of the bloom-buds will be hastened considerably. I always endeavour to have the trees here pruned and nailed as early as possible, so that on the approach of frosty weather some kind of protection may at once be placed over them, if the state of the bloom-buds should seem to require it. The summer pruning of fruit trees, often before alluded to in my notes, applies also to the Apricot, and when this has been performed the present pruning, will not be of a severe character. All dead snags must be cut away and the spurs shortened to three or four buds. Young trees that have made strong shoots should have these left entire, as no good can accrue from cutting them hard back; in fact, it is very often the cause of a great deal of gumming taking place in the trees. These strong growths should have their tips pinched when they begin to grow, which will cause them to produce numerous laterals. The fore-right ones should be pinched in, and to form spurs, the others laid in, and the trees will thus be quickly furnished with bearing wood, as these laterals will generally become studded with bloom-buds in the following autumn. Where gaps have been caused by branches dying off during the last season, it will always be good practice to lay in enough young wood to fill them up, than to attempt to move one or more of the older branches out of their old position for

that purpose, the old wood of the Apricot being of a very brittle character which will not bear any force being employed in bending it one way or the other, and once the tissues are ruptured, gumming at once sets in, and the branch dies shortly after being moved. After the nailing is done, subject the trees and walls to a thorough washing with soap-suds with the garden engine, and if the trees are infested with brown scale, paint them with a home-made mixture, such as was recommended for Plums in my last calendar, p. 731.

Currants.—Those where grown on north walls should be spurred in to two buds, and with regard to old trees, lay in some young wood at the base for training up as branches, so that the old ones eventually may be cut away. Examine the shreds, and make good deficiencies, well washing the trees afterwards with a solution of soot and lime. Point the alley over to the depth of 2 or 3 inches, and dust the surface well over with newly slaked lime.

Orchards.—Examine the young trees, and shorten or remove altogether any branches that are likely to grow in the wrong direction, and cut off the points of any others that stand in need of it. Old trees that have been neglected will require the removal of the cross and interlacing branches, and the crowns should be thinned out, so that as much sunlight and air as possible will reach the inner part of the trees. If infested with lichen, dust the trees on a damp day with soot and lime, or syringe them with those substances thoroughly mixed in water. I had a great many trees so treated last winter, and the bark on stem and branch is now bright and healthy.

General Work.—As soon as the nailing of trees is finished the alleys will require attention, as the soil will have been trodden very hard. They should be forked up to the depth of a few inches, afterwards applying a mulching of dung to any trees which seem to stand in need of it. Apple and Pear borders should also be lightly dug over, and the digging of bush fruit quarters proceeded with after pruning the bushes. *A. Ward, Stoke Edith Park.*

THE KITCHEN GARDEN.

FRENCH BEANS IN POTS.—These require a nice light position at this part of the year, a temperature of 65°—70°, with plenty of moisture in the atmosphere, and they should be assisted when the roots fill the pots with weak manure-water at each alternate watering. Light turfy loam, pulled to pieces by hand, mixed with half decayed leaf-soil that has not been sifted, or old Mushroom dung, is the best kind of compost for Beans, and at this season it should be made warm before sowing the seed. Eight-inch pots are about the best size for most varieties, but 6-inch ones will be large enough for small growing varieties, or indeed for most others in the winter months. Some gardeners sow the seeds in 60's first and repot afterwards, but I have found the French Bean to do best if this disturbance is avoided by sowing the seeds in the larger pots. As they only remain in the pots a short time the drainage required may be of the slightest—one good sized crock over the hole and a handful of the rough part of the compost over this being sufficient for the purpose. The pot should only be made about half full at the time of sowing or transplanting, the soil being put in lightly, merely shaking the pot on the bench, and not pressing it with the hands, as the Beans prefer a loose soil through which the water will percolate freely. Enough seed should be put into each pot to allow for a few failures and to make sure of at least five good plants. The pots may be placed on the hotwater-pipes in a forcing-house to hasten germination, and when the plants show the third leaf they may be filled up with soil and a few twigs of Birch be stuck amongst the plants to support them. If any plants show a disposition to grow too tall the points should be pinched out when the stems have got three joints beyond the seed leaves; but if dwarf compact varieties like Sir J. Paxton and Osborn's Forcing are grown, this stopping of the points will be unnecessary. Canadian Wonder is a good variety but it is more useful at a later period. French Beans when grown in the temperature given above will be ready to gather in about six weeks after sowing, so that by sowing once a fortnight a fourth part of the quantity to be grown a continual supply can be maintained as each lot will last in bearing about that space of time. *W. H. Divers, Ketton Hall, Stamford.*

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APPOINTMENTS FOR THE ENSUING WEEK.

SALES.

TUESDAY,	JAN. 1.	Roses, Fruit Trees, Shrubs, Border Plants, and Bulbs, at Stevens' Rooms. Nursery Stock and Greenhouse Plants, from sample, at Protheroe & Morris' Rooms.
WEDNESDAY,	JAN. 2.	10,000 Liliun auratum, Azalea, Camellias, &c., at Protheroe & Morris' Rooms.
THURSDAY,	JAN. 3.	10,000 Liliun auratum from Japan, and Other Roots, at Stevens' Rooms. Dutch Bulbs, at Protheroe & Morris' Rooms.
FRIDAY,	JAN. 4.	Imported Orchids, at Protheroe & Morris' Rooms.
SATURDAY,	JAN. 5.	Roses, Fruit Trees, Shrubs, Border Plants, and Bulbs, at Stevens' Rooms.

In the press of every day work, where one duty swiftly succeeds to another, and where the work in hand is necessarily mingled with the preparation for that which is to come, one is apt to forget how much has already been done. Reflections of this kind crowd upon us as we scan the proceedings of the year now at its end. No one who will take the trouble to turn over the pages of the horticultural journals for 1888 will deny that it has been for horticulturists a year of great activity and substantial progress. For our own parts (if we may venture for a moment to speak of ourselves), the reduction in price, which was accomplished two years ago, is seen to have been a substantial success, which bids fair to be accentuated as time goes on. As the reduction has been carried out without detracting from the quantity or quality of the material put before the reader, we may fairly congratulate ourselves on the result.

Turning to the Royal Horticultural Society, as the corporate representative of national horticulture, it is evident that the worst has been passed. The ill-starred connection with South Kensington has been abolished, and the Society, with its associated library, has been installed in new and commodious premises. Moreover, thanks to the energy and labour of its Council, it has been freed from debt, new bye-laws have been enacted, and very much done to put the Society in a more satisfactory state, while a very large number of new Fellows has joined the ranks.

That the Drill Hall as a place for the fortnightly meetings should not have met with universal approbation is not to be wondered at, but it was the best that could be done at the moment, and no locality more suitable on the whole has yet presented itself, while the shows themselves have been mostly excellent and varied, the contributions from Kew affording great variety and unwonted interest. The inconveniences of this place of exhibition will, in the coming year, be greatly abated by the holding of various meetings at Chiswick, and by the repetition of a great show in the Temple Gardens. That which was held in that locality this year was very successful in itself, and would have been more so but for the dreadful weather—weather, by the way, which by its continuance in evil doing, proved very prejudicial throughout almost all the year, not only to many of our exhibitions, but, what is of more consequence, to many of our crops, the season having been the worst since the disastrous one of 1879, though fortunately not quite so lamentable in its results.

The great Quinquennial Ghent Show in April was the event of the year as regards horticultural exhibitions. It was fully reported in our columns, and was in all respects an unequivocal success. The Rose shows suffered from the untoward season, and the same may be said of the Chrysanthemum shows, although the success and progress of the National Chrysanthemum Society must be noted as one of the features of the time.

Great attention has been devoted to the subject of the culture of hardy fruit as a partial remedy for agricultural depression. Conferences at St. Albans, the Crystal Palace, Dunkeld, and last, not least, at Chiswick, have undoubtedly given a great impulse to this important matter, and among the results already attained has been the establishment of a horticultural college at Swanley, and the formation of a company for the express purpose of developing this industry. Another company, under the title of the National Fruit Growers' Association, has likewise been formed, for the purpose of fruit farming and other cognate enterprises. Provided due caution be exercised, and exaggerated anticipations be not indulged in, there is no doubt that there is room, even under existing circumstances, for a considerable development of profitable enterprise in this direction, though a perusal of the fruit crop reports published yearly in our columns for the last quarter of a century should tend to modify exaggerated anticipations. Difficulties dependent on land tenure, rates, &c., can doubtless be met, but the conditions of climate are less amenable to human provision. Something may be done, however, even in this direction by the selection of suitable sorts, and by appropriate cultivation.

The promised establishment of a Board of Agriculture, to include horticulture and forestry, has for the present been postponed, though there is little doubt that it will ultimately be established when the thorny questions relating to the occupancy of the land, the questions of tithes, preferential railway charges and similar matters may stand a chance of much-required readjustment, though if they are made the war-cries of party politicians it may be feared progress will be slow.

The charitable societies connected with horticulture have prospered, the old established Gardeners' Benevolent Society is thriving, while the enthusiasm which surrounded the inception of the Gardeners' Orphan Fund—a memorial of the QUEEN'S Jubilee—has by no means subsided, and the young institution is already in a prosperous condition and effecting much good.

Public recognition has been made of the importance of horticulture as contributing to the progress and welfare of humanity in the honours accorded to some of its representatives. A special medal was presented by the King of the BELGIANS, at the instigation of the Ghent Society of Botany and Agriculture, to Professor REICHENBACH for his life-long services to Orchidology; and other distinguished honours have been conferred upon English representative men.

Of new introductions in the way of plants and vegetables we shall make further note on another occasion; in the meantime, we may state that the vegetable first figured in this country in our number for January 7, 1888, p. 13, bids fair to achieve considerable popularity. Under these circumstances a popular name becomes a desideratum. The French term *Croches* is hardly acceptable, the epithet "Chinese Artichoke" is doubly incorrect. To meet this difficulty Messrs. STUART & MEIN propose to call it Knot-root, to which no very grave objection can be raised, though if we were inclined to be hypercritical we should certainly not call it a root, while Mr. SHIRLEY HIBBERD'S proposed term of Spirals is hardly more appropriate. In the meantime, *Stachys* is not a very objectionable word to employ.

Of books and memoirs relating to botany and gardening there has been a constant stream, as one may see by merely consulting our index. Adverting to forestry, we may permit ourselves to refer to the paper of Dr. SCHLICH in our columns on *Abies Douglasii* as a timber tree, not only for its direct value as a contribution to the history of the tree but as a model of the kind of investigation which it behoves foresters to undertake, if they would see their art progress and develop its potential importance. Mr. HARRY VEITCH'S paper in the *Journal of the Linnean Society* on the fertilisation of *Cattleya* may be cited as another illustration of the kind of work needed to forward the progress of horticulture in that direction. The vast *Encyclopædia Britannica* has been completed within the year, and we allude to it here for the purpose of pointing out that not only pure Botany and Physiology, but Horticulture and Agriculture are treated in it in a manner commensurate with their importance, and in such a way as to be available, not only for experts, but for the general public.

The obituary record of the year shows that it was disastrous for botanists. The great and much beloved ASA GRAY was taken from us early in the year, the eminent anatomist and mycologist, DE BARY, succumbed to the general fate. Professor DICKSON and Dr. BOSWELL made great gaps in the ranks; while among horticulturists the brave veteran ex-Curator of Kew, JOHN SMITH, was very shortly followed to the grave by his successor of the same name. JOHN DAY will be long remembered among orchidists, while WOODBRIDGE and ROGER will remain in recollection as representative gardeners.

We must confine ourselves here to this general review of the year's proceedings. In successive issues we shall have occasion to enter into further details on particular departments than it is advisable to do now.

SYMPHYANDRA HOFFMANNI, SP. NOV. (fig. 107).

—A fine specimen of this remarkable hardy plant, probably the first flowered in this country, was exhibited from the Royal Gardens, Kew, at the Drill Hall last summer, and although somewhat resembling the better known *S. pendula*, it has a more robust habit, and produces flowers in much greater quantity. It is a native of Bosnia, where it was found in 1883 by the gentleman whose name it bears, and was figured and

described by PANTOZER in the *Wiener Illustrirte Garten Zeitung*, 1884, p. 352, fig. 53. The plant is bushy, high branched, and compact, upright, and from 1—2 feet high. The flowers, on longish pedicels, are produced from the axils of all but the lowest leaves, continuing to give a succession from two to three months in duration. Flowers white, the inside covered with long whitish hairs, the lobes ovate acute, always drooping. Calyx of five long lanceolate divisions, exceeding the base of the corolla by the length of the capsule, style the same length as the corolla, the anthers in a column

ROYAL HORTICULTURAL SOCIETY.—The following list shows the dates and places of meetings and shows for 1889:—January 15, February 12, March 12* and 26*, April 9* and 23*, and May 14* at the Drill Hall, Westminster; May 30 and 31, Temple Gardens, London; June 11* and 25*, Drill Hall; July 2, 3, 9, Chiswick; July 23*, August 13* and 27, and September 17, Drill Hall; September 24, 25, 26, Chiswick; October 8* and 22*, Drill Hall; November 12 and 13, Chiswick; December 10, Drill Hall. On the days marked * a short popular lecture will be delivered at 3 P.M. The Fruit and Floral

25, 26, Chiswick. Chrysanthemum Centenary Conference, November 12, 13, Chiswick.

CHISWICK HORTICULTURAL SOCIETY.—We learn that this Society has determined to hold its summer show on July 9 at the Royal Horticultural Society's Gardens, Turnham Green, in conjunction with the meeting of the Floral Committee of the Royal Horticultural Society. This is an excellent arrangement, and one that we hope may pave the way for that fuller federation and affiliation of the special and local societies which would replace so



FIG. 107.—SYMPHYANDRA HOFFMANNI: FLOWERS WHITE. (SEE P. 760.)

reaching half the length of the latter; leaves ovate, acuminate, sharply bi- or tri-serrate, the ribs white, prominent on both sides, and these as well as the whole plant covered with short hairs, and of a fresh spring green colour. Although the flowers are not of a brilliant colour, the neat habit of this plant, together with its profuseness of flowering, entitle it to a place in every good collection. It is extremely free even for a *Campanula*, and continues such a long time in bloom as to make it welcome. So far our impression that it is a biennial has not been confirmed. It commenced to flower in July, and is still alive, and flowering at the present moment—December, 1888.

Committees will meet on the above dates at 11 A.M., except May 31, July 3, September 25, 26, and November 13. The Scientific Committee will meet at 1 P.M. in the Library, 111, Victoria Street, S.W., on the above dates except on May 30, 31, July 2, 3, 9, August 13, 27, September 17, 24, 25, 26, November 12, 13. The Annual General Meeting will be held in the Library, on February 12, at 3 P.M. National Auricula Society's Show, April 23 Drill Hall. Great Summer Exhibition, May 30 and 31, Temple Gardens, E.C. Great National Rose Conference, July 2 and 3, Chiswick. Chiswick Flower Show, July 9, Chiswick. National Carnation Society's Show, July 23, Drill Hall. Great Vegetable Conference, September 24,

advantageously the destructive process of disintegration which has been going on in other quarters. The autumn show of the above Society will be held on November 14.

"THE GARDEN ORACLE."—Mr. SHIRLEY HIBBERD issues his customary annual, containing, in addition to the ordinary calendrical matter, lists of the new plants of the year, much useful Chrysanthemum lore, and a variety of matter which will make its purchase a matter of satisfaction. The publishing office is at 4, Ave Maria Lane.

"THE GARDENER'S MAGAZINE."—At this season our old friend blossoms out like the Glas-

tonbury Thorn, throws off the details of weekly routine, and diverges into numerous bypaths. The holiday-keeping reader will delight to have a "run round" Shakespeare's gardens. Some may find leisure to overhaul and re-arrange their bookshelves, and will find useful hints. In fact, the reader must be very teratological indeed if he cannot find something to amuse and interest him.

ALMANACS FOR 1889.—Foremost among these for general use stands Whitaker's (12, Warwick Lane, Paternoster Row, London), of which we have received a copy. The latest edition is larger than that of 1888 by about 60 pages and contains as usual a fund of statistical information on a variety of subjects, political and otherwise, making it a handy reference book for both office and home. There is a review of the science of the year, music, &c., and a table of marks on porcelain is introduced. The *Live Stock Journal Almanac* (Vinton & Co., 9, New Bridge Street, Ludgate Circus, London), contains numerous articles of use to the stock-farmer, contributed by some of the leading writers on the subjects, such as Sir J. B. Lawes, and Professor Wrightson. Horses, cattle, poultry, are all mentioned. *Calvert's Mechanics' Almanac*, a book of about sixty pages, contains articles which recommend themselves to builders and other artisans. There are short paragraphs on various topics of interest, a notice on the patent law amendment, and tables for purposes of various calculations. Messrs. Foster & Pearson (horticultural builders, &c., Beeston, Notts) issue an almanac with one month on a sheet; and a daily calendar, comes from Messrs. T. Fletcher & Co. (Gas Stoves, &c.), London and Warrington. Messrs. J. Weeks & Co. (Horticultural Builders), Chelsea, London, issue a handy pocket and note-book for the year. The Lion Fire Insurance Company has also forwarded a Card Calendar for 1889.

"WALKS IN HOLLAND"—Many of our readers, interested in Dutch bulbs, Crocuses, &c., will like to know that an illustrated Handbook to some of the less frequented parts of Holland, including Friesland, Groningen, and Guelderland, edited by Mr. PERCY LINDLEY, is in preparation.

SCIADIUM ARBUSCULA.—At a well attended meeting of the Natural History Society of Aberdeen on Tuesday, the 18th inst. Mr. JOHN ROY, President of the Society, communicated the occurrence of the *Sciadium arbuscula* (BRAUN), discovered for the first time in the British Isles, in the month of November last, by Mr. ROY. The finding of the plant is somewhat interesting. Mrs. FARQUHARSON, of Haughton, forwarded to Mr. ROY a specimen, with other plants she had found growing amongst leaves in a pool near Haughton, Aberdeenshire, and that gentleman was enabled, from descriptions given by Dr. BRAUN, to make the plant out to be the *Sciadium arbuscula*, which is found in Germany and other parts of the Continent. In his communication on the plant to the Society Mr. ROY described its growth in its various stages, and illustrated his remarks by drawings executed by Dr. BRAUN.

CHINESE FLORA.—The enumeration of the plants known to inhabit the Chinese Empire, and which is being prepared by Messrs. F. B. FORBES and W. B. HEMSLEY, has now reached the end of Compositæ. The enumeration forms a volume of the *Journal of the Linnean Society*, but may be had separately. Descriptions are given of new species, while, for those which have been previously described, bibliographical references are supplied. The work will form a necessary companion to the *Flora of British India*, and other Colonial Floras.

COCOA-NUT REFUSE.—An interesting possible utilization of Cocoa-nut refuse is referred to in a report of the Government Botanist of the Botanic Gardens in the Nilghiris for the year 1887-8. It has been found that if the refuse be subjected to pressure while yet moist, the natural viscosity causes it to cohere to form a mass resembling millboard.

This substance is so hygroscopic that if a puncture be made in it while in contact with water the adjacent parts immediately absorb so much water that the orifice is closed by the consequent expansion. It has been found that in this way the orifice caused by the firing of a bullet nearly an inch in diameter through a $\frac{3}{4}$ -inch plate of the refuse, sustaining a head of 1 foot of water, was stopped so quickly, that although a large jet at first spirted through, this decreased in volume in a few seconds, and in less than a minute had ceased entirely. It is suggested that this property might render the material valuable as a backing to the armour of ships.

STOCK-TAKING: NOVEMBER.—The imports from British possessions and foreign countries at this season of the year are of somewhat greater interest to both vendor and purchaser than, perhaps, they are at any other time—medical gentlemen may also be expected to be taken into consultation in this connection. That will be seen later on. The summary for the month of November, now before us, records as follows:—

	1887.	1888.	Difference.
	£.	£.	£.
Total value of imports	32,850,321	35,223,935	+2,373,614
§ II.—(A.) Articles of food and drink—duty free ...	10,114,928	11,253,883	+1,138,955
(B.) — do., dutiable	2,639,453	2,537,472	—101,981
§ VI.—Raw materials for textile manufactures (including Flax, Hemp, and Jute)...	8,630,406	8,468,482	—161,924
§ VII.—Raw materials for sundry industries and manufactures (including wood and timber, hewn, sawn, split, dressed; vegetable materials, for paper-making, &c.)	2,831,606	3,128,423	+296,817
§ IX.—Miscellaneous articles (including Clover, Grass, Flax, Rape, Linseed) ...	1,272,687	1,508,562	+235,875

From the expanded list of imports the few appended extracts are of interest—the "summary" is otherwise sufficiently explicit:—

	1887.	1888.	Difference
§ II. Fruit:—			
Apples, raw ... bush.	389,054	942,466	+553,412
Unenumerated, raw ... "	206,513	182,410	—24,103
Onions ... "	527,931	339,216	—188,715
Potatoes ... cwt.	178,143	63,800	—114,343
Vegetables, raw, unenumerated ... Value	£34,987	£12,365	+£22,622

The "difference" columns in both tables will be found of interest to a large section of our readers; for whom, however, the figures for the twelvemonths will naturally be more valuable; and this will be laid before them in good time.

BIRMINGHAM AND MIDLAND COUNTIES CHRYSANTHEMUM AND HORTICULTURAL SOCIETY.—The annual dinner of the above Society was held on Tuesday evening, December 18, at the Bell Hotel, upwards of fifty members, leading nurserymen and seedsmen and principal gardeners of the district, being present, besides several invited guests, and amongst the latter were Mr. OUTRAM, Mr. PETCU, and Mr. PARKER, Impney Hall, the successful Chrysanthemum grower. The chair was taken by Mr. LATHAM, Curator of the Botanical Garden, and after the usual loyal toasts had been given and duly responded to, Mr. OUTRAM proposed the toast, "The Society," and alluded to the good work the Society was doing, the excellent manner in which everything was arranged, and to the quality of the exhibits. Mr. HUGHES, the Secretary, announced that it was intended to offer a substantial prize for cut flowers of Chrysanthemums next season, it being the centenary of the introduction of the plant. A subscription list was at once opened and a good sum collected in the room. It is the wish of the Society to draw

together the leading growers of the North and the South to compete for this prize, and they intend to make it worthy of their object.

PRIMULA VEITCH'S CHELSEA BLUE.—A batch of this handsome blue *Primula* is just now in bloom in the fine gardens of H. H. GIBBS, Esq., Aldenham, Elstree, and is spoken very highly of by Mr. E. BECKETT as a variety whose colour is very useful and telling in floral arrangements. The Chrysanthemums have been very fine at Aldenham this year, and the successions of *Primulas*, *Bouvardias*, *Poinsettias*, &c., with good foliage plants, and a sprinkling of *Orchids* ensure no lack of bloom at this season.

EUCHARIS AMAZONICA.—Almost filling the space in the Banana-house not occupied by the *Musas* now fruiting at Aldenham in the gardens of H. H. GIBBS, Esq., is a grand lot of specimens of this fine white bulbous plant, many in flower and in great promise of bloom to succeed for a considerable time. These plants are noteworthy, especially as many of them were suffering from *Eucharis-mite* when they came into Mr. BECKETT's care. Mr. BECKETT's opinion is that bad condition, either from bad culture or accident, favours the increase of the *Eucharis-mite*, and good culture soon stamps it out; once good root-action being secured, the mite soon departs to more congenial localities. This is the opinion of many good growers now.

FRUIT FARMING.—MR. P. CONWAY, late of the Gardens, Muntham Court, Worthing, is now engaged in planting a fruit farm on an extensive scale at Outwell, Wisbech, Cambs., for J. W. MARTIN, Esq. The farm will embrace both indoor and outdoor fruits.

SOCIETIES.

LINNEAN.

DECEMBER 20.—Mr. W. Carruthers, F.R.S., President, in the chair. The Rev. G. E. Post, M.A., M.D., was elected a Fellow of the Society. The following recently elected Fellows were formally admitted:—Mr. R. W. Hullett, M.A.; Dr. D. T. Playfair, Mr. Clement Reid.

Professor R. J. Anderson exhibited a photograph of an apparatus for the microscope which he had designed, consisting of a revolving disc with clips, by means of which a number of slides may be successively brought opposite the microscope, which is fixed in a horizontal position in front of it.

Mr. Clement Reid exhibited fruit of the Hornbeam from the preglacial forest bed at Pakefield, near Norwich, and not previously recorded as occurring in any British deposit.

Mr. T. Christy exhibited a collection received from Java of hairs from the base of various Ferns, notably *Cibotium Cummingii*, and a species, as supposed, of *Dicksonia*, used as a styptic, for staunching blood. Professor Stuart, in pointing out that the use of similar material for a like purpose in China was well known to surgeons, took occasion to explain the nature of the so-called "lamb of Tartary," on which an instructive little volume had been published by the late Mr. Henry Lee, F.L.S. Mr. D. Morris remarked that the use of Fern-hairs was also known as a styptic in South America, whence specimens had been forwarded to the museum at Kew.

A paper was then read by Mr. D. Morris on the characteristics of plants, included under *Erythroxylon coca*, Lamarck, with a description of a new variety, which he proposed to name, from its origin, *E. novogranatense*. He pointed out that the well-known coca plant had been noticed by botanists and travellers for the last 300 years, and that although *Clusius* was generally regarded as the earliest writer on it, he had been anticipated by Nicholas Monardes in his *Historia Medicinal*, published at Seville in 1580, and translated by *Clusius*, who printed it in a condensed form in his *Exoticum libri decem*, in 1605. The plant was first described as a species by Lamarck, in the *Encyclopédie Methodique*, in 1786, from specimens brought by De Jussieu from Peru. Until lately the leaves had been used merely as a nervous stimulant, like opium in China, and betel in the East Indies; but had latterly come into prominence as the source of cocaine, a valuable alkaloid possessing anæsthetic properties when brought in contact with the mucous membrane. There were several climatic forms more or less distinct, and after describing the typical plant, Mr.

Morris pointed out the characters by which *E. novagranatense* might be distinguished.

Mr. Spencer Moore contributed a paper on *Apioscystis*, which he regarded as a *Volvocinea*. The ciliated form was described, and it was shown that its zoospores may sometimes escape as *cnobia*, like a degenerate *Volvocinea*, which has exchanged the motile for the fixed condition: the sexual cells being zoogametes, its affinity is rather with *Pandorineæ* than with oogamous *Volvoceæ*. The paper was criticised by Mr. A. W. Bennett and Professor Marshall Ward, who, while testifying to the importance of the investigation, expressed the hope that no change would be made in classification until further examination had been made of some of the stages at a critical period of development. Mr. George Murray gave his warm support to the views expressed by Mr. Moore.

A paper was then read by Mr. G. B. Sowerby embodying descriptions of some new species of shells, of which coloured drawings were exhibited. Amongst these the most noticeable were an *Ortholus* from the Peruvian Andes, *Pleurotoma* (Hong Kong), *Amathina* (Mauritius), *Crassatella* (Japan), *Clavigella* (Mauritius), and *Pectunculus* (Australia). An interesting discussion followed, in which Professor Stewart and Professor Mivart took part, upon the colouration of mollusca being possibly dependent upon the colour of their natural surroundings, or upon that of the host to which in many instances they were found to be attached.

The meeting adjourned until January 17.

ENTOMOLOGY.

THE RED GRUB OF THE PLUM.

In our article on the *Tortrix Wueberiana* (*Gardeners' Chronicle*, September 6, 1884) we detailed the life-history of a small moth which lays its eggs on the trunks or branches of Pear trees, the caterpillars hatched from which burrow beneath the bark, forming passages, which, when numerous, injure the tree, especially killing the smaller branches, and by degrees destroying the trees. This insect does not, however, confine itself to the Pear, but may be found on some of our stone-fruit trees, such as the Peach, Apricot, and Plum. In England, however, and in various other parts of Europe, more serious injury is sustained by the crop of fruit of the last-named tree in the shape of a small dirty red-coloured caterpillar, which is often found in the interior of the full-grown Plum or Green Gage, towards the end of the month of August.

The eggs are laid by the parent moth in the early part of June upon the then formed young fruit, the grubs hatched from which, in the following month, at once burrow into the fruit, upon the flesh of which they subsist, feeding around the hard stone, and leaving their small particles of excrement within the wounds of the fruit, since, being protected from rain and wind, they thrive rapidly, the outer wound in the skin of the fruit through which they gained an entrance soon healing up, and preventing their presence within from being suspected; so that it often happens that the unwary fruit-eater has his mouth filled with the nauseous interior of the fruit. The state of the interior of a Green Gage is shown in the accompanying woodcut (fig. 108), made from a drawing on August 23 last, the stone of the fruit with the grub of the natural size, and the mass of the insects' excrement being represented of the natural size. The head of the grub is black, the following segment of the body is pale flesh-coloured, with two small black dots near the hind margin, with black markings at the sides, and the remainder of the body is red, the hind part darker coloured, and there are a few short fine hairs scattered over the body.

The fruit falls to the ground, and the grub immediately creeps out of it, and seeks for a quiet place in which it can pass its chrysalis state: generally, however, this is effected whilst the fruit still hangs on the bough, when it creeps out and enters any crevice formed by loose or splintered pieces of the bark and wood, penetrating as deeply

as possible into the chink of the former, where it spins a fine light silken cocoon, in which it assumes the chrysalis state, the moth appearing in the following spring.

The moth is the *Tortrix* (*Opadia*) *funebrana* of Treitschke, but it was subsequently described under the name of *Tortrix* (*Carpocapsa*) *nigricana* by Schmidtberger, being, however, quite distinct from the true *Tortrix nigricana* which infests the common Pea (see *Gardeners' Chronicle*, 1880, p. 360).

The moth (as shown by the cross lines in our figure) measures nearly two-thirds of an inch in the expansion of the forewings, which are of a dark colour varied with lighter scales, forming shades before and beyond the middle, and with several short oblique dark lines along the fore edge of the wing; the hind wings are paler, with a dark border. The insect is represented about twice the natural size in our engraving, which also represents the caterpillar of the natural size suspended by a thread from a twig, with the head and two following segments of the body.

It has been suggested that it is desirable to effect

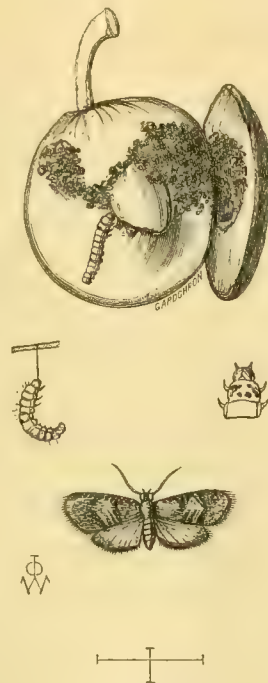


FIG. 108.—PLUM GRUB AND MOTHS (*TORTRIX FUNEBRANA*).

the destruction of this insect by shaking the trees, so as to cause the injured fruit, which has become prematurely ripe from the attacks of the insect, to fall to the ground, or which has already fallen, and which must be at once destroyed; all loose portions of the bark of the trees should also be scraped off and burnt, so as to destroy such of the insects as have already made their cocoons there.

We learn from our American correspondents that the Plum Crop in the United States is very precarious, but we find no notice in Mr. Sander's fine work on *Insects Injurious to Fruits* (Philadelphia, 1883), of any *Tortrix* injurious to the different kinds of Plums. There is, however, in that country another insect which is even more injurious than our English moth, namely the Plum Curculio (*Conotrachelus nenuphar* Herbst), "the greatest enemy the Plum has to contend with, for when allowed to pursue its course unchecked, it often destroys the entire crop." This is a small weevil, the tiny grub or larva of which feeds around the stone of the fruit in the same manner as the larva of our *Tortrix*, and measures when full grown about two-fifths of an inch long, and which undergoes its transformation much in the same way as our *Tortrix*. I. O. W.

IRELAND.

ROYAL BOTANIC GARDENS, GLASNEVIN.

The following extracts are taken from the annual report of the Director of the Science and Art Museum, Dublin:—

Year by year it has been my pleasing duty to draw attention to the progress and improvement in these gardens. In a better climate and with a more fertile soil mere conservation might do much to render a similar place attractive at all times, but, circumstanced as they are, it requires both energy and forethought to provide for all the contingencies arising in consequence of uncertain and variable seasons and a poor soil. While the public enjoy and appreciate the results, it seems only just that particular mention should be made here of the means by which these results are obtained. It is too often the case that with a limited staff an excuse is made for leaving something undone because something else has to be done; such excuses are not and need not be made by Mr. Moore, for the simple reason that everything is provided for and done in advance of the pressure, which it is not unanticipated before it has actually come to pass.

It is most satisfactory to note the testimony given by Mr. Moore as to the success of the new Palm-house, and indeed the health and vigour of the plants since its completion cannot fail to impress every visitor. So far as any opinion can at present be formed, the new Fern-house promises to be equally successful, and the arrangement by which different temperatures are maintained in its two divisions to suit the necessities of the two classes of Ferns which they contain respectively, appears to work well.

The new ground known as the Arboretum is rapidly emerging from the raw appearance which it at first presented, and there is every prospect of its being fully stocked within a reasonable period.

The gardens have been largely used by students and their teachers, and the supply of plants to various educational institutions has not only been continued, but Mr. Moore has found it practicable to distribute hardy plants to the Queen's College, Cork, and to the garden attached to the Royal University, while a collection of Cape bulbs has been sent to the Sydney Botanic Gardens.

Upwards of 1000 plants were received either in exchange or through the munificence of donors, among whom Mr. Moore especially mentions the Director of the Royal Gardens, Kew, and Messrs. J. Veitch & Sons, of Chelsea, to whom, as well as to about eighty other donors from all quarters of the globe, the thanks of the Department have been duly communicated.

The purchase of plants and seeds during the past year to a small extent exceeded, both in number and cost, the amounts returned for last year. In round numbers, the cost has been £272 for 945 plants, as against £265 for 834 plants purchased in 1886. When the results are taken into consideration, this expenditure cannot but be regarded as moderate.

The erection of a new house for succulent plants and the increased accommodation in connection with the office and library remain as the two principal requirements for which it is hoped provision will be made in the coming year.

Although there is a falling off in the attendance of the public compared with last year, the total number of persons who entered the gardens is scarcely short of what may be almost regarded as the present normal average of 1000 for every day in the year.

Mr. Moore in an appendix, reports as follows:—

Conservatories.—No. 1. In my reports for 1885 and 1886 I drew attention to the dilapidated condition of No. 1 conservatory, and in my report for the latter year I further mentioned that designs for a house to replace it had been prepared. It is now my pleasing duty to report that these designs were adopted, and the erection of a new house sanctioned, which is now completed and fully occupied. The new conservatory is an

elegant and commodious building, the main portion being square (32 feet 6 inches), with straight sides 23 feet high, and a curved roof, the upright portion being constructed of wood and the roof of iron; leading to the main portion is a spacious porch, 19 feet long, 21 feet 6 inches wide, and 17 feet high, and a passage connects the new house with the Victoria-house No. 2. The entire house is furnished with slate and iron shelving, concrete floors, and provided with ample heating appliances. Arrangements were made by which the porch can be heated separately from the main building; it is therefore used for the cultivation of tropical Ferns, whilst in the other portion the cool and temperate temperature-loving Ferns are collected together. It would be injudicious so soon to pronounce an opinion as to whether or not the new conservatory suits the cultural requirements of plants.

No. 6. The Orchid-house is now in every respect a greatly improved house in comparison with what it was at the date of my last report, in which I described the very decayed condition of the roof. Messrs. Boyd were directed to put a new roof to the Orchid-house, and arrangements were made to allow them to commence work in September. As was the case with the Ferns in No. 1 conservatory, all the Orchids had to be removed and accommodation found for them elsewhere. The new roof is an excellent one in every respect, being light and strong, and containing all modern improvements, such as grooved sash-bars to carry away condensed moisture, the benefit of which is already apparent. The arrangements for ventilation are also good. Clear glass has been substituted for rough grooved glass with which the roof was formerly glazed, so that much more light is admitted to the plants—an important factor in the successful cultivation of Orchids. Advantage was taken of the opportunity afforded by the constructing of the new roof, to extend each side 7 inches outwards, so that a substantial addition of 14 inches has been gained in the breadth of the Orchid-house. When closely examined the side staging was found to be too old for repairs, and it has, therefore, been replaced by a neat and substantial slate and iron staging.

The Orchid-house is now thoroughly sound, and may be regarded as one of the best and most suitable conservatories in the garden. I feel bound to testify to the excellent and expeditious manner in which all the work undertaken by Messrs. Boyd in this garden has been performed.

No. 7. The more experience I have of the large Palm-house, the more I can praise it as an excellent house for the cultivation of plants. The rapid growth and excellent health of the plants in it bear ample testimony to its suitability to their requirements. They are growing so rapidly that they will soon be overcrowded, and some of the duplicates must be eliminated.

Library and Herbarium.—I can only repeat with emphasis the appeal made in former reports for increased accommodation in this department. A large number of valuable books was lately purchased for the library. The collection is a very valuable one, and well merits a more suitable location.

Outdoor Department.—Several causes combined to render it impossible to do much new work in the outdoor department during the past year, the chief cause being the extreme dryness of the season. Such a long continued drought has rarely been experienced at Glasnevin as that which prevailed during the spring and summer months of 1887. The result was disastrous to newly moved plants and to herbaceous plants in general. On the shallow gravelly soil of Glasnevin, moisture quickly disappeared, and although several men were constantly employed watering them, herbaceous plants only attained to about one-half their normal development, and many of them did not flower. Several large trees throughout the garden died, and it was only by constant watering that newly planted trees were kept alive. The usual indoor staff were unable to perform their ordinary daily work, owing to the numerous movements of plants from house to house, rendered

necessary by rebuilding and repairs, so men had to be transferred from the outdoor department.

Considerable changes were made in the walks and grounds adjacent to the new Fern House. The main walk leading from the entrance gate, was altered, widened, and re-made. The shrubberies at the gate, which had become poor and overgrown were reformed, and the herbaceous border in front of the new house was re-made; all the plants in it being lifted, the ground well trenched and manured, the former occupants being then re-planted, and many additions made to them.

The Rose garden also received attention. Many kinds of Rose had died out, and the soil in the beds was exhausted. All the plants were regroupped and classified, the old plants replaced by a fresh stock, and the beds renewed.

The process of removing ivy from some of the large specimen trees throughout the garden was continued, but much more remains to be done, as owing to the matted growth of the ivy stems, this work occupies much time. Those trees from which the ivy was removed last year are already much improved in vigour and appearance.

SPECIMEN TREES IN KEW GARDENS.

PINUS COULTERI.—Some time since we published a description, accompanied with figures, of the magnificent cones of *Pinus Coulteri* (see p. 413, March 28, 1885), as produced in Mr. Baker's pinetum at Bayfordbury. In that article we had occasion to advert to the fine specimen of this tree at Kew, and which from its regularly pyramidal habit and imposing proportions never fails to attract the attention of tree lovers. We have now an opportunity of giving an illustration (fig. 109), and we are indebted to Mr. Geo. Nicholson for the following measurements of the tree in question:—Height, 56 feet; spread of branches, 45 feet; girth of stem at 4 feet, 6 feet 2 inches. The growth of the tree is relatively rapid, so that its value to the landscape gardener may readily be estimated. Mr. George Paul tells us the tree does well on London clay. We can answer for it on a chalky loam, for some of the finest cones we have seen were grown on a tree in the pinetum of Mr. Thomson, of Petham, near Canterbury.

THE BULB GARDEN.

TIGRIDIA PAVONIA.

CONSIDERING the great beauty of this highly coloured Iridaceous plant, the wonder is that it is not more grown in gardens, as it is so gorgeous and large in flower as to attract notice and command admiration from even the most casual observer, and those not acquainted with it are sure to ask what it is. Unfortunately the gay blossoms last only a day, but as they are produced so freely and in such rapid succession plants are seldom without one or more open for several weeks. The past season, however, was against them, the wet and cold having been too much for such heat-loving subjects, and in consequence many failed, and in some cases the bulbs died outright. The finest form of this *Tigridia* is the variety named *grandiflora*, and besides the type there are several that have originated from seed, the best among them being *T. splendens*, *T. Wheeleri*, and *T. speciosa*; but any and all of them are well worth growing. They take up but little room, as they may be planted among Tulips or Roses or other tall things, and the slight shade they get in such positions just suits their requirements. In some places where the soil is very light and naturally well drained, *Tigridia pavonia* will live out during the winter, but unless the situation is specially favoured in the way referred to, the bulbs should be taken up when the tops die away, and be stored in some dry shed till the spring. The right time to plant is early in April, when, if placed in

borders, they look best in clumps or patches of three or so, and should be dibbled in about 3 inches deep, and have a little silver-sand dropped into the holes to cover them up. *Tigridias* admit of ready propagation by offsets and seed, which they produce freely, and the latter should be sown in pans of fine soil in March, and if then placed in gentle heat the seedlings will soon be up, which, when large enough, may be pricked out in a bed and left to grow for the summer, but it will take about three years' growth before the bulbs will be large enough to produce any flowers. *J. S.*

LILIUM CANDIDUM FOR FORCING.

Although replete with all that is lovely, the genus *Lilium* cannot boast of containing many species which can endure even a moderate amount of artificial heat with impunity, and fewer still are those kinds to which the term forcing as usually understood may be applied; indeed, none of the species are benefited by anything beyond a greenhouse temperature at any time, that is, if you place value on the future bulb; if not—and the only thing needed is to have their flowers at all hazards—then it matters little how much or little heat be given them so long as the flowers are forthcoming when required; but it is not many who would care to risk their stock in this way, or who could even afford to be so extravagant. Taking all things into consideration, the old white garden Lily, *L. candidum*, is, without doubt, the most valuable for the above purpose, not merely because of the glistening purity of its flowers, or its fragrance, but because these two primary qualities are combined with unparalleled cheapness; and, seeing that it does not object to gentle heat, it may with fair treatment be made a profitable investment where flowers are grown in quantity either for market or home use.

Many growers of this Lily during the early part of the present year suffered considerably from the disease, and the crop was destroyed wholesale,—in one particular instance which came under my notice the average of good flowers hardly equalled the number of spikes produced, and to record this fact of some hundreds of plants means a serious loss in many ways besides their flowers, such as time, firing, house-room and the like; nor did these bulbs look any too promising when I saw them, a few days ago, though they may pull through in many instances if allowed to start their flowering stems naturally. It may be, however, that no new flowering bulb was built up, after so severe an attack of disease: and, therefore, it will be looked for in vain. One of the best and surest signs of good health in this species is the production of radical leaves early in autumn; if these appear, and provided the bulbs are of sufficient size, you may rely upon flowers in due course, and even in small bulbs it is an excellent sign of good health to see these push forth at the right time. Those bulbs which were forced early last spring, and escaped the disease are now pushing up good flowering stems again, fully 8 or 10 inches high; all these, however, produced their radical leaves in the usual course. Those who would grow this Lily for forcing may regard this as the best possible proof of healthy root-action below, and this species with its varieties are wholly dependent on basal roots for support; for I have never seen stem roots upon this species at all. But radical leaves have been somewhat sparsely produced this autumn, at least from plants in the open ground, and particularly is this true of those attacked by the disease in early summer. These remarks, I may observe, have special reference to such as have been grown for forcing previously, for there is a distinction—a wide one, too—between established pots of this Lily and newly imported ones. It is a great rarity for the latter to produce radical leaves at all the first year but, if the bulbs are strong, they will push forth their flower-stems direct from the bulb. These remarks may or may not be of much importance to those who desire to force this Lily in the future, but they are at any rate the result of observation, and may

perhaps suggest something of greater importance than what is here conveyed.

In the cultivation of this Lily I am convinced that it should be thoroughly established in pots before being forced at all. To be successful with it you cannot pot it too early in the season, and no better time exists in the year than the very week it completes its flowering. Then, and only then, can you catch it with the least possible loss; then it is that the new main roots begin

my advice is to be satisfied with one crop; it is much more natural, and your stock will increase in value thereby. Attempting two crops will soon cause ruin. Those forced early during 1888, say prior and up to Easter, will flower much earlier in 1889, hence the value of successional batches. Our earliest forced of 1888 are quite two months in advance in pushing up their flower-stems, which is another point of advantage in having them established. They were housed a short time since, and are now in a temperature of

NOTES FROM DEVONSHIRE GARDENS.

COLHAYES.—This, the seat of R. Levett, Esq., is situate about a mile and a half from Bovey Tracey station, South Devon, and a short walk brings the visitor to the entrance gates. In close proximity to Colhayes stands the Haytor Rock, whence the granite used in the construction of London Bridge was brought. A tramway of cut granite blocks was laid for a distance of 6 miles, and which was in use before locomotive power came into general use. The causeway stones are now being taken up, to be employed in buildings.

The mansion is situated at about a mile from the entrance, an avenue, consisting of fine specimen trees of *Ulmus campestris*, *Æsculus hippocastanum*, and *Fagus sylvatica*, leading up to it. The outlook into the park and pleasure-grounds from the avenue is delightful, for rare skill is exhibited in the planting, and the beautifully undulated surface is rendered still more charming by the rippling stream, which skirts the avenue for its entire length, here roaring over artistically arranged rocks, and again running on peacefully for a short distance. The garden, for flowers of a style now not so much in favour, covers a large area.

On the north side of the mansion is a fine rockery of considerable extent, whose occupants, at the time of my visit, were growing in great luxuriance, a great number being of very large dimensions. I remarked the following species and varieties:—*Lastrea dilatata*, *L. Filix-mas*, *Polystichum aculeatum*, *Polypodium doryopteris*, and *Osmunda regalis*. In the kitchen garden a large range of fruit and plant houses, pits, &c., are erected, the former being three-quarter spans, and the latter span-roofed. The vineries contain Black Hamburg, Muscat of Alexandria, and Muscat Hamburgs are the only varieties grown, and the reputation gained by the Vines whilst under the superintendence of Mr. J. Moore is still maintained by Mr. Underdown, the present gardener. The immense foliage of these Vines had a firm leathery texture, and the fine large bunches spoke well for his skill in viticulture.

A good number of well trained Peach trees are grown, but only three trees were in bearing at the time of my visit (September 20). The past season was very unfavourable for this fruit out-of-doors in Devon, but a fine Barrington trained against a south-west wall was bearing a large crop of fruit of beautiful colour.

Many beautiful plants are grown in the stove, and in first-class condition, their arrangements being of a very pleasing sort. Planted in tubs and trained along the roof were *Allamanda Hendersoni*, *Stephanotis floribunda*, and *Dipladenia amabilis*; it is seldom that the last-named is found so well done as it is here, the plant being covered with bloom in every part, although Mr. Underdown remarked that it was going off.

The cultivation of the tuberous *Begonia* is well carried out, a large house being devoted to them, besides low pits, for the young seedlings, of which a large number is raised every year. Great pains are taken in the crossing of these plants, the best of the plants raised by Laing, Cannell, and J. Veitch & Sons being employed, so that the collection is now by far the best I have seen in any private garden. Every possible shade of colour is found, and the flowers are of large size and much substance. The double flowers predominate, but the single varieties are not neglected, although less numerous than the former.

Of hardy fruit there was a fair crop, and of vegetables great abundance.

PITT HOUSE is in the immediate neighbourhood of Colhayes, and was recently purchased by Mr. Seale Hayne, M.P. for Mid-Devon, from the executors of the late W. R. Pulsford, Esq. Mr. Dawe, the gardener, has been in office for twenty-five years with the previous proprietor, and his services are now retained by the present one. Mr. Dawe, it may be stated, superintended the making of the gardens.



FIG. 100. — *PINUS COULTERI* IN THE ROYAL GARDENS, KEW. (SEE P. 761.)

to emerge from the base of the bulb, and to secure these intact is of the greatest moment. But it is useless talking thus in mid-winter, some may say, with apparent justification, yet there is still a chance left even now; by procuring imported bulbs and potting at once. Do not attempt to force these, just let them flower at will the first season; meanwhile they will be getting well established, and will prove much better for actual forcing another year than freshly potted ones, especially if the latter are home-grown, and not potted at the time I have indicated. It has been suggested that two crops of flowers may be had in one season, but

from 50°–55°. In our case boxes are used instead of pots, these being 14 inches by 18, and about 9 inches deep, capable of taking a dozen good-sized bulbs; in this way a good many may be put into a small space—an item of importance with market growers. Much has yet to be learnt about forcing this Lily for profit; hitherto considerable discouragement has resulted from impatience on the part of the grower, who has hardly realised yet that better results follow when the bulbs have remained undisturbed for a year or two, in the pots or boxes, than is the case when they are forced. It may be too hard, the first season after potting. *E. Jenkins.*

which are very extensive, his knowledge of landscape gardening standing him in good stead.

INDIO, the seat of Charles Aldenburg Bentinck, Esq., also worthy of mention, has extensive pleasure grounds, ranges of fruit and plant-houses. It is under the charge of Mr. J. H. Hamby, a competent gardener. *W. H. A.*

FIGS IN THE OPEN AIR.

A PARAGRAPH in your issue for September 22, p. 331, referring to the climate of Rothesay, and to some excellent Figs grown in the open air at that place, was interesting for the reason that many persons are under the impression that to attempt to grow Figs in the open air north of London is almost futile; such, however, is not the case, for although I am aware that many fail in the undertaking, and that a good number of places are unsuitable for the growth of the Fig, I could point out places a good distance north of London where, in an average season, Figs thrive admirably, and good crops are ripened in the open air. Some of the finest Figs I ever saw were grown on a south wall at Howick Hall, in Northumberland, where, possibly, one of the finest and most historical Fig trees in the country may be seen. It is, I believe, mentioned in *Thompson's Gardeners' Assistant*. When last I saw it, about a twelvemonth ago, it was a model of health, and bearing an excellent crop of fine fruit, just on the point of ripening. No protection during the winter is now, I believe, given—in fact, I know that during the severe winters of 1885-6 and 1886-7 no protection whatever was given; although I think I am right in saying that slight protection in the shape of Fir and Yew branches was given in former years, but it was found of no great advantage; in fact, practically speaking, it was labour in vain, for equally good crops could be grown when the tree was allowed to take its chance during winter as when smothered up with branches. No special attention was paid to it beyond the usual training and tying in of the branches, although it is only fair to admit that the wall on which the tree is growing was flued, which undoubtedly would have a tendency to assist the ripening of the fruit. No fire-heat, however, was given, unless in very dull and wet seasons, and then only from the end of August until the fruit was ripened. The variety is the Brown Turkey, which is one of the best for open-air culture, and in this case the fruit was of excellent flavour and of a large size, many being upwards of 4 inches in length. Usually Mr. Inglis, the gardener, gathers the fruit and places them on the shelf of a vinery for a day or so, which helps to bring up their flavour greatly. Although liberally treated the tree referred to does not by any means make gross succulent growth, but short sturdy wood so essential in open-air Fig culture. This, undoubtedly, is the secret of success, and to attain that end no pains should be spared. Too frequently Figs are planted in rich soil, which induces them to make gross growths of a succulent nature; consequently when the winter comes, even if protected, the fruit for the coming year's crop is injured, and oftentimes the wood itself killed.

Again, trees growing in the open are sometimes neglected as regards pinching the points of the shoots and thinning the branches, and when such is the case success cannot be expected. No fruiting shoots should have their points pinched nor should they be fastened closely to the walls, but allowed to spring away slightly. Many growers make a great mistake here in tying in the points closely, by which a vast quantity of fruit is injured. In southern counties, of course, bushes and standards may, and frequently are grown, though those contemplating outdoor Fig culture cannot do better than to direct their attention to wall trees only. *C. C.* [The Fig tree spoken of here owes its fruitfulness, doubtless, to age, as we know that the weaker growth due to age favours a constant fruiting habit. This tree measured 45 feet in breadth, and 12 feet in height, = 540 square feet, forty years ago, and was then an excellent grower, but it was occasionally found necessary to partially ring the main branches to check grossness in the shoots. It has been known

to bring to maturity 600 fruits in one year, which, had they been all sold, would have fetched in Newcastle-on-Tyne, at the then price of 6s. per dozen—£15. *Ed.*]

HOME CORRESPONDENCE.

RHODODENDRON BALSAMINÆFLORUM ALBUM.

—This beautiful garden hybrid is now beautifully in flower in Messrs. Veitch's nursery. It seems to be quite a winter flowering species, as I have seen it for the last two or three years in flower in the month of December. The flowers, produced in large trusses, remind one of those of the Tuberoze. The flowers last much longer in good condition than those of the single-flowered varieties. There is also a variety with bright yellow flowers, and the flesh-coloured variety is named *carneum*. The flowers must be exceedingly valuable for cutting to make up into all sorts of bouquets, large or small. They are certainly very valuable for decorative purposes when grown on the plants. A few of the best newer single-flowered varieties at present in flower are—*Ophelia*, rosy-salmon; *Lord Wolseley*, rich orange; *Princess Christian*, yellow; *Thetis*, yellow, reddish centre—very fine variety; *Empress*, salmon-red and rose-colour. *J. D.*

STACHYS TUBIFERA OR CHINESE ARTICHOKE.

—We have been amused at the suggestions from various sources of a popular name for this plant, and with due deference to all that have appeared, we think it will still be found that the "Chinese," or perhaps more correctly speaking, the "Japanese Artichoke" is the most appropriate title. It is fully certain, both in the general appearance of the tuber and the habit of reproduction—in fact, in all essential particulars in its growth—the plant has a great deal of the character of the tuberous-rooted Artichoke, and we therefore are of opinion that the name either Chinese or Japanese Artichoke meets every requirement. *James Carter & Co.*

ARDISIA MAMILLATA.—This distinct species, figured in the *Gardeners' Chronicle* December 31, 1887, p. 809, is now to be seen in berry in Messrs. Veitch's nursery at Chelsea. The foliage is exceedingly pretty, of a beautiful grass-green, the upper surface thickly studded with small teat-like elevations or mamillæ. Both in foliage and in its dwarf habit it is superior to the old well known *A. crenulata*, and, like it, it is well furnished with its glossy coral-red berries. It is said to be furnished with berries all through the winter. It is certainly the most seasonable plant recently introduced. It has been introduced by Messrs. Veitch from the Botanic Gardens, Hong Kong, and requires stove culture. *J. D.*

ANTHRACITE COAL.—I have now for some seven years made a study of the use of this kind of fuel, and I have also compared its price with that of coke, and the result of my experience has been such as to lead large consumers, like Mr. C. Dorman and Mr. Cobb, of Sydenham, to make use of the coal, and many others have adopted it. Those of the consumers who have large collections of Orchids, which need considerable amount of heat, could tell exactly what a saving it has been to them. I have tried many different sorts of anthracite coal, but have decided in favour of that of Mr. Essery, of Swansea, which is supplied in large blocks. The first cost of the coal is not high, but the heavy fare the railway companies charge for carriage brings it to about 17s. 9d. to 18s. per ton, delivered at Penge Station; Then we have to put on 1s. to 1s. 9d., according to the distance to which it has to be carted. At Sydenham coke rules at from 8d. to 1s. 1d. per cwt., which is equal to 13s. 4d. and £1 1s. 8d. per ton, which, with 2s. per ton for delivery, makes it as dear as anthracite, and, moreover, the coke has lost three-fifths of its heat-giving properties. In using the anthracite coal, I have found it very necessary to have a furnace with a good draught, and to see that the coal is fully consumed. The way to do this is to examine the ash-heap after removal from the furnace, and exposed to a shower of rain, when, if the heap looks black and glistens, then you know that a better draught is wanted, or that your men have been raking the fire, as is customary with coke fires. A fire made up in the morning with this coal does not want touching till night, and if the fuel is not piled on in large quantities it will give a bright flame. It is a mistake to

block up the furnace, as is done, with coke. *Thos. Christy, F.L.S.*

INSECTS ON FRUIT TREES.—In some parts of Gloucester, Hereford, and Worcester, the Apple crop of the past season was much injured, and in some places utterly destroyed by the caterpillars of various moths, the ermine moth and the winter moth being especially destructive. With the view to protect my fruit trees from the egg-laying, wingless, female moths, I put cartgrease and tar round the stems of the trees, thus trapping thousands of moths; but in their efforts to get free some have evacuated their eggs on the tar. Will you or some of the numerous readers of your valuable paper, be good enough to inform me how I can destroy the eggs? I can scrape many off, but many will be left. A solution of corrosive sublimate, or sulphate of copper, would destroy their fertility, but I hesitate to use so drastic a remedy, lest I should injure the bark of the trees. *A. B., Dymock, Gloucester.* [Put more tar or grease on the strip of paper fixed on the trees. *Ed.*]

CHRYSANTHEMUM MRS. COBAY.—I have no doubt but that the explanation of the above obvious error suggested itself to the mind of one so well informed on Chrysanthemums as "E. M." I was naming the varieties of incurved Chrysanthemums that came under the Prince of Wales type, and what I wrote was as follows: "They are the new varieties described above, viz., Miss M. A. Haggas and Miss Violet Tomlin; Mr. Cobay and Mrs. Heale." A semicolon should appear after Tomlin, and Mrs. is a misprint for Mr. Cobay. *R. D.*

PLANTING HERBACEOUS PLANTS.—I have read with interest the remarks of your correspondents, Messrs. Horsefield and Jenkins, on herbaceous plants and borders. The method of planting in lines of this or that plant I can hardly approve of. To my notion it is better to plant patches—that is to say, a good quantity of one variety in a certain place in the border, with an equal quantity of another suitable plant in fairly close proximity to it. The autumn-flowering Anemone may be taken as an instance; of these we grow three distinct colours, the white variety, that called *elegans*, and *A. japonica*. Now to put out these plants in straight lines would not only annoy any person of good taste, but it would, in my opinion, spoil the whole arrangement. I rather incline to having good breadths of one thing with suitable colours to harmonize; and to disregard the height provided the smaller things are not crowded by them. It is now ten years since I formed a border some 100 yards long and 10 feet wide, and planted it with about 200 species and varieties; and since that time the soil has never been dug, but the weeds have been removed by hand, and an annual top-dressing afforded of good loam and burnt earth mixed with a quantity of spent Mushroom dung. That this kind of treatment suits the plants is proved by the abundance of flowers that are cut annually. In the space of this note the names of the plants cannot be given; suffice it to say that we despise nothing, but if a plant is considered weedy, or too rampant, it is consigned, not to the rubbish heap, but to a spot in a wood which is set apart for the purpose. Then we are constantly widening the border, selecting new sites for certain subjects, giving those that are doing well more space to grow, and affording suitable soil, &c., for any that may not be giving satisfaction. One of the best of recently introduced border plants is *Heuchera sanguinea*, figured at p. . . The plant is easily raised from seed, and will flower the first year. I think there is more pleasure in getting together a collection of these hardy plants and watching them thrive than there is in the ordinary short lived summer bedding plants; nevertheless, I am not an advocate for neglecting this or any other department of the garden. *C. Merritt, Hoo Gardens, Kimpton, Welwyn.*

PLANT PORTRAITS.

ANGRECEM SANDERIANUM. *Revue Horticole*, November 16.—(*Gard. Chron.*, 1888, i., 168.)

CATASETUM FIMBRIATUM VAR. FISSUM. *Rev. de l'Hort. Belge*, December.

EULOPHIA MACULATA. *Gartenflora*, t. 1285.—Terrestrial Orchid, with insignificant flowers, but prettily mottled leaves.

PEONY VENUS. *Garden*, November 17.

PITIOSPORUM PHYLLOIDES. *Bull. Soc. Tosc. deortic.*, November.

FLORISTS' FLOWERS.

THE RANUNCULUS.

I CAN look back with pleasure upon a very large border containing several thousands of Ranunculus plants in full bloom last year in June. As an example of a florists' flower the double Ranunculus is a model of form, and it certainly surpasses all others in the variety and brilliancy of its colours. Unfortunately much of the good work done some fifty years or more ago by the Rev. Joseph Tyson, of Wallingford, Berks, has been lost, and is now almost forgotten. I can remember some of his richly coloured and beautiful flowers. Many persons grew a bed or more of them, but many of the colours are not to be seen in a modern collection. There were black and white varieties; purple and violet; orange, yellow, and straw-colours; crimson, red, and rose; others were spotted, striped, or edged like Picotees; the colours scarlet and gold, mixed, being very pretty. We have many raisers of Auriculas, Carnations, Dahlias, Tulips, &c., but though the Ranunculus can be raised as easily as any of them from seeds, no amateur that I know of has of late taken it under his protecting care.

In former days florists would give a guinea for a single tuber of a scarce variety of Ranunculus; now a good-sized bed can be obtained for that sum. Most of the Continental varieties, sent in mixture, and sold at a cheap rate, are of good form, but they lack brightness and variety of colour. The bed to be planted with the roots should be prepared at once, if it is not already done. They like a rich, deep, clayey loam, which ought to be kept in a moderate state of moisture. Ordinary kitchen garden soil suits them admirably. I plant any time when the weather is favourable, either in February or March. The bed, or border, is made quite level, and the rows are marked out by pressing an inch board into the soil about an inch and a half; this makes the bottom of the drill quite level. Place the tubers in it with the claws downward, and cover over with fine soil; the tubers may be planted about 3 inches apart, and 4 inches between the rows. Put a pinch of sand over each tuber, and cover with fine soil.

Seedling raising may be practised in any garden, however limited. It is most interesting amusement to raise seedlings of any florists' flowers, the Ranunculus particularly so. It requires two types of Ranunculus to raise seedlings from. Pollen may be obtained from double flowers, the more double the better. Seeds must be saved from semi-double varieties, or from semi-double approaching to double-ness. Commence to cross the flowers as soon as they are fully open. Ten o'clock in the morning is a good time to perform the operation of hybridising; I generally go over them twice daily—in the morning at ten, and in the afternoon from one to three. When the impregnated seed-vessels begin to swell, the stems should be tied to a neat stick, to prevent their being broken; and when the seeds are about ripe, which can be observed by the seed-vessels turning brown, they ought to be gathered, and laid out on paper in a dry airy place. The seeds may be sown early in January in shallow boxes or seed-pans. The compost should be three or four parts loam to one of leaf-mould, and a little fine sand to keep the whole porous. Make the surface quite level, and sow thinly, using just enough fine mould to cover the seeds. The pans or boxes should be placed in a frame; but this is not absolutely necessary, as Mr. Tyson recommended placing them under a north wall, merely protecting from heavy rains. Frost, however, is injurious, so that it is much better to have them under glass. The young plants will appear in a month, and as they advance in growth give plenty of air. The lights may be removed altogether in May, or the boxes containing the plants should be turned out-of-doors, not exposed too freely to the sun, as this might be injurious by causing the leaves to wither prematurely. They ought not to decay until July, and as soon as they do decay take the small tubers out of the ground,

and store them in a dry cool place in dry sand. Plant them out in February with the old roots, at the same depth, and the same distance apart. They will flower as well, or perhaps more strongly, than the old tubers. Peaty soil of some kinds is excellent for growing the Ranunculus in. Mr. Simonite, of Sheffield, told me that the best bed he ever saw was in a small garden in the corner of a peat moor, where the soil was nothing but sandy peat. I tried the experiment of planting the tubers in beds of the usual Heath and Azalea peat, and it answered admirably; but one season something was wrong with the peat, and half the plants died, while the other half made but poor growth, and flowered badly. In dry seasons water should be applied freely, as their growth is stopped directly if they become very dry at the roots; but they do best in a wet season, as we never had a better bloom than last year; natural showers suit them much better than artificial ones. An important point in their culture is to take up the tubers as soon as the leaves become yellow; if they are allowed to remain in the ground they will start into growth almost immediately. *J. Douglas.*

TUNISIAN DATES AND THE PRODUCE OF THE CORK FORESTS.

THE British Consul at Tunis describes the Dates of that country as much superior to those produced in any other part; "and yet," he says, "they are little known in England. Their great abundance and their cheapness make it difficult to understand why a large commerce is not carried on in this fruit. They are the produce of the extensive oases in the south of Tunis, those of Jerid and Tuzeur being the most extensive. The Date Palm grows all over the Regency, but the few trees met with in the north do not ripen their fruit from want of the requisite heat. Even the Palm Trees of the oasis of Gabes, situated in lat. 34°, produce an indifferent fruit, owing to its proximity to the sea, which reduces the temperature of the air. The Arab saying is that the Date Palm loves to have its feet in the water and its head in the fire, which graphically expresses the craving of this tree for moisture and heat. The best quality of Date is that known by the name of Degla, which is large, tender, very sweet, with skin unwrinkled, and of a golden brown. These are exported chiefly to France. In the market at Tunis this quality sells retail at 3d. a pound.

As steamers coming direct for Liverpool call at Gabes for Alfa, it is surprising that a more extensive trade is not carried on in this fruit. It constitutes the principal food of the Arabs, the Oasis of Tuzeur alone producing annually about 16,000,000 lb. The average annual exportation does not exceed a value of £12,000."

Referring to the Cork forests of Tunis, it is stated that these forests, situated in the north, near the Algerian frontier, have only recently been taken in hand by the government. The surface covered by the forests amounts to 300,000 acres, and forms part of the State domain. The sale of trees last year, it is said, realised as much as £15,000. The duty formerly imposed on this product has just been removed. In the course of a few years a considerable revenue will be derived from the cork, which, as the trees have only recently been begun to be stripped of the virgin bark is not yet of mercantile value.

MARKETS.

COVENT GARDEN, December 27.

NOTHING doing, owing to the holidays. *James Webber, Wholesale Apple Market.*

FRUIT.—AVERAGE WHOLESALE PRICES.

s. d. s. d.		s. d. s. d.	
Apples, half-sieve...	2 0- 4 6	Lemons, per case	12 0-21 0
—Canada and Nova	—	Peaches, dozen	2 0- 6 0
—Scotia, per barrel	10 0- 18 0	Pine-apples, Eng., lb.	1 6- 2 0
Cobs, 100 lb.	100 0-110 0	—St. Michael, each	2 0- 8 0
Grapes, per lb.	0 6- 3 0		

VEGETABLES.—AVERAGE RETAIL PRICES.

s. d. s. d.		s. d. s. d.	
Asparagus, English,	per 100	Mustard and Cress,	punnet
—French, bundle	1 0- 0 0	Onions, per bunch	0 5- 0 0
Beans, Jersey and	—	Parsley, per bunch	0 4- 0 0
—French, per lb.	1 6- 0 0	Peas, French, per lb.	1 0- 0 0
Beet, red, per dozen	1 0- 2 0	Potatoes, per cwt.	4 0- 5 0
Carrots, per bunch	0 6- 0 0	—kidney, per cwt.	4 0- 6 0
Cauliflowers, each	0 3- 0 0	—new French, lb.	0 6- 0 0
Celery, per bundle	1 6- 2 0	Rhubarb, bundle	0 6- 0 0
Cucumbers, each	1 0- 0 0	Sauerkale, punnet	2 6- 0 0
Endive, per dozen	3 0- 0 0	Shallots, per lb.	0 6- 0 0
Green Mint, bunch	1 0- 0 0	Spinach, per bushel	4 0- 0 0
Herbs, per bunch	0 6- 0 0	Tomatoes, per lb.	2 0- 0 0
Lettuce, per dozen	1 6- 0 0	Turnips, per bunch,	new
Mushrooms, punnet	1 6- 0 0		0 5- 0 0

POTATOES.—Beauty of Hebron, 80s. to 100s.; Imperators, 70s. to 90s.; Dumber Regents, 110s.; do. Magnums, 120s.; and York Magnums, 100s. per ton.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.		s. d. s. d.	
Aralia Sieboldi, doz.	6 0-18 0	Ferns, in var., doz.	4 0-18 0
Azaleas, dozen	24 0-42 0	Foliage plants, vari-	ous, each
Chrysanthemums, doz.	4 0- 9 0	—Ficus elastica, each	1 6- 7 0
—large plants, each	2 0- 4 0	Hyacinths, dozen	9 0-10 0
Cyperus, per dozen	4 0-12 0	—Rom., doz. pots	9 0-10 0
Dracena terminalis,	—	Lily-of-Val, doz. pts.	36 0-42 0
—per dozen	30 0-60 0	Marguerites, doz.	6 0-12 0
—viridis, per doz.	12 0-24 0	Palms in var., each	2 6-21 0
Epiphyllums, doz.	18 0 30 0	Pelargoniums, scar-	let, per dozen
Erica bymalis, doz.	12 0-24 0	—Poinsettias, dozen	9 0-15 0
—caffra, dozen	6 0-12 0	Primulas, per dozen	4 0- 6 0
—gracilis, dozen	8 0-12 0	Solanums, dozen	9 0-15 0
Euonymus, in var.,	—	Tulips, dozen pots	6 0- 9 0
—per dozen	6 0-18 0		
Evergreens, in var.,	—		
—per dozen	6 0-24 0		

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.		s. d. s. d.	
Abutilons, 12 bun.	3 0- 6 0	Mignonette, 12 bun.	2 0- 4 0
Azaleas, 12 sprays	0 9- 1 0	Narciss., paper-white,	—
Bouvardias, per bun.	0 9- 1 6	(French), 12 bun.	3 0- 6 0
Camellias, 12 blms.	3 0- 4 0	—double, 12 bun.	3 0- 4 0
Carnations, 12 blms.	2 0- 3 0	Pelargoniums, 12 spr.	1 0- 1 6
Christmas Roses, 12	—	—scarlet, 12 spr.	0 6- 1 0
blooms	0 6- 1 6	Poinsettias, doz.	4 0- 9 0
Chrysanthemums,	—	Primulas, dbl., 12 spr.	1 0- 1 6
12 blooms	0 6- 3 0	Roses, Tea, per doz.	1 0- 3 0
—dozen bunches	4 0-12 0	—coloured, dozen	2 0- 4 0
Eucharis, per dozen	4 0- 8 0	—red, per dozen	1 0- 2 0
Gardenias, 12 blooms	6 0-12 0	—Saffron, dozen	2 0- 3 0
Heliotropes, 12 spr.	0 6- 1 0	Stephanotis, 12 spr.	6 0- 8 0
Hyacinths, Roman,	—	Tuberose, 12 blms.	1 6- 2 0
12 sprays	1 0- 1 6	Tulips, 12 bunches	1 0- 2 0
Lapageria, 12 blooms	1 0- 2 0	Violets, 12 bunches	1 0- 1 6
Lilac, white Fr., bun.	5 0- 7 0	—dark, Fr., bunch	1 6- 3 0
Lily-of-Val., 12 spr.	0 9- 1 6	—Parma, Fr., bun.	4 0- 5 6
Marguerites, 12 bun.	3 0- 6 0		

CORN.

Averages.—Official statement showing the average price of British corn, imperial measure, in the week ended December 22:—Wheat, 30s. 8d.; Barley, 26s. 11d.; Oats, 16s. 3d. For the corresponding week in 1887:—Wheat, 30s. 10d.; Barley, 28s. 11d.; Oats, 16s. 7d.

NOTICES TO CORRESPONDENTS.

INTELLIGENT READERS, do PLEASE NOTE that letters relating to ADVERTISEMENTS, or to the supply of the Paper, should be addressed to the PUBLISHER, and that all communications intended for publication, as well as specimens and plants for naming, should be addressed to the EDITOR. Such communications should be written on one side only of the paper, and sent as early in the week as possible. Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

Books: *Lady Story*. The *Orchid Grower's Manual*, by B. S. Williams, Victoria Nurseries, Upper Holloway, London, N.—P. *Plant Life* (Bradbury & Co.), or the articles in Cassell's *Popular Gardening*.

BOUVARDIAS STRIKING IN MOSS: *Psychotria*. We have no experience of this method of raising the plants. It answers with such widely different plants as double-flowered Primulas and Indian Azaleas, and may be equally successfully applied to the Bouvardia.

CAMELIAS: *E. W.* As the hot-water pipes have been "varnished," it is very probable that the fumes of the coal-tar and naphtha, used in the preparation of this coating, are the cause of the leaves falling. No. 1. The flower-buds may fall off from the same cause, or from bad potting, as you say the soil is not made firm. When the potting soil is not made firm, the water scarcely wets the old ball, but runs away through the new soil. The growth is

stunted and thin, indicating a starved state of the plant. No. 2 shows worse conditions than No. 1. The temperature of your house is right. Burn off the varnish at once—but first taking all plants out of the house, and repot the Camellia plants now; there would be no harm done under the circumstances, and should the old balls of soil be found to be dry, soak them for some hours in water before repotting. Use sandy loam, burnt earth, with a little leaf-mould

DUCHY OF LUXEMBOURG: *T. J.* There is no book that we know of treating of the climate, soil, &c., of the Duchy. The high land, consisting of a part of the Ardennes, is composed of calcareous soil, and grows nothing but timber, Rye, Oats, and Potatoes; the lower lands are very fertile. A poor wine is made on the banks of the Moselle and Sûre. Great numbers of horned cattle and sheep are found in the lowlands. We should think it well adapted for commercial fruit growing.

NAMES OF PLANTS: *G. Mantin.* 1, Catasetum longifolium; 2, probably a Lockhartia, but the lip (the important feature) is withered; 3, specimen insufficient; 4, Epidendrum inversum; this is more like what a specimen should be, if it were only fresh; 5, not recognisable; 6, Masdevallia, probably nidifica; but why send such a dried-up specimen? 7, Oncidium sp.; 8, was hardly large enough for us to see whether it was a flower or not. You must really send better material in all cases.—*W. W.* 1, Pinus Laricio; 2, Pinus Laricio var.; 3, Pinus Pallasiana; 4, Picea Morinda.

ROMNEYA COULTERI: *T. G. C.* See "Answers to Correspondents," p. 680 of our issue for December 8 last.

TURNIPS: *W. and J. Brown.* The roots sent show clear signs of hybridisation having taken place between the Swedes and Turnips. The flesh of the hybrids, which is firm and sweet, partakes in colour of the Turnip, but the foliage is more like that of the Swede, whilst the flavour is about intermediate between the two. If the Turnip has not imparted tenderness to the bulbs no great harm would seem to be done.

CATALOGUES RECEIVED.

STANSFIELD BROTHERS, Southport—Alpine and Hardy Perennials.

WM. FELL & CO., Hexham—Forest Trees, &c.

SUTTON & SONS, Reading—Amateur's Guide.

H. and F. SHARPE, Wisbech—Seed Potatoes.

JAS. DICKSON & SONS, 32, Hanover Street, Edinburgh, N.B.—Abridged List of Trees.

HENDERSON & SONS, Den Nurseries, Brechin, N.B.—General Nursery Stock.

PUTZ & ROSS, Erfurt, Prussia.—Trade List.

W. GRATCHEFF, St. Petersburg—Novelties in Vegetables, and Wholesale Price List of Cabbages, Melons, Radishes, Carrots, &c.

DICKSONS (LIMITED), Chester—Vegetable and Flower Seeds.

FREDERICK ROEMER, Quedlinburg, Germany—Flower, Vegetable, and Agricultural Seeds.

STUART & MEIN, Kelso, N.B.—Amateurs' Guide and Spring Catalogue.

COOPER, TABER & CO., 90, Southwark Street, London, E.C.—Wholesale Catalogue.

C. FIDLER, Royal Berkshire Seed Stores, Reading—Vegetable Seeds and Seed Potatoes.

SAMUEL FOX ARMITAGE, Victoria Street, Nottingham—Wholesale Seed List.

CLDE. SAHUT, Avenue du Pont Royal, 10, Montpellier, Herault, France—Fruit, Forest, and Ornamental Trees, &c.

JAMES VEITCH & SONS, Royal Exotic Nursery, King's Road, Chelsea, London, S.W.—Seeds and Implements.

COMMUNICATIONS RECEIVED.—*J. H. Hart*, Trinidad, photograph (with many thanks).—*Professor Henriquez*, Coimbra, photograph (with many thanks).—*J. D. D.*—*Sir T. L.*—*H. W. W.*—*W. S.* (all communications were duly received).—*W. H.*—*A. Ward*.—*Jas. W.*—*P. McC.*—*D. M. de L.* (Marche).—*Max Leichth.*—*J. S. R.*—*W. E. G.*—*W. R.*—*H. J. R.*—*W. C.*—*W. H. R.*—*R. A.*, Natal.—*Sampson Low & Co.*—*R. D.*—*G. P. E.*—*R. D.*—*G. P. R.*—*R. W. Adlam*.—*R. A. R. M. L.*—*H. H.*—*J. J. W.*—*H.*—*H. H. W.*—*B.*—*F. R.*

DIED, on the 23rd inst., WILLIAM ALEXANDER RICHARDS, of 59, Lupus Street, Pimlico, aged seventy-six.

— Also, on Christmas Day, Mr. CHARLES HOWE, Head Gardener to Sir R. F. Sutton, Bart., Benham Park, Newbury, Berks.

Notice to Advertisers.

THE GARDENERS' CHRONICLE

FOR

SATURDAY NEXT, JAN. 5, 1889,

WILL CONTAIN AS A

SUPPLEMENT

AN

INK PHOTO

OF THE

GRAND CASCADE,

WILHELMSHÖHE, near CASSELL;


ALSO A

Sheet Almanac.

As a large EXTRA circulation of this

Number is guaranteed, it will be a very

valuable medium for Advertisements.

 Advertisers desirous of securing space in

this Number are requested to communicate not

later than DECEMBER 31, with the Publisher,

W. RICHARDS,

41, WELLINGTON STREET, STRAND,

LONDON, W.C.

SEEDS

VEGETABLE & FLOWER SEEDS,
SEED POTATOES, GARDEN TOOLS & SUNDRIES.

All of finest quality. Prices Strictly Moderate.
Delivered free by Rail or Parcel Post.

Illustrated Descriptive Priced Catalogue, No. 353,
POST FREE ON APPLICATION.

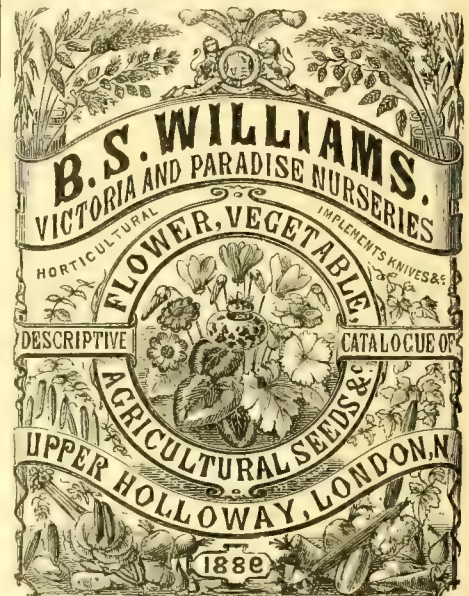
DICKSONS

(Limited)

The Royal Nurseries & Seed Establishments,

Chester.

ADDRESS FOR
LETTERS & TELEGRAMS: } Dicksons, Chester.



The above is Now Ready, and will
be forwarded Gratis and Post-free to
all applicants.

HARRISON'S

TRADE MARK.

GENERAL CATALOGUE

OF THEIR CHOICE

LEICESTER SEEDS

Post-free on application.



REGISTERED.

HARRISON & SONS,
SEED GROWERS, LEICESTER.

SANKEY'S FAMOUS GARDEN POTS.

Best, cheapest, lightest, strongest.

SANKEY'S FAMOUS GARDEN POTS.

Best colour, shape, and finish; enormous stocks.

SANKEY'S FAMOUS GARDEN POTS.

No waiting; orders executed within one hour of letter or telegram. Thirty different sizes. Carriage and breakage free on £10 orders; half carriage on £5.

RICHARD SANKEY AND SON, Bulwell Potteries, Nottingham.

CARSON'S PAINT

Patronised by 16,000 of the Nobility, Gentry,
and Clergy, for all kinds of

OUTDOOR WORK, CONSERVATORIES,
Greenhouses, Frames, &c.

1 Cwt., and Oil Mixture, Free to all Stations.

Liquid Non-Poisonous Paints for Inside of Conservatories, &c.
Prices, Patterns, and Testimonials, Post-free.

LA BELLE SAUVAGE YARD, LUDGATE HILL, E.C.
BACHELOR'S WALK, DUBLIN.—Discount for Cash.



STANDEN'S Established Over 20 Years. MANURE

Exceeds all others in general fertilising properties and staying powers.

It promotes a rapid, healthy, and robust growth to plants generally.

It is a clean and dry powder, with very little smell. It is consequently particularly adaptable for ladies interested in plant culture.

The highly fertilising properties of this Manure render its money value, in comparison with other manures, at least double; and users will find that very small quantities will produce favourable and lasting results.

Sold in Tins, 1/-, 2/6d, 5/6, and 10/6 each; and in Kegs (free) at Reduced Prices, 28 lbs., 12/6; 56 lbs., 23/-; 112 lbs., 42/- each.

SOLE MANUFACTURERS:

CORRY, SOPER, FOWLER & CO.

(LIMITED).

16, Finsbury Street, London, E.C.

SOLD BY ALL SEEDSMEN AND NURSERYMEN.



GARDEN REQUISITES.

TWO PRIZE MEDALS.

Quality, THE BEST in the Market. (All sacks included.)
PEAT, best brown fibrous ... 5s. per sack, 5 sacks for 22s. 6d.
PEAT, best black fibrous ... 4s. 6d., " 5 sacks for 20s.
PEAT, extra selected Orchid ... 7s. 6d., " 5 sacks for 35s.
LOAM, PREPARED COMPOST ... 1s. per bush., 3s. per sack
LEAF, or PEAT MOULD ... (sacks included).
SILVER SAND, coarse, 1s. 6d. per bush., 14s. half-ton, 24s. ton.
RAFFIA FIERE, best only ... 1s. per lb.
TOBACCO CLOTH, or PAPER ... 1s. lb.; 28 lb., 27s.
SPHAGNUM MOSS, all selected, 3s. per bush., 8s. per sack.
CHUBB'S "PERFECT" FER-

TILIZER (the Best Food for all kinds of Plants, Flowers, Fruits, Vegetables, &c. ... Tins. 7lb. 14lb. 28lb. 56lb. 1 cwt.
1/8 3/- 5/- 8/- 14/- 22/-
CRUSHED BONES, or Bone Dust 1/2 2/- 3/6 16/- 12/-
VIRGIN CORK (Best Quality only) ... 3/- 5/6 10/6 17/-
RUSSIAN MATS, BAMBOO CANES, PERUVIAN GUANO
NITRATE OF SODA, HORTICULTURAL CHARCOAL, &c.
PEAT MOSS LITTER, cheapest and best Bedding for Horses and Cattle, £2 per ton. Extra large Sample Bales, 6s. each. Also prepared for Poultry Pens, Rabbits, &c., in Sacks, 1, 6 lb. each.
COCOA-NUT FIBRE REFUSE (by Chubb's special process), sacks, 1s. 4d. each; 10 sacks, 12s. 6d.; 15 sacks, 17s. 6d.; 20 sacks, 20s.; 25 sacks, 24s.; 30 sacks, 27s.; 40 sacks, 35s.; 50 sacks, 40s.; Truck-load, loose, free on rail, 30s. Limited quantities of G., special quality granulated in sacks only, 2s. 6d. each
SPECIAL MANURES, for Farmers, Agriculturists, Market Gardeners, and others (concentrated into a Dry Powder).
CHUBB'S "PRODUCTIVE" MANURE, in bags, £3 per ton (bags included); sample 1 cwt. bags, 4s., producing extraordinary results, and worth four or five times the actual cost. Try it against any other manure, no matter what price.
CHUBB'S "COMPOUND SOOT AND SEWAGE" MANURE, in bags, £2 per ton (bags included); sample 1 cwt. bag, 3s., made principally (by special process) from London Soot and Sewage with other fertilizing agents.

Terms strictly Cash with order. Bankers, Union Bank of London.
CHUBB, ROUND & CO.,
WEST FERRY ROAD, MILWALL, LONDON, E.

ORCHID PEAT, best quality; **BROWN FIBROUS PEAT** for Stove and Greenhouse use. **RHO-**
DODENDRON and **AZALEA PEAT**. Samples and Prices to
WALKER AND CO., Farnborough, Hants.

BONES!—BONES!!—BONES!!!

Crushed Bones in all sizes for Vine Borders, Lawns, Potting, Grass Land, &c. Also BONE MEAL for Poultry Feeding. GARDEN GUANO, DISSOLVED BONES, Special MANURES and FERTILIZERS for all purposes.

For Prices, apply to

HARRISON, BARBER & CO. (Limited),
GARRETT LANE, WANDSWORTH, SURREY, S.W.

BENTLEY'S INSECTICIDE.

Is superseding the use of other Insecticides.

Used by nearly all the Leading Gardeners. 1 Gallon, 8s.; 1/2 Gallon, 5s.; 1 Quart, 3s. 6d.; 1 Pint, 2s. Testimonials and full particulars upon application.

J. BENTLEY,

Chemical Works, Barrow-on-Humber, Hull.

GARDEN REQUISITES.

COCOA-NUT FIBRE REFUSE.

4d. per bushel; 100 for 25s.; truck (loose, about 2 tons), 40s.; 4 bushel bags, 4d. each.
LIGHT BROWN FIBROUS PEAT, 5s. 6d. per sack; 5 sacks, 25s.; sacks, 4d. each.

BLACK FIBROUS PEAT, 6s. per sack, 5 sacks, 22s.; sacks, 4d. each.

COARSE SILVER SAND, 1s. 9d. per bushel; 15s. per half ton; 26s. per ton, in 2-bushel bags, 4d. each.

YELLOW FIBROUS LOAM, PEAT-MOULD, and LEAF-MOULD, 1s. per bushel.

SPHAGNUM MOSS, 8s. 6d. per sack.

MANURES, GARDEN STICKS, VIRGIN CORK, TOBACCO CLOTH, RUSSIA MATS, &c. Write for Price List.—

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PEAT FOR ORCHIDS,

CHOICE PLANTS, FERNS, HEATHS, AZALEAS, &c.

EPPS & CO. are now prepared to offer PEAT, as above, of first-class quality, at lowest prices. Send for Samples, Price List and Testimonials. Depot for HORTICULTURAL SUPPLIES, LOAM, SAND, LEAF-MOULD, SPHAGNUM, COCOA FIBRE REFUSE.

PEAT MOSS LITTER.

EPPS & CO., Ringwood, Hants.

JENSEN'S GUANOS are the most perfect Fertilisers. Promote and Sustain all Growths. Do not Exhaust, but Enrich the Soil. Analyses Guaranteed.

Six Prize Medals awarded in 1888.

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PASTUPLANTA, the best Artificial Manure.

It enriches the soil with the fertilisers drawn from it by plants; no unpleasant smell; admirably adapted for all pot plants; 1a bags: 112 lb., 19s.; 56 lb., 11s. 3d.; 28 lb., 6s. 9d.; 14 lb., 4s.; 7 lb., 2s. 3d. In tins, 1s. each. Sole Manufacturers, PHILIP HARRIS AND CO. (Limited), 9, Bull Ring, Birmingham.

BEESON'S MANURE.—The Best and Cheapest Fertiliser for all purposes.

Write for Circular containing the Leading Gardeners' and Market Growers' Reports. Sold in Tins, 1s., 2s. 6d., 5s. 6d., and 10s. 6d. each, or 1 cwt. Bags, sealed, 13s. By all Seedsmen, or apply direct to W. H. BEESON, Carbrook Bone Mills, Sheffield.

GISHURST COMPOUND, used by leading Gardeners since 1859 against Red Spider, Mildew, Thrips, Green Fly, and other Blight.

1 to 2 ounces to the gallon of soft-water; 4 to 16 ounces as winter dressing for Vines and Orchard-house Trees; and in latter from the cake against American Blight. Has outlived many preparations intended to supersede it. Boxes, 1s., 3s., and 10s. 6d.

GISHURSTINE keeps Boots dry and soft on wet ground.

Boxes, 6d. and 1s., from the Trade Wholesale from PRICE'S PATENT CANDLE COMPANY (Limited), London.

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Straining Bolt and Holdfast.—No. 635.

As illustrated above, price 3s. and 4s. per dozen.

Driving Eyes.—No. 631. Terminal Holdfasts.—No. 633.



2 2 3 3 inches. No. 632A. 2s. 6d.

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Best Galvanised Wire. 1/3, 1/6, 1/9 per 100 yards.

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STOVE, Portway's. Will heat 120 feet of 4 inch pipe, quite new. Price £2 10s.; cost 2s.; and will be sent free to any railway station. Apply to THOMAS CRIPPS and SON, Tunbridge Wells Nurseries, Kew.

To Nurserymen, Seed Merchants, and Florists.

J. BLACKBURN and SONS are offering Archangel Mats lower than any other house in the trade; also Petersburg Mats and Mat Bags, Raffia Fibre, Tobacco Paper, and Shading. Prices free.—4 and 5, Wormwood Street, E.C.

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8s. 6d. per 100 feet 15 oz. 12x10, 18x12, 18x14, 24x14, 14x12, 20x12, 18x16, 24x16, 16x12, 16x14, 20x16, 24x18, &c. Putty, 6s. 8d. per cwt.; White Lead, genuine, 21s.; Our Speciality, 17s. 6d. per cwt.; Paints ground in Oil, Stone Ochre, 20s.; Oxford Ochre, 24s.; Green, 16s.; Black, 16s. per cwt.; Varnish, from 5s. 6d. per gal.—Full Price List on application to **THE CHEAP WOOD COMPANY**, 95, Bishopsgate Street Within, London, E.C.

SANKEY'S "MARKET POT," or **LONG TOMS**, the best "Garden Pot" for Bedding Plants and Market Work. The 3-in. Market Pot holds as much soil as an ordinary 3 1/2 in. pot, thus saving half an inch in room for each pot. Five sizes, 3 in., 3 1/2 in., 4 in., 4 1/2 in., and 5 in.; no rims, nearly upright, an inch to 1 1/2 inches deeper than usual, very strong and much lighter in weight—the very pot for Market Growers; great economy in room and weight. Largest Stock in United Kingdom. RICHARD SANKEY and SON, Bulwell Potteries, Nottingham.

STOVES.

Terra-Cotta! Portable! For Coal! **ROBERTS'S PATENT (IMPROVED),** for Greenhouses, Bedrooms, &c.

GREENHOUSES Heated 24 Hours for about One Penny, without attention. **ROBERTS'S PATENT TERRA-COTTA STOVES** for COAL give pure and ample heat with common coal, or coal and coke. For Greenhouses, Bedrooms, &c. Pamphlets, Drawings, and authenticated Testimonials sent.

See in use at Patentee's,

THOMAS ROBERTS,
112, Victoria Street, Westminster, S.W.

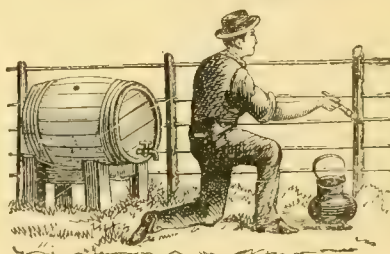
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and keep a fixed temperature under glass, by using "FRIGI DOMO," made of prepared hair and wool: a perfect non-conductor of cold.



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An excellent substitute for oil paint, at one-third the cost. Used in all London Parks, at Windsor, and Kew Gardens, and on every important estate in the Kingdom. Has stood the test of forty years' trial. Requires no mixing; can be applied cold by any ordinary labourer.

Price 1s. 6d. per gallon at the manufactory, or carriage paid to any railway station, 1s. 8d. per gallon in casks of 30, 20, or 10 gallons.

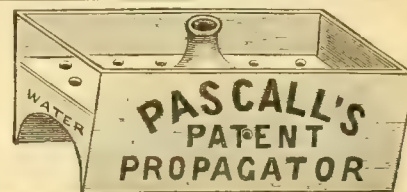
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HILL & SMITH,

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Made in superior earthenware, 11 in. long, 6 1/2 in. deep, and 6 in. wide. Inside, 2 1/2 inches from the top, is a perforated movable false bottom, upon which the soil for cuttings or seeds is placed, the lower half being filled with water, which is replenished when required through the funnel. It fits evenly on 4-inch hot-water pipes, and will be found a simple and effectual means of utilising them for propagating purposes. With the false bottom removed it forms an effective vapouriser. Price 3s. each; six carriage and package free to any station in Great Britain for £1 1s.; or two for 2s. 6d. Sole makers and patentees, T. PASCALL and SONS, South Norwood Pottery, Surrey, S.E. Ours are unsurpassed by any in the Trade. Garden Pots. £5 orders carriage paid to any goods station within 100 miles of London. Samples carriage free. Orchid Pottery of every description. Send for Price List.—**THOS. PASCALL & SONS**, South Norwood Pottery, Surrey, S.E.

THE GARDENERS' CHRONICLE

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9 " ..	0 5 6	20 " ..	0 11 0
10 " ..	0 6 0	21 " ..	0 11 6
11 " ..	0 6 6	22 " ..	0 12 0
12 " ..	0 7 0	23 " ..	0 12 6
13 " ..	0 7 6	24 " ..	0 13 0
14 " ..	0 8 0	25 " ..	0 13 6

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26 words, including name and address, 1s. 6d., and 6d. for every additional line (about 9 words) or part of a line.

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This scale does not apply to announcements of Vacant Situations, which are charged at the ordinary scale.

IMPORTANT NOTICE.—Advertisers are cautioned against having Letters addressed to *Initials at Post-offices*, as all Letters so addressed are opened by the authorities and returned to the sender.

BIRTHS, DEATHS and MARRIAGES, 5s. each insertion.

Advertisements for the current week must reach the Office by Thursday noon.

All Subscriptions Payable in Advance.

THE UNITED KINGDOM: 12 Months, 15s.; 6 Months, 7s. 6d.; 3 Months, 3s. 9d.

FOREIGN (excepting India and China): including Postage, 17s. 6d. for 12 Months; India and China 19s. 6d.
Post office Orders to be made payable at the Post Office, 42, DRURY LANE, W.C., to W. RICHARDS.PUBLISHING OFFICE and OFFICE for ADVERTISEMENTS,
41, Wellington Street, Strand, London, W.C.

SANKEY'S FAMOUS GARDEN POTS.

Best, cheapest, lightest, strongest.

SANKEY'S FAMOUS GARDEN POTS.

Best colour, shape, and finish; enormous stocks.

SANKEY'S FAMOUS GARDEN POTS.

No waiting; orders executed within one hour of letter or telegram. Thirty different sizes. Carriage and breakage free on £10 orders; half carriage on £5.

RICHARD SANKEY AND SON, Bulwell Potteries, Nottingham.

HORTICULTURAL GLASS	STOCK	SIZES	GLASS
	Inches.		
SHEET	14x12	20x15	SIZES
	18x12	20x16	
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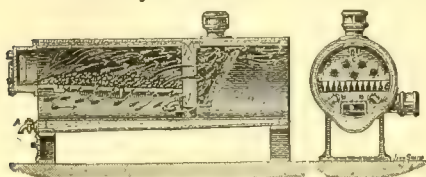
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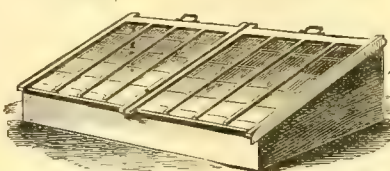
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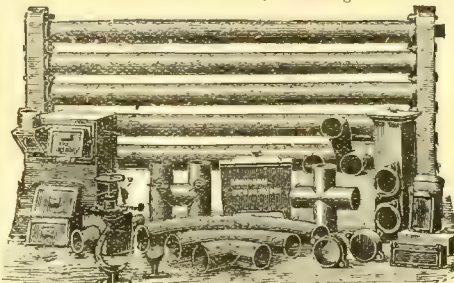
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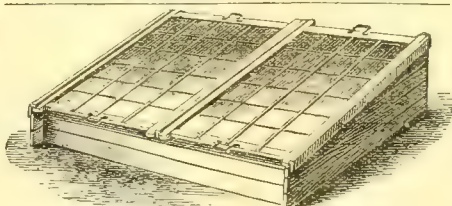
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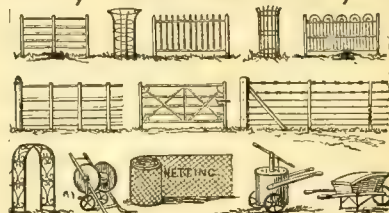
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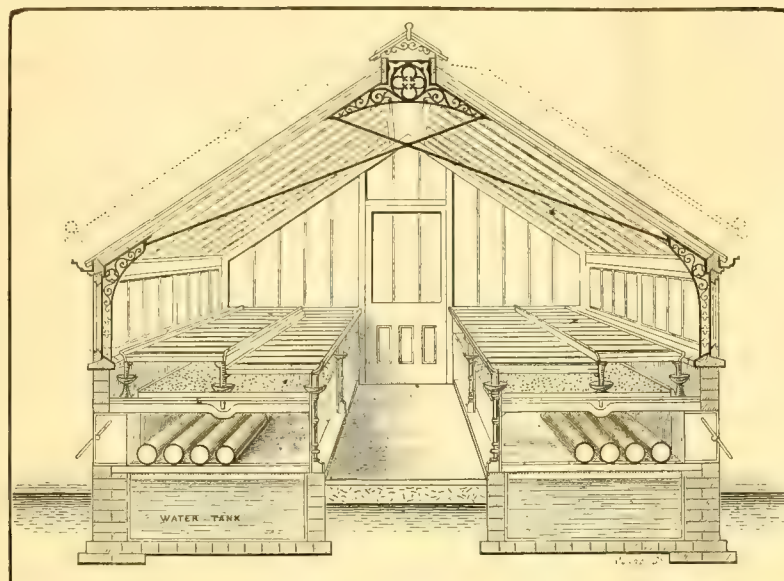
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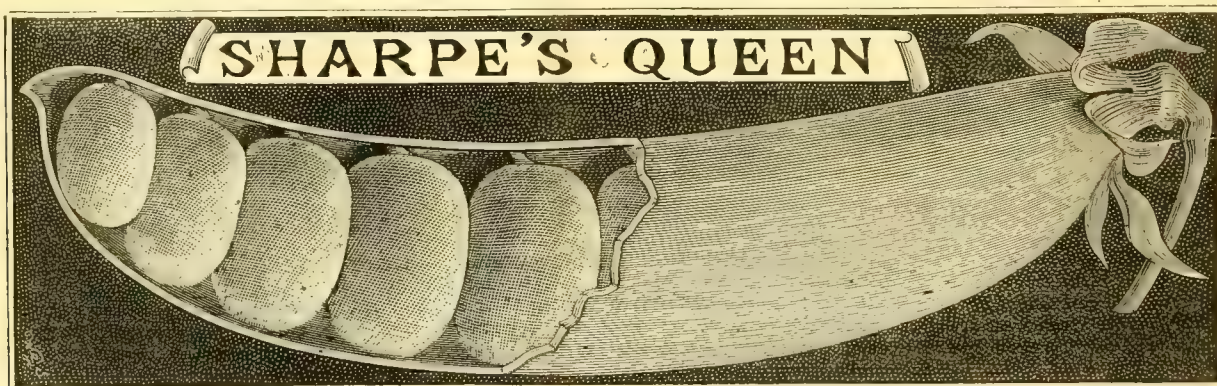
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